

Market Survey cum Detailed Techno Economic Feasibility Report

on

Active Pharma Ingredients

- *Metformin*
- *Amoxicillin*
- *Ibuprofen*
- *Paracetamol*

OP: AECACD RP: OS-1

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PROJECT FINANCIALS

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Physical Characteristics

ff^{5/8} %_{001/3}N_L€N_LV_T^{3/85/8} 1/3-3/8 %₀₀₁-@€N_LV_T^{3/85/8} 17/8 †Rs^{3/85/8}€R^{1/32/31/33/8} 1/81/3- 2/35/8
H_T€R^{1%5/81/8}N_L^{5/83/8} 1/3L^F ∞⁰ 1/21/2§ 1/4⁰ o 1/3-3/8 ∞⁰⁰ 1/2⁰§ 1/2⁰o P_t ff^{5/8} 1/8€N_LRs €L^F
-5/8L^FN_L%_{005/83/8} 1- N_L^{5/8} 5/81/81/81/3- ■%_{001/3}N_L^{5/81/3}V_T 1/3-3/8 €L^F H_T1L^F€N_L€1-5/83/8 1/3N_L 1/3
5/8€∞⁰N_L 17/8 1/3€R¹V_T-3/8 222 N^{5/8}N_L^{5/8}€R^{L^F} 7/8€R¹N⁰ N_L^{5/8} L^F^{5/81/3} %_{005/8}⊕5/8%₀₀P_t

□1/3€-7/81/3%₀₀%₀₀

□1/3€-L^F 2/3€R¹V_T∞⁰N_L 2/3Rs N_L^{5/8} L^F1V_TN_L⊗V^{5/8}L^FN_L L^FV_TN⁰N^{5/8}€R N⁰¹-L^F11-
%_{001/3}L^F⊕ †Rs^{3/85/8}€R^{1/32/31/33/8} 2/35/8N_LW^{5/85/8}- TMV_T-5/8 1/3-3/8 -5/8H_TN_L^{5/8}N^{02/35/8}€R€
L^FV_TH_TH_T%₀₀Rs€-∞ €N_L W€N_L⊕ N⁰¹L^FN_L 17/8 €N_LL^F 1/3--V_T1/3%₀₀ €R^{1/3}€-7/81/3%₀₀%₀₀ 17/8
⊕1/2P_t² N⁰N⁰ j1/41/2 €-jP_t ff^{5/8} ⊕€∞^{05/8}L^FN_L N⁰¹-N_L⊕%₀₀Rs €R^{1/3}€-7/81/3%₀₀%₀₀ N_L1N_L1/3%₀₀€
∞⁰⁰P_t² N⁰N⁰ j⁰ €-j€ 11/81/8V_T€L^F €- -5/8H_TN_L^{5/8}N^{02/35/8}€R^{P_t} ff^{5/8} 1/8€N_LRs €R^{5/81/85/8}€⊕5/8L^F
1/2€⁰1/4⁰ ⊕1V_T€L^F 17/8 L^FV_T-L^F⊕€-5/8 H_T^{5/8}€R Rs^{5/81/3}€R€ W€N_L⊕ N^{01/3}N€N⁰V_TN⁰ 3/81/3€%₀₀Rs
L^FV_T-%₀₀€∞⁰N_L 5/8N⁰H_T1L^FV_T€R^{5/8} 11/81/8V_T€R€-∞ €- O^{5/82/3}€R^{V_T}1/3€R^{Rs}P_t

Climate

†Rs^{3/85/8}€R^{1/32/31/33/8} ⊕1/3L^F 1/3 N_L€R¹H_T€1/81/3%₀₀ W^{5/8}N_L 1/3-3/8 3/8€R^{Rs}
1/8%₀₀€N^{01/3}N_L^{5/8} jSMÖH_TH_T^{5/8}- “Wj 2/31€R^{3/85/8}€R€-∞ 1- 1/3 ⊕1N_L L^F5/8N⁰€Y1/3€R€3/8
1/8%₀₀€N^{01/3}N_L^{5/8}P_t ff^{5/8} 1/3--V_T1/3%₀₀ N^{05/81/3}- N_L^{5/8}N⁰H_T^{5/8}€R^{1/3}N_LV_T€R^{5/8} €L^F 1/2ⁿP_tⁿ-
j⊕αP_tα⁰⊕j³ N⁰¹-N_L⊕%₀₀Rs N^{05/81/3}- N_L^{5/8}N⁰H_T^{5/8}€R^{1/3}N_LV_T€R^{5/8}L^F 1/3€R^{5/8} 1/2⁰-1/41/4⁰- j⊕^a-
α⁰⁰⊕jP_t-V_TN⁰N^{05/8}€R^{L^F} j●1/3€R^{1/8}⊕-TMV_T-5/8j 1/3€R^{5/8} ⊕1N_L 1/3-3/8 ⊕V_TN⁰€3/8€ W€N_L⊕
1/3⊕5/8€R^{1/3}⊕5/8 ⊕€∞⁰L^F €- N_L^{5/8} N⁰€3/8Y^{N_L}1Y⊕€∞⁰ 1/4^aL^F -5/8%₀₀L^F€V_TL^F³ N^{01/3}N€N⁰V_TN⁰
N_L^{5/8}N⁰H_T^{5/8}€R^{1/3}N_LV_T€R^{5/8}L^F 17/8N_L^{5/8}- 5/8N⁰1/85/85/83/8 €^a °- j^a€⁰⊕j 2/35/8N_LW^{5/85/8}- “H_T€R€%₀₀
1/3-3/8 TMV_T-5/8P_tF€⊕€ ff^{5/8} 1/8110%₀₀5/8L^FN_L N_L^{5/8}N⁰H_T^{5/8}€R^{1/3}N_LV_T€R^{5/8}L^F 11/81/8V_T€R €-
5/81/85/8N^{02/35/8}€R 1/3-3/8 TM1/3-V_T1/3€R^{Rs}€ W^{5/8}- N_L^{5/8} %₀₀₁W^{5/8}L^FN_L N_L^{5/8}N⁰H_T^{5/8}€R^{1/3}N_LV_T€R^{5/8}
11/81/81/3L^F€1-1/3%₀₀%₀₀Rs 3/8€H_TL^F N_L¹ ∞⁰- j^{2a}⊕jP_t ●1/3Rs €L^F N_L^{5/8} ⊕1N_LN_L^{5/8}L^FN_L
N⁰¹-N_L⊕ W^{5/8}- 3/81/3€%₀₀Rs N_L^{5/8}N⁰H_T^{5/8}€R^{1/3}N_LV_T€R^{5/8}L^F €R^{1/3}-⊕5/8 7/8€R¹N⁰ 1/2ⁿ N_L¹ 1/4α⁰-
j⊕α-∞⁰1/2⁰⊕j³ 5/81/85/8N^{02/35/8}€R€ N_L^{5/8} 1/81003/85/8L^FN_L⊕⊕1/3L^F N_L^{5/8}N⁰H_T^{5/8}€R^{1/3}N_LV_T€R^{5/8}L^F
⊕1/3€R^{Rs}€-∞ 7/8€R¹N⁰ ∞⁰P_t² N_L¹ 1/2⁰- j²⁰-⊕1/2⁰⊕jP_t

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Data Intentionally Removed - Sample Data

Demographics

ff⁰⁵/₈— N_L⁰⁵/₈ □†●— W¹/₃L_F 1/8_R5/8¹/₃N_L5/8³/₈ €— 1/2^{aa}0₀ N_L⁰⁵/₈ 1/3_R5/8¹/₃ 11/8¹/₈V_TH_T€5/8³/₈ 2/3_{Rs} N_L⁰⁵/₈ N⁰V_T—€1/8€H_T1/3⁰⁰00N_LRs €—1/8_R5/8¹/₃L_F5/8³/₈ 7/8_R1^N0⁰² %uN⁰¹/₂ j⁰0 L_FF_F N⁰€j N_L1 n^{2a} %uN⁰¹/₂ j1/2^{2a} L_FF_F N⁰€jP_t[41]—1—L_F5/8_FV_T5/8—N_L%00Rs£ N_L⁰⁵/₈ H_T1H_TV_T%001/3N_L€1— €—1/8_R5/8¹/₃L_F5/8³/₈ 2/3_{Rs} 00*£ 7/8_R1^N0 1/4£n1/40£0¹/₄ €— N_L⁰⁵/₈ 1/2^{aaa} 1/8⁵/₈—L_FV_TL_F N_L1 n£0^{aa}0^{aa}0^{aa} €— N_L⁰⁵/₈ 1/2^{aaa} 1/8⁵/₈—L_FV_TL_F£ 1/20* 17/8 W⁰€1/80 1/3_R5/8 N⁰€0_R1/3—N_LL_F 7/8_R1^N0 5/8%00L_F5/8W⁰⁵/₈R⁵/₈ €— ‡—3/8€1/3£ N⁰¹/₃%u€—0 †Rs³/₈5/8_R1/3²/₃1/3³/₈ N_L⁰⁵/₈ —1/3N_L€1—\$L_F fourth most populous cityP_t “L_F 17/8 1/2^{aaa}0₀ N_L⁰⁵/₈ H_T1H_TV_T%001/3N_L€1— 3/8⁵/₈—L_F€N_LRs €L_F 00£0^{aa}0^{aa}f%uN⁰¹/₂ j0£0^{aa}0^{aa}fL_FF_F N⁰€jP_t “N_L N_L⁰⁵/₈ L_F1/3N⁰⁵/₈ 1/2^{aaa} 1/8⁵/₈—L_FV_TL_F£ N_L⁰⁵/₈ †Rs³/₈5/8_R1/3²/₃1/3³/₈ ffR²/₃1/3— “000/001N⁰⁵/₈R¹/₃N_L€1— 01/3³/₈ 1/3 H_T1H_TV_T%001/3N_L€1— 17/8 0£0^{aa}0^{aa}£1/41/40£ N⁰¹/₃%u€—0 €N_L N_L⁰⁵/₈sixth most populous urban agglomeration €— N_L⁰⁵/₈ 1/8¹/_VT—N_LR_{Rs}P_t ff⁰⁵/₈ H_T1H_TV_T%001/3N_L€1— 17/8 N_L⁰⁵/₈ †Rs³/₈5/8_R1/3²/₃1/3³/₈ V_TR²/₃1/3— 1/3000/001N⁰⁵/₈R¹/₃N_L€1— 01/3L_F L_F€—1/8⁵/₈ 2/3⁵/₈5/8— 5/8L_FN_L€N⁰¹/₃N_L5/8³/₈ 2/3_{Rs} 5/8%005/8¹/₈N_L1_R1/3%00 17/87/8€1/8€1/3%00L_F N_L1 2/3⁵/₈ 0P_t0 N⁰€0%000€1— 1/3L_F 17/8 5/8¹/₃R%00Rs 1/2^{aa}1/4 2/3_VTN_L €L_F 5/8N⁰H_T5/8¹/₈N_L5/8³/₈ N_L1 5/8N¹1/8⁵/₈5/8³/₈ 0a N⁰€0%000€1— 2/3_{Rs} N_L⁰⁵/₈ 5/8—3/8 17/8 N_L⁰⁵/₈ Rs5/8¹/₃R_Pt ff⁰⁵/₈R⁵/₈ 1/3_R5/8 1/4£2^{aa}0^{aa}0^{aa}1/2 N⁰¹/₃%005/8 1/3—3/8 1/4£1/4^{aa}0^{aa}0^{aa} 7/85/8N⁰¹/₃%005/8 1/8€N_L€MD⁵/₈—L_F—1/3 sex ratio 17/8 00² 7/85/8N⁰¹/₃%005/8L_F H_T5/8_R 0aaa N⁰¹/₃%005/8L_F£ 0€005/8_R N_L01/3— N_L⁰⁵/₈ —1/3N_L€1—1/3%00 1/30⁵/₈R¹/₃05/8 17/8 01/2ⁿ H_T5/8_R 0aaaP_t “N⁰¹—0 1/80€0%003/8_R5/8— 1/305/8³/₈ 0—6 Rs5/8¹/₃R_L££ 1/401/4£0^{aa}0^{aa} 1/3_R5/8 2/3¹/_{Rs}L_F 1/3—3/8 1/4²¹2£^a1/21/2 1/3_R5/8 0€R%00L_F—1/3 _R1/3N_L€1 17/8 001/2 H_T5/8_R 0aaaP_t R€N_L5/8_R1/3¹/₈Rs L_FN_L1/3—3/8L_F 1/3N_L 01/2P_t0ⁿ* jN⁰¹/₃%005/8 02P_t0ⁿ* 7/85/8N⁰¹/₃%005/8 00P_t0ⁿ*j£ 0€005/8_R N_L01/3— N_L⁰⁵/₈ —1/3N_L€1—1/3%00 1/30⁵/₈R¹/₃05/8 17/8 00P_t0ⁿ*P_t ff⁰⁵/₈ L_F11/8€1⁵/₈1/8—1N⁰€1/8 L_FN_LR¹/₃N_L1/3 1/8¹/_—L_F€L_FN_L 17/8 1/2^a* upper class£ 2^a* middle class 1/3—3/8 1/4^a* working classP_t

Economy

†Rs³/₈5/8_R1/3²/₃1/3³/₈ €L_F N_L⁰⁵/₈ %001/3_R05/8L_FN_L 1/8¹/_—N_LR€2/3V_TN_L1_R N_L1 N_L⁰⁵/₈ 0_R1L_FL_F 3/8¹/_N05/8L_FN_L€1/8 H_TR¹/₃5/8V_T1/8N_L j□◀j£ N_L1/3N 1/3—3/8 1N_L⁰⁵/₈R_R 5/80⁵/₈—V_T5/8L_F££ 17/8 ff5/8%001/3—01/3—1/3£ 1/3—3/8 N_L⁰⁵/₈ L_F€N_L0 %001/3_R05/8L_FN_L 3/8⁵/₈H_T1L_F€N_L 1/8⁵/₈—N_LR⁵/₈ 1/3—3/8 7/8¹/_VT_RN_L0 %001/3_R05/8L_FN_L 1/8_R5/8³/₈€N_L 1/8⁵/₈—N_LR⁵/₈ —1/3N_L€1—W€3/8⁵/₈£ 1/3L_F _R1/3—%u5/8³/₈ 2/3_{Rs} N_L⁰⁵/₈ 05/8L_F5/8_R0⁵/₈ —1/3—%u 17/8 ‡—3/8€1/3 j□—‡j €— TMV_T—5/8

■⊕⁵/₈Γ_R N_L^⓪/₅ %00¹/₃Γ_FN_L 3⁄8⁵/₈1⁄8¹/₃3⁄8⁵/₈£ †R_S3⁄8⁵/₈Γ_R1⁄3²/₃1⁄3³/₈ ⊙¹/₃Γ_F H_T1_FN_L⁵/₈3⁄8
 3⁄8Γ_R1⁄3N^⓪¹/₃N_L€¹/₈ ⊙Γ_R¹W_NL_⓪Γ_F 1⁄3—3⁄8 €N_L €Γ_F 5⁄8N_HT⁵/₈1⁄8N_L⁵/₈3⁄8 N_L⓪¹/₃N_L €N_L W€⁰/₀%00
 1⁄8¹—N_L€—V_T⁵/₈ N_L1 ⊙Γ_R¹W €— N_L^⓪/₅ 7⁄8¹%00%00¹W€—⓪ R_S5⁄8¹/₃Γ_RΓ_FP_t —€—1⁄8⁵/₈ N_L^⓪/₅ α¹Γ_F£
 €N_LΓ_F 5⁄8¹/₈1[—]1^⓪€¹/₈ H_T1⁄3N_LN_L⁵/₈Γ_R— ⊙¹/₃Γ_F 1⁄8⓪¹/₃—⓪⁵/₈3⁄8 7⁄8Γ_R1^⓪ 2⁄3⁵/₈€—⓪
 H_TΓ_R€N^⓪¹/₃Γ_R€⁰/₀R_S Γ_F5⁄8Γ_R⊕€¹/₈5⁄8Y¹Γ_R€⁵/₈—N_L⁵/₈3⁄8 N_L1 1—5⁄8 W€⁰/₀N_L⓪ 1⁄3 2⁄3Γ_R1¹/₃3⁄8⁵/₈Γ_R
 1⁄3—3⁄8 N^⓪¹Γ_R5⁄8 3⁄8€⊕⁵/₈Γ_RΓ_F€⁷/₈€⁵/₈3⁄8 Γ_FH_T5⁄8¹/₈N_LΓ_RV_TN^⓪£ €—1⁄8%00V_T3⁄8€—⓪
 N_LΓ_R1⁄3—Γ_FH_T1_FN_L£ 1⁄8¹N^⓪N^⓪⁵/₈Γ_R1⁄8⁵/₈£ 1⁄3—3⁄8 1⁄8¹N^⓪N^⓪V_T—€¹/₈1⁄3N_L€¹—Γ_FP_t

Culture and Attitudes

†- N⁰¹/₃-Rs L⁵/₈-L⁵/₈L⁵/₈ †Rs³/₈5/8R¹/₃2/31/33/8 €L⁵ N⁰⁵/₈ N⁰⁵/₈5/8N⁰⁵/₈€-⊙ ⊙R¹V¹-3/8 2/35/8N¹W⁵/₈5/8- o1R¹N⁰ 1/3-3/8 -1V¹N⁰ †-3/8€1/3Pt ff⁰⁵/₈ 1/8€N¹Rs ⊙1/3L⁵ 1/3 1/8V¹000N¹V¹R⁵/₈ N⁰1/3N¹ €L⁵ 3/8€L⁵N⁰€-1/8N¹ 7/8R¹N⁰ N⁰⁵/₈ R⁵/₈L⁵N¹ 17/8 “-3/8⊙R¹/₃ ■R¹/₃3/85/8L⁵⊙ L⁵⊙1W⁵€-⊙ †L⁵0001/3N⁰€1/8 €-7/800V¹5/8-1/85/8L⁵ 1/3-3/8 1/3 1/81V¹R¹N⁰00Rs H¹R⁵/₈L⁵5/8-1/85/8 €N⁰H¹1/3R¹N¹5/83/8 7/8R¹N⁰ €N¹L⁵ H¹5/8R¹€13/8 1/3L⁵ N⁰⁵/₈ 1/81/3H¹€N¹1/300 17/8 N⁰⁵/₈ o€MD1/3N⁰1/3N¹5/8Pt ff⁰⁵/₈€L⁵ €L⁵ N⁰¹R⁵/₈ 5/8⊕€3/85/8-N¹ €- N⁰⁵/₈ 10003/8 1/8€N¹RsPt ff⁰⁵/₈ -5/8W 1/8€N¹Rs R⁵/₈L⁵5/8N⁰²/₃005/8L⁵ N⁰¹/₃-Rs H¹R¹⊕€-1/8€1/300 L⁵N¹1/3N¹5/8 1/81/3H¹€N¹1/300L⁵ €- †-3/8€1/3Pt -5/81/8V¹-3/85/8R¹/₃2/31/33/8 €L⁵ N⁰¹R⁵/₈ 1/81L⁵N⁰¹H¹1000€N¹1/3-£ 1/3L⁵ N⁰⁵/₈ -1/3-N¹1-N⁰⁵/₈-N¹ 1/3R⁵/₈1/3 €L⁵ 00011/81/3N¹5/83/8 €- N⁰€L⁵ H¹1/3R¹N¹ 17/8 N⁰⁵/₈ 1/8€N¹RsPt

⋈V¹5/8 N¹1 1/3 R⁵/₈1/85/8-N¹ €-7/800V¹N¹ 17/8 Rs1V¹-⊙ N⁰⁵/₈- 1/3-3/8 W¹N⁰⁵/₈- 7/8R¹N⁰ ⊕1/3R¹€1V¹L⁵ H¹1/3R¹N¹L⁵ 17/8 N⁰⁵/₈ 1/81V¹-N¹R¹Rs£ †Rs³/₈5/8R¹/₃2/31/33/8S¹L⁵ 1/8V¹000N¹V¹R⁵/₈ 1/3-3/8 1/3N¹N¹€N¹V¹3/85/8L⁵ ⊙1/3⊕5/8 N¹1/3C¹5/8- 1/3 N¹V¹R¹- N¹W¹1/3R¹3/8L⁵ oN⁰¹3/85/8R¹-€N¹Rs⊙Pt †1W⁵⊕5/8R¹€N¹ €L⁵ ⊙113/8 N¹1 C¹5/85/8H¹ €- N⁰€-3/8 N⁰1/3N¹ N⁰⁵/₈ 1/8€N¹Rs €L⁵ L⁵N¹€00000 1/3 3/85/85/8H¹00Rs 1/81-L⁵5/8R¹⊕1/3N¹€⊕5/8 H¹0001/31/85/8 1/3-3/8 N¹1 3/8R⁵/₈L⁵L⁵ 1/3H¹H¹R¹H¹R¹€1/3N¹5/800Rs£ 5/8L⁵H¹5/81/8€1/30000Rs €- N⁰⁵/₈ 10003/8 1/8€N¹RsPt

Transport

ff⁰⁵/₈ N⁰¹L⁵N¹ 1/81N⁰N⁰¹-000Rs V¹L⁵5/83/8 7/81R¹N⁰L⁵ 17/8 N⁰⁵/₈3/8€V¹N⁰ 3/8€L⁵N¹1/3-1/85/8 N¹R¹/₃-L⁵H¹1R¹N¹ €- †Rs³/₈5/8R¹/₃2/31/33/8 €-1/800V¹3/85/8 ⊙1⊕5/8R¹-N⁰⁵/₈-N¹ 1W⁵-5/83/8 L⁵5/8R¹⊕€1/85/8L⁵ L⁵V¹1/8⊙ 1/3L⁵ 000€⊙⊙N¹ R¹/₃€000W¹1/3RsL⁵ 1/3-3/8 2/3V¹L⁵5/8L⁵ 1/3L⁵ W⁵800000 1/3L⁵ H¹R¹€⊕1/3N¹5/800Rs 1H¹5/8R¹/₃N¹5/83/8 N¹1/3N¹€L⁵ 1/3-3/8 1/3V¹N¹1 R¹€1/8C¹L⁵⊙1/3W¹L⁵Pt-V¹L⁵ L⁵5/8R¹⊕€1/85/8L⁵ 1H¹5/8R¹/₃N¹5/8 7/8R¹N⁰ N⁰⁵/₈ ●1/3⊙1/3N¹N⁰¹/₃ □1/3-3/8⊙€ -V¹L⁵ -N¹1/3N¹€1- €- N⁰⁵/₈ 1/8€N¹Rs 1/85/8-N¹5/8R¹/₃-3/8 1/81/3R¹R¹Rs 1⊕5/8R¹ 2/4^a N⁰€00000€1- H¹1/3L⁵L⁵5/8-⊙5/8R¹L⁵ 3/81/3€000Rs 1/31/8R¹L⁵L⁵ N⁰⁵/₈ 5/8-N¹€R⁵/₈ -5/8N¹W¹C¹Pt†Rs³/₈5/8R¹/₃2/31/33/8S¹L⁵ 000€⊙⊙N¹ R¹/₃€000 N¹R¹/₃-L⁵H¹1R¹N¹1/3N¹€1- L⁵RsL⁵N¹5/8N⁰ N⁰⁵/₈ ●V¹000N¹€¥●13/81/300 ff⁰⁵/₈1/3-L⁵H¹1R¹N¹ -RsL⁵N¹5/8N⁰ i●●ff-£€L⁵ 1/3 N⁰€R⁵/₈5/8 000€-5/8 L⁵V¹2/3V¹R¹2/31/3- R¹/₃€000 L⁵5/8R¹⊕€1/85/8 V¹L⁵5/83/8 2/3Rs 1⊕5/8R¹

“ \mathbb{F} 17/8 $\frac{1}{2}2^{221}2\mathbb{E}$ $\mathbb{N}_L^{\circledast 5/8}\mathbb{R}5/8$ $\frac{1}{3}\mathbb{R}5/8$ $1\oplus 5/8\mathbb{R}$ $\frac{1}{4}\mathbb{P}t^2$ $\mathbb{N}^{\circledast}\in\%00\%0\in 1-$ $\oplus 5/8\in 1/8\%05/8\mathbb{F}$
 $1\mathbb{H}t5/8\mathbb{R}\frac{1}{3}\mathbb{N}_L\in-\otimes$ $\in-$ $\mathbb{N}_L^{\circledast 5/8}$ $\frac{1}{8}\in\mathbb{N}_L\mathbb{R}s\mathbb{E}$ 17/8 $\mathbb{W}^{\circledast}\in 1/8^{\circledast}$ $\otimes\mathbb{C}_*$ $\frac{1}{3}\mathbb{R}5/8$ $\mathbb{N}_L\mathbb{W}^{13}\mathbb{W}^{\circledast 5/8}5/8\%005/8\mathbb{R}^{\circledast}\mathbb{F}\mathbb{E}$
 $^{22}_*$ $\frac{1}{8}\frac{1}{3}\mathbb{R}^{\circledast}\mathbb{F}$ $\frac{1}{3}-\frac{3}{8}$ $\frac{1}{4}_*$ $\mathbb{N}_L^{\circledast}\mathbb{C}\mathbb{R}5/85/8\mathbb{Y}\mathbb{W}^{\circledast 5/8}5/8\%005/8\mathbb{R}^{\circledast}\mathbb{F}\mathbb{P}t$ $\mathbb{f}\mathbb{f}^{\circledast 5/8}$ $\mathbb{R}5/8\mathbb{N}^{\circledast}\frac{1}{3}\in-\in-\otimes$ \otimes_*
 $\in-1/8\%00\mathbb{V}t3/85/8$ $\frac{2}{3}\mathbb{V}t\mathbb{F}5/8\mathbb{F}\mathbb{E}$ $\otimes^{113}8\mathbb{F}$ $\oplus 5/8\in 1/8\%005/8\mathbb{F}$ $\frac{1}{3}-\frac{3}{8}$ $\mathbb{N}_L\frac{1}{3}\mathbb{N}\in\mathbb{L}\mathbb{F}\mathbb{P}t$ $\mathbb{f}\mathbb{f}^{\circledast 5/8}$ $\%00\frac{1}{3}\mathbb{R}^{\circledast 5/8}$
 $-\mathbb{V}t\mathbb{N}^{22}5/8\mathbb{R}$ 17/8 $\oplus 5/8\in 1/8\%005/8\mathbb{F}$ $\frac{1}{8}\frac{1}{4}\mathbb{V}t\mathbb{H}t\%005/83/8$ $\mathbb{W}\in\mathbb{N}_L^{\circledast}$ $\mathbb{R}5/8\%00\frac{1}{3}\mathbb{N}_L\in\oplus 5/8\%00\mathbb{R}s$ $\%00\frac{1}{4}\mathbb{W}$
 $\mathbb{R}^{11}3/38$ $\frac{1}{8}\frac{1}{4}\oplus 5/8\mathbb{R}^{1/3}\mathbb{R}^{\circledast 5/8}\mathbb{R}^{11}3/38\mathbb{F}$ $\frac{1}{8}\frac{1}{8}\mathbb{V}t\mathbb{H}t\mathbb{R}s$ $1-\%00\mathbb{R}s$ $\mathbb{R}\mathbb{P}t^2_*$ 17/8 $\mathbb{N}_L^{\circledast 5/8}$ $\mathbb{N}_L\frac{1}{4}\mathbb{N}_L\frac{1}{3}\%00$ $\frac{1}{8}\in\mathbb{N}_L\mathbb{R}s$
 $\frac{1}{3}\mathbb{R}5/8\frac{1}{3}-\otimes\frac{1}{3}\mathbb{F}$ $\%005/83/8$ \mathbb{N}_L^1 $\mathbb{W}\in 3/85/8\mathbb{F}\mathbb{H}t\mathbb{R}5/8\frac{1}{3}3/8$ $\mathbb{N}_L\mathbb{R}^{1/3}7/87/8\in\frac{1}{8}$ $\frac{1}{8}1-\otimes 5/8\mathbb{F}\mathbb{N}_L\in 1-$
 $5/8\mathbb{F}\mathbb{H}t5/8\frac{1}{8}\in\frac{1}{3}\%00\%00\mathbb{R}s$ $\mathbb{F}\in-1/85/8$ \otimes^2_* 17/8 $\mathbb{H}t\frac{1}{3}\mathbb{F}\mathbb{F}\mathbb{F}5/8-\otimes 5/8\mathbb{R}^{\circledast}\mathbb{F}$ $\frac{1}{3}-\frac{3}{8}$ n^2_* 17/8 $\frac{7}{8}\mathbb{R}5/8\in\otimes\otimes\mathbb{N}_L$
 $\frac{1}{3}\mathbb{R}5/8$ $\mathbb{N}_L\mathbb{R}^{1/3}-\mathbb{F}\mathbb{H}t\mathbb{R}^{\circledast}\mathbb{N}_L5/83/8$ $\frac{2}{3}\mathbb{R}s$ $\mathbb{R}^{11}3/38\mathbb{P}t$ $\mathbb{f}\mathbb{f}^{\circledast 5/8}$ $\ddagger-5/8\mathbb{R}$ $\square\in-\otimes$ $\square^{11}3/38\mathbb{E}$ $\mathbb{N}_L^{\circledast 5/8}$ $\blacksquare\mathbb{V}t\mathbb{N}_L5/8\mathbb{R}$
 $\square\in-\otimes$ $\square^{11}3/38\mathbb{E}$ $\mathbb{N}_L^{\circledast 5/8}$ $\ddagger\mathbb{R}s3/85/8\mathbb{R}^{1/2}3/383/8$ $\%005/8\oplus\frac{1}{3}\mathbb{N}_L5/83/8$ $\mathbb{N}^{\circledast}\mathbb{H}t\mathbb{R}5/8\mathbb{F}\mathbb{F}\mathbb{F}\mathbb{W}^{1/3}\mathbb{R}s\mathbb{E}$ $\mathbb{N}_L^{\circledast 5/8}$
 $\%001-\otimes 5/8\mathbb{F}\mathbb{N}_L$ $\frac{7}{8}\%00\mathbb{R}s\frac{1}{4}\oplus 5/8\mathbb{R}$ $\in-$ $\ddagger-3/8\in\frac{1}{3}\mathbb{E}\frac{1}{3}-\frac{3}{8}$ $\oplus\frac{1}{3}\mathbb{R}\in\frac{1}{4}\mathbb{F}\mathbb{F}$ $\in-\mathbb{N}_L5/8\mathbb{R}^{1/8}\otimes\frac{1}{3}-\otimes 5/8\mathbb{F}\mathbb{E}$
 $1\oplus 5/8\mathbb{R}\mathbb{H}t\frac{1}{3}\mathbb{F}\mathbb{F}\mathbb{F}5/8\mathbb{F}$ $\frac{1}{3}-\frac{3}{8}$ $\mathbb{V}t-\frac{3}{8}5/8\mathbb{R}\mathbb{H}t\frac{1}{3}\mathbb{F}\mathbb{F}\mathbb{F}5/8\mathbb{F}$ $\mathbb{W}^5\mathbb{R}5/8$ $\frac{2}{3}\mathbb{V}t\in\%00\mathbb{N}_L$ \mathbb{N}_L^1 $\frac{5}{8}\frac{1}{3}\mathbb{F}5/8$ $\mathbb{N}_L^{\circledast 5/8}$
 $\frac{1}{8}1-\otimes 5/8\mathbb{F}\mathbb{N}_L\in 1-\mathbb{P}t$

Introduction

The Active Ingredient (API) is the part of any drug that produces the intended effects. Some drugs, such as combination therapies, have multiple active ingredients to treat different symptoms or act in different ways.

Production of APIs has traditionally been done by the pharmaceutical companies themselves in their home countries. But in recent years many corporations have opted to send manufacturing overseas to cut costs. This has caused significant changes to how these drugs are regulated, with more rigorous guidelines and inspections put into place.

The similar terms active pharmaceutical ingredient and bulk active are also used in medicine, and the term active substance may be used for natural products.

The similar terms active pharmaceutical ingredient and bulk active are also used in medicine, and the term active substance may be used for natural products.

Metformin

Introduction

Metformin, sold under the brand name Glucophage among others, is the first-line medication for the treatment of type 2 diabetes, particularly in people who are overweight. It is also used in the treatment of polycystic ovary syndrome. It is not associated with weight gain and is taken by mouth. It is sometimes used as an off-label augment to attenuate the risk of weight gain in people who take antipsychotics as well as phenelzine.

● $\frac{5}{8}N\frac{7}{8}1^{\circ}R^{\circ}N^{\circ}E-$ $E^{\circ}F$ $\frac{5}{8}-\frac{5}{8}F^{\circ}R^{\circ}\frac{1}{3}\frac{0}{00}\frac{0}{00}Rs$ $\frac{W}{W}\frac{5}{8}\frac{0}{00}\frac{0}{00}$ $N\frac{1}{10}\frac{0}{00}\frac{5}{8}F^{\circ}R^{\circ}\frac{1}{3}N\frac{5}{8}\frac{3}{8}P_t$ $-1^{\circ}N^{\circ}N^{\circ}1-$
 $\frac{1}{3}\frac{3}{8}\frac{5}{8}F^{\circ}R^{\circ}F^{\circ}\frac{5}{8}$ $\frac{5}{8}\frac{7}{8}\frac{7}{8}\frac{5}{8}\frac{1}{8}N\frac{1}{8}F$ $E-\frac{1}{8}\frac{0}{00}V^{\circ}T^{\circ}\frac{3}{8}\frac{5}{8}$ $\frac{3}{8}E\frac{1}{3}F^{\circ}R^{\circ}R^{\circ}\frac{0}{05}\frac{1}{3}\frac{5}{8}$ $-\frac{1}{3}V^{\circ}T^{\circ}F^{\circ}\frac{5}{8}\frac{1}{3}\frac{5}{8}$ $\frac{1}{3}-\frac{3}{8}$
 $\frac{1}{3}\frac{2}{3}\frac{3}{8}1^{\circ}N^{\circ}E-\frac{1}{3}\frac{0}{00}$ $H^{\circ}T^{\circ}\frac{1}{3}E-P_t$ $\pm N$ $\frac{0}{1}\frac{3}{8}F$ $\frac{1}{3}$ $\frac{0}{00}1^{\circ}W$ $F^{\circ}R^{\circ}E^{\circ}F^{\circ}\frac{0}{0}$ $\frac{1}{7}\frac{1}{8}$ $\frac{1}{8}\frac{1}{3}V^{\circ}T^{\circ}F^{\circ}E-\frac{0}{0}$ $\frac{0}{00}1^{\circ}W$ $\frac{2}{3}\frac{0}{00}\frac{1}{13}\frac{3}{8}$
 $F^{\circ}V^{\circ}T^{\circ}\frac{0}{1}\frac{3}{8}F^{\circ}R^{\circ}P_t$ $\pm E^{\circ}0$ $\frac{2}{3}\frac{0}{00}\frac{1}{13}\frac{3}{8}$ $\frac{0}{00}\frac{1}{3}\frac{1}{8}N\frac{1}{8}E\frac{1}{8}$ $\frac{1}{3}\frac{1}{8}E\frac{3}{8}$ $\frac{0}{00}\frac{5}{8}\frac{5}{8}\frac{0}{00}$ $E^{\circ}F$ $\frac{1}{3}$ $\frac{1}{8}1-\frac{1}{8}\frac{5}{8}F^{\circ}R^{\circ}$ $E^{\circ}\frac{7}{8}$ $N\frac{0}{5}\frac{5}{8}$
 $N^{\circ}\frac{0}{5}\frac{3}{8}E\frac{1}{8}\frac{1}{3}N\frac{1}{8}E1-$ $E^{\circ}F$ $V^{\circ}T^{\circ}F^{\circ}\frac{5}{8}\frac{3}{8}$ $E-$ $1^{\circ}\frac{5}{8}F^{\circ}R^{\circ}\frac{0}{00}Rs$ $\frac{0}{00}\frac{1}{3}F^{\circ}R^{\circ}\frac{0}{5}\frac{5}{8}$ $\frac{3}{8}1^{\circ}F^{\circ}\frac{5}{8}\frac{1}{8}$ $F^{\circ}R^{\circ}$ $H^{\circ}T^{\circ}F^{\circ}\frac{5}{8}\frac{1}{8}F^{\circ}R^{\circ}E\frac{2}{3}\frac{5}{8}\frac{3}{8}$
 $E-$ $H^{\circ}T^{\circ}\frac{5}{8}1^{\circ}H^{\circ}\frac{0}{00}\frac{5}{8}$ $W\in N\frac{0}{5}$ $F^{\circ}\frac{5}{8}\frac{5}{8}F^{\circ}R^{\circ}\frac{5}{8}$ $\frac{0}{0}E\frac{3}{8}-\frac{5}{8}Rs$ $H^{\circ}T^{\circ}F^{\circ}\frac{1}{3}\frac{0}{00}\frac{5}{8}N^{\circ}F^{\circ}P_t$ $\pm N$ $E^{\circ}F$ $-1^{\circ}N\frac{1}{8}$
 $F^{\circ}R^{\circ}\frac{5}{8}\frac{1}{8}1^{\circ}N^{\circ}N^{\circ}\frac{0}{5}\frac{5}{8}-\frac{3}{8}\frac{5}{8}\frac{3}{8}$ $E-$ $N\frac{0}{1}\frac{0}{1}F^{\circ}\frac{5}{8}$ $W\in N\frac{0}{5}$ $F^{\circ}E^{\circ}-E^{\circ}\frac{7}{8}E\frac{1}{8}\frac{1}{3}-N\frac{0}{00}E\frac{5}{8}F^{\circ}R^{\circ}$ $\frac{3}{8}E^{\circ}F^{\circ}\frac{5}{8}\frac{1}{3}F^{\circ}\frac{5}{8}P_t$
 ● $\frac{5}{8}N\frac{7}{8}1^{\circ}R^{\circ}N^{\circ}E-$ $E^{\circ}F$ $\frac{1}{3}$ $\frac{2}{3}E^{\circ}V^{\circ}T^{\circ}\frac{1}{3}-E\frac{3}{8}\frac{5}{8}$ $\frac{1}{3}-N\frac{0}{5}E^{\circ}Rs$ $H^{\circ}T^{\circ}\frac{5}{8}F^{\circ}R^{\circ}\frac{0}{00}Rs$ $\frac{1}{8}\frac{5}{8}N^{\circ}E\frac{1}{8}$ $\frac{1}{3}\frac{0}{5}\frac{5}{8}-N\frac{1}{8}P_t$ $\pm N$
 $W\frac{1}{8}F^{\circ}R^{\circ}\frac{0}{0}F^{\circ}$ $\frac{2}{3}Rs$ $\frac{3}{8}\frac{5}{8}\frac{1}{8}F^{\circ}R^{\circ}\frac{5}{8}\frac{1}{3}F^{\circ}E-\frac{0}{0}$ $\frac{0}{00}V^{\circ}T^{\circ}\frac{1}{8}\frac{1}{8}F^{\circ}\frac{5}{8}$ $H^{\circ}T^{\circ}F^{\circ}\frac{1}{3}\frac{1}{8}N\frac{1}{8}E1-$ $\frac{2}{3}Rs$ $N\frac{0}{5}\frac{5}{8}$ $\frac{0}{00}E\frac{5}{8}F^{\circ}R^{\circ}$ $\frac{2}{3}Rs$
 $E-\frac{1}{8}F^{\circ}R^{\circ}\frac{5}{8}\frac{1}{3}F^{\circ}E-\frac{0}{0}$ $N\frac{0}{5}\frac{5}{8}$ $E-\frac{1}{8}V^{\circ}T^{\circ}\frac{0}{00}E-$ $F^{\circ}\frac{5}{8}-F^{\circ}E\frac{1}{8}E\frac{0}{0}E\frac{1}{8}Rs$ $\frac{1}{7}\frac{1}{8}$ $\frac{2}{3}\frac{1}{3}\frac{3}{8}Rs$ $N\frac{1}{8}E^{\circ}F^{\circ}F^{\circ}\frac{5}{8}\frac{1}{8}F^{\circ}\frac{5}{8}$ $\frac{1}{3}-\frac{3}{8}$
 $\frac{2}{3}Rs$ $E-\frac{1}{8}F^{\circ}R^{\circ}\frac{5}{8}\frac{1}{3}F^{\circ}E-\frac{0}{0}$ $\square, O^{\circ}\frac{0}{2}$ $F^{\circ}\frac{5}{8}\frac{1}{8}F^{\circ}R^{\circ}\frac{5}{8}N\frac{1}{8}E1-\frac{5}{8}$ $W^{\circ}E\frac{1}{8}\frac{0}{0}$ $F^{\circ}R^{\circ}\frac{5}{8}\frac{3}{8}V^{\circ}T^{\circ}\frac{1}{8}\frac{5}{8}\frac{1}{8}$ $\frac{1}{3}H^{\circ}T^{\circ}\frac{5}{8}N\frac{1}{8}E\frac{1}{8}$ $\frac{1}{3}-\frac{3}{8}$
 $\frac{1}{8}\frac{1}{3}\frac{0}{00}1^{\circ}F^{\circ}R^{\circ}E\frac{1}{8}$ $E-N\frac{1}{3}\frac{0}{0}\frac{5}{8}P_t$

● $\frac{5}{8}N\frac{7}{8}1^{\circ}R^{\circ}N^{\circ}E-$ $W\frac{1}{3}F$ $\frac{3}{8}E^{\circ}F^{\circ}\frac{1}{8}\frac{1}{8}\frac{5}{8}F^{\circ}R^{\circ}\frac{5}{8}\frac{3}{8}$ $E-$ $\frac{0}{0}1^{\circ}\frac{1}{2}\frac{1}{2}P_t$ $O^{\circ}F^{\circ}\frac{5}{8}-\frac{1}{8}\frac{0}{0}$ $H^{\circ}T^{\circ}Rs$ $F^{\circ}E\frac{1}{8}E\frac{1}{3}-$
 $TM^{\circ}\frac{5}{8}\frac{1}{3}-$ $N\frac{1}{8}\frac{5}{8}F^{\circ}R^{\circ}-\frac{5}{8}$ $\frac{2}{3}\frac{5}{8}\frac{0}{1}\frac{3}{8}-$ $N\frac{0}{5}\frac{5}{8}$ $F^{\circ}N\frac{1}{8}V^{\circ}T^{\circ}\frac{3}{8}Rs$ $E-$ $\frac{0}{0}V^{\circ}T^{\circ}\frac{0}{1}\frac{3}{8}-F^{\circ}$ $E-$ $N\frac{0}{5}\frac{5}{8}$ $\frac{0}{0}2^{\circ}\frac{1}{8}F^{\circ}P_t$ $\pm N$ $W\frac{1}{3}F$
 $E-N\frac{1}{8}F^{\circ}R^{\circ}\frac{1}{3}\frac{1}{8}V^{\circ}T^{\circ}\frac{5}{8}\frac{3}{8}$ $\frac{1}{3}F$ $\frac{1}{3}$ $N^{\circ}\frac{0}{5}\frac{3}{8}E\frac{1}{8}\frac{1}{3}N\frac{1}{8}E1-$ $E-$ $O^{\circ}F^{\circ}\frac{1}{3}-\frac{1}{8}\frac{5}{8}$ $E-$ $\frac{0}{0}2^{\circ}\frac{0}{0}$ $\frac{1}{3}-\frac{3}{8}$ $N\frac{0}{5}\frac{5}{8}$ $ffi-E\frac{1}{8}\frac{5}{8}\frac{3}{8}$
 $-N\frac{1}{8}\frac{1}{8}N\frac{5}{8}\frac{1}{8}F^{\circ}$ $E-$ $\frac{0}{0}2^{\circ}\frac{0}{0}P_t$ $\pm N$ $E^{\circ}F$ $1-$ $N\frac{0}{5}\frac{5}{8}$ $ffi-F^{\circ}R^{\circ}\frac{0}{00}\frac{3}{8}$ $\frac{1}{5}\frac{1}{3}\frac{0}{00}N\frac{0}{5}$ $\blacksquare F^{\circ}R^{\circ}\frac{0}{1}\frac{3}{8}-E\frac{0}{0}\frac{1}{3}\frac{1}{8}N\frac{1}{8}E1-\frac{5}{8}$ $F^{\circ}R^{\circ}E\frac{1}{8}N\frac{1}{8}$
 $\frac{1}{7}\frac{1}{8}$ $F^{\circ}F^{\circ}\frac{5}{8}-N\frac{1}{8}E\frac{1}{3}\frac{0}{00}$ ● $\frac{5}{8}\frac{3}{8}E\frac{1}{8}E-\frac{5}{8}F^{\circ}P_t$ ● $\frac{5}{8}N\frac{7}{8}1^{\circ}R^{\circ}N^{\circ}E-$ $E^{\circ}F$ $N\frac{0}{5}\frac{5}{8}$ $N^{\circ}1^{\circ}F^{\circ}N\frac{1}{8}$ $W\in\frac{3}{8}\frac{5}{8}\frac{0}{00}Rs$
 $V^{\circ}T^{\circ}F^{\circ}\frac{5}{8}\frac{3}{8}$ $N^{\circ}\frac{0}{5}\frac{3}{8}E\frac{1}{8}\frac{1}{3}N\frac{1}{8}E1-$ $\frac{7}{8}1^{\circ}F^{\circ}R^{\circ}$ $\frac{3}{8}E\frac{1}{3}\frac{2}{3}\frac{5}{8}N\frac{5}{8}\frac{1}{8}F^{\circ}$ $N\frac{1}{3}\frac{0}{0}\frac{5}{8}-$ $\frac{2}{3}Rs$ $N^{\circ}1^{\circ}V^{\circ}N\frac{0}{5}P_t$ $\pm N$ $E^{\circ}F$
 $\frac{1}{3}\frac{5}{8}\frac{1}{3}E\frac{0}{00}\frac{1}{3}\frac{2}{3}\frac{0}{00}\frac{5}{8}$ $\frac{1}{3}F$ $\frac{1}{3}$ $\frac{0}{5}\frac{5}{8}-\frac{5}{8}F^{\circ}R^{\circ}E\frac{1}{8}$ $N^{\circ}\frac{0}{5}\frac{3}{8}E\frac{1}{8}\frac{1}{3}N\frac{1}{8}E1-P_t$ \pm $\frac{1}{2}\frac{0}{0}2^{\circ}\frac{0}{0}$ $E\frac{1}{8}$ $W\frac{1}{3}F$ $N\frac{0}{5}\frac{5}{8}$
 $\frac{7}{8}\frac{1}{8}V^{\circ}T^{\circ}F^{\circ}N\frac{0}{5}F^{\circ}N\frac{0}{5}\frac{1}{8}N\frac{0}{5}N^{\circ}1^{\circ}-\frac{0}{00}Rs$ $H^{\circ}T^{\circ}F^{\circ}\frac{5}{8}\frac{1}{8}F^{\circ}R^{\circ}E\frac{2}{3}\frac{5}{8}\frac{3}{8}$ $N^{\circ}\frac{0}{5}\frac{3}{8}E\frac{1}{8}\frac{1}{3}N\frac{1}{8}E1-$ $E-$ $N\frac{0}{5}\frac{5}{8}$ $ffi-E\frac{1}{8}\frac{5}{8}\frac{3}{8}$
 $-N\frac{1}{3}\frac{1}{8}N\frac{5}{8}\frac{1}{8}F^{\circ}$ $W\in N\frac{0}{5}$ $N^{\circ}1^{\circ}F^{\circ}\frac{5}{8}$ $N\frac{0}{1}\frac{3}{8}-$ $\frac{0}{2}$ $N^{\circ}E\frac{0}{00}\frac{0}{00}E1-$ $H^{\circ}T^{\circ}F^{\circ}\frac{5}{8}\frac{1}{8}F^{\circ}R^{\circ}E\frac{1}{8}N\frac{1}{8}E1-P_t$

Medical Uses

Metformin is used to treat high blood sugar levels that are caused by a type of diabetes mellitus or sugar diabetes called type 2 diabetes. With this type of diabetes, insulin produced by the pancreas is not able to get sugar into the cells of the body where it can work properly.

Using metformin alone, with a type of oral antidiabetic medicine called a sulfonylurea, or with insulin, will help to lower blood sugar when it is too high and help restore the way you use food to make energy.

Metformin is used to lower the blood sugar in those with type 2 diabetes. It is also used as a second-line agent for infertility in those with polycystic ovary syndrome.

Type 2 Diabetes

Metformin is used to treat high blood sugar levels that are caused by a type of diabetes mellitus or sugar diabetes called type 2 diabetes. With this type of diabetes, insulin produced by the pancreas is not able to get sugar into the cells of the body where it can work properly.

Efficacy

The U K Prospective Diabetes Study, a large clinical trial performed in 1980–90s, provided evidence that metformin reduced the rate of adverse cardiovascular outcomes in overweight patients with type 2 diabetes relative to other antihyperglycemic agents. Accumulated evidence from other and more recent trials, though, reduced confidence in the efficacy of metformin for cardiovascular disease prevention. Outcomes are improved even in those with some degree of kidney disease, heart failure, or chronic liver disease.

ff Γ $\frac{5}{8}\frac{1}{3}\mathcal{N}\mathcal{L}\mathcal{N}^{\frac{5}{8}}-\mathcal{N}\mathcal{L}$ $\otimes \mathcal{V}\mathcal{T}\in\frac{3}{8}\frac{5}{8}\%00\in-\frac{5}{8}\mathcal{L}\mathcal{F}$ $\frac{7}{8}\mathcal{L}\mathcal{R}$ $\mathcal{N}^{\frac{2}{3}}\%1\mathcal{L}\mathcal{R}$ $\mathcal{H}\mathcal{T}\mathcal{R}\frac{17}{8}\frac{5}{8}\mathcal{L}\mathcal{F}\mathcal{F}\in1-\frac{1}{3}\%00$
 $\frac{1}{3}\mathcal{L}\mathcal{F}\mathcal{F}\frac{11}{8}\in\frac{1}{3}\mathcal{N}\mathcal{L}\in1-\mathcal{L}\mathcal{F}\mathcal{L}$ $\in-\frac{1}{8}\%00\mathcal{V}\mathcal{T}\frac{3}{8}\in-\otimes$ $\mathcal{N}\mathcal{L}^{\frac{5}{8}}$, $\mathcal{V}\mathcal{T}\mathcal{R}\frac{1}{\mathcal{H}\mathcal{T}}\frac{5}{8}\frac{1}{3}-$ “ $\mathcal{L}\mathcal{F}\mathcal{F}\frac{11}{8}\in\frac{1}{3}\mathcal{N}\mathcal{L}\in1-$ $\frac{7}{8}\mathcal{L}\mathcal{R}$
 $\mathcal{N}\mathcal{L}^{\frac{5}{8}}$ $-\mathcal{N}\mathcal{L}\mathcal{V}\mathcal{T}\frac{3}{8}\mathcal{R}\mathcal{S}$ $\frac{17}{8}$ $\langle\in\frac{1}{3}\frac{2}{3}\frac{5}{8}\mathcal{N}\mathcal{L}\frac{5}{8}\mathcal{L}\mathcal{F}\mathcal{L}$ $\mathcal{N}\mathcal{L}^{\frac{5}{8}}$, $\mathcal{V}\mathcal{T}\mathcal{R}\frac{1}{\mathcal{H}\mathcal{T}}\frac{5}{8}\frac{1}{3}-$ $-\frac{1}{8}\in\frac{5}{8}\mathcal{N}\mathcal{L}\mathcal{R}\mathcal{S}$ $\frac{7}{8}\mathcal{L}\mathcal{R}$
 $-\frac{1}{3}\mathcal{L}\mathcal{R}\frac{3}{8}\in1\%001\otimes\mathcal{R}\mathcal{S}\mathcal{L}$ $\frac{1}{3}-\frac{3}{8}$ $\mathcal{N}\mathcal{L}^{\frac{5}{8}}$ “ $\mathcal{N}^{\frac{2}{5}}\mathcal{L}\mathcal{R}\in\frac{1}{8}\frac{1}{3}-$ $\langle\in\frac{1}{3}\frac{2}{3}\frac{5}{8}\mathcal{N}\mathcal{L}\frac{5}{8}\mathcal{L}\mathcal{F}$ “ $\mathcal{L}\mathcal{F}\mathcal{F}\frac{11}{8}\in\frac{1}{3}\mathcal{N}\mathcal{L}\in1-\mathcal{L}$ $-\frac{1}{\mathcal{W}}$
 $\frac{3}{8}\frac{5}{8}\mathcal{L}\mathcal{F}\frac{1}{8}\mathcal{L}\mathcal{R}\in\frac{2}{3}\frac{5}{8}$ $\frac{5}{8}\otimes\in\frac{3}{8}\frac{5}{8}-\frac{1}{8}\frac{5}{8}$ $\frac{7}{8}\mathcal{L}\mathcal{R}$ $\mathcal{N}\mathcal{L}^{\frac{5}{8}}$ $\frac{1}{8}\frac{1}{3}\mathcal{L}\mathcal{R}\frac{3}{8}\in1\otimes\frac{1}{3}\mathcal{L}\mathcal{F}\frac{1}{8}\mathcal{V}\mathcal{T}\%00\frac{1}{3}\mathcal{L}\mathcal{R}$ $\frac{2}{3}\frac{5}{8}-\frac{5}{8}\frac{7}{8}\in\mathcal{N}\mathcal{L}\mathcal{F}$
 $\frac{17}{8}$ $\mathcal{N}^{\frac{2}{5}}\mathcal{N}\mathcal{L}\frac{7}{8}\mathcal{L}\mathcal{R}\mathcal{N}^{\frac{2}{5}}\in-$ $\frac{1}{3}\mathcal{L}\mathcal{F}$ $\frac{5}{8}\mathcal{F}\mathcal{V}\mathcal{T}\in\otimes\frac{11}{8}\frac{1}{3}\%00\mathcal{P}\mathcal{t}$

$\dagger-$ $\frac{1}{2}\mathcal{L}^{\frac{2}{5}}\mathcal{L}$ $\mathcal{N}\mathcal{L}^{\frac{5}{8}}$ “ $\mathcal{N}^{\frac{2}{5}}\mathcal{L}\mathcal{R}\in\frac{1}{8}\frac{1}{3}-$ $-\frac{1}{10}\%00\%00\frac{5}{8}\otimes\frac{5}{8}$ $\frac{17}{8}$ $\blacksquare\otimes\mathcal{R}\mathcal{S}\mathcal{L}\mathcal{F}\in\frac{1}{8}\in\frac{1}{3}-\mathcal{L}\mathcal{F}\mathcal{S}\mathcal{L}\mathcal{F}$
 $\otimes \mathcal{V}\mathcal{T}\in\frac{3}{8}\frac{5}{8}\%00\in-\frac{5}{8}\mathcal{L}\mathcal{F}$ $\mathcal{W}^{\frac{5}{8}}\mathcal{L}\mathcal{R}\frac{5}{8}$ $\mathcal{V}\mathcal{H}\mathcal{T}\frac{3}{8}\frac{1}{3}\mathcal{N}\mathcal{L}\frac{5}{8}\frac{3}{8}$ $\mathcal{N}\mathcal{L}^1$ $\mathcal{L}\mathcal{R}\frac{5}{8}\frac{1}{8}\mathcal{L}^1\otimes-\in\mathcal{M}\mathcal{D}\frac{5}{8}$ $\mathcal{N}^{\frac{2}{5}}\mathcal{N}\mathcal{L}\frac{7}{8}\mathcal{L}\mathcal{R}\mathcal{N}^{\frac{2}{5}}\in-$ $\frac{1}{3}\mathcal{L}\mathcal{F}$
 $\mathcal{N}\mathcal{L}^{\frac{5}{8}}$ $\frac{7}{8}\in\mathcal{L}\mathcal{R}\mathcal{L}\mathcal{F}\mathcal{N}\mathcal{L}\%00\in-\frac{5}{8}$ $\mathcal{N}\mathcal{L}\mathcal{R}\frac{5}{8}\frac{1}{3}\mathcal{N}\mathcal{L}\mathcal{N}^{\frac{2}{5}}-\mathcal{N}\mathcal{L}$ $\frac{7}{8}\mathcal{L}\mathcal{R}$ $\mathcal{N}\mathcal{L}\mathcal{R}\mathcal{S}\mathcal{H}\mathcal{T}\frac{5}{8}$ $\frac{1}{2}$ $\frac{3}{8}\in\frac{1}{3}\frac{2}{3}\frac{5}{8}\mathcal{N}\mathcal{L}\frac{5}{8}\mathcal{L}\mathcal{F}\mathcal{P}\mathcal{t}$
 $\mathcal{F}\mathcal{F}^{\frac{5}{8}}\mathcal{L}\mathcal{F}\frac{5}{8}$ $\otimes \mathcal{V}\mathcal{T}\in\frac{3}{8}\frac{5}{8}\%00\in-\frac{5}{8}\mathcal{L}\mathcal{F}$ $\mathcal{L}\mathcal{F}\mathcal{H}\mathcal{T}\frac{5}{8}\mathcal{L}\mathcal{R}\mathcal{F}\frac{5}{8}\frac{3}{8}\frac{5}{8}$ $\frac{5}{8}\frac{1}{3}\mathcal{L}\mathcal{R}\%00\in\frac{5}{8}\mathcal{L}\mathcal{R}$ $\mathcal{L}\mathcal{R}\frac{5}{8}\otimes\in\frac{5}{8}\mathcal{W}\mathcal{L}\mathcal{F}\mathcal{P}\mathcal{t}$ $\bigcirc\mathcal{L}\mathcal{R}$
 $\frac{5}{8}\mathcal{N}^1\mathcal{N}\mathcal{N}^{\mathcal{H}\mathcal{T}}\%00\frac{5}{8}\mathcal{L}$ $\frac{1}{3}$ $\frac{1}{2}\mathcal{L}^{\frac{2}{5}}\mathcal{L}$ $\mathcal{L}\mathcal{R}\frac{5}{8}\otimes\in\frac{5}{8}\mathcal{W}$ $\frac{7}{8}\mathcal{V}\mathcal{T}-\frac{3}{8}$ $\mathcal{N}\mathcal{L}\frac{5}{8}-\mathcal{N}\mathcal{L}\frac{1}{3}\mathcal{N}\mathcal{L}\in\otimes\frac{5}{8}$ $\frac{5}{8}\otimes\in\frac{3}{8}\frac{5}{8}-\frac{1}{8}\frac{5}{8}$
 $\mathcal{N}\mathcal{L}\bigcirc\frac{1}{3}\mathcal{N}\mathcal{L}$ $\mathcal{H}\mathcal{T}\frac{5}{8}\mathcal{H}\mathcal{T}\%00\frac{5}{8}$ $\mathcal{N}\mathcal{L}\mathcal{R}\frac{5}{8}\frac{1}{3}\mathcal{N}\mathcal{L}\frac{5}{8}\frac{3}{8}$ $\mathcal{W}\in\mathcal{N}\mathcal{L}\bigcirc$ $\mathcal{L}\mathcal{F}\mathcal{V}\mathcal{T}\%00\frac{7}{8}\mathcal{L}-\mathcal{R}\mathcal{S}\%00\mathcal{V}\mathcal{T}\mathcal{R}\frac{5}{8}\frac{1}{3}\mathcal{L}\mathcal{F}$ $\bigcirc\frac{1}{3}\frac{3}{8}$ $\frac{1}{3}$ $\bigcirc\in\otimes\frac{5}{8}\mathcal{L}\mathcal{R}$
 $\mathcal{L}\mathcal{R}\in\mathcal{L}\mathcal{F}\%00$ $\frac{17}{8}$ $\mathcal{L}\mathcal{F}\frac{5}{8}\otimes\frac{5}{8}\mathcal{L}\mathcal{R}\frac{5}{8}$ $\%001\mathcal{W}$ $\frac{2}{3}\%00\frac{11}{3}\frac{8}$ $\mathcal{L}\mathcal{F}\mathcal{V}\mathcal{T}\bigcirc\frac{1}{3}\mathcal{L}\mathcal{R}$ $\frac{5}{8}\otimes\frac{5}{8}-\mathcal{N}\mathcal{L}\mathcal{F}$ $\mathcal{N}\mathcal{L}\bigcirc\mathcal{V}\mathcal{T}\otimes$ $\mathcal{N}\mathcal{L}^{\frac{5}{8}}\in\mathcal{L}\mathcal{R}$
 $\mathcal{L}\mathcal{R}\in\mathcal{L}\mathcal{F}\%00$ $\frac{17}{8}$ $-\frac{1}{7}\frac{8}\frac{1}{3}\mathcal{N}\mathcal{L}\frac{1}{3}\%00$ $\frac{1}{8}\frac{1}{3}\mathcal{L}\mathcal{R}\frac{3}{8}\in1\otimes\frac{1}{3}\mathcal{L}\mathcal{F}\frac{1}{8}\mathcal{V}\mathcal{T}\%00\frac{1}{3}\mathcal{L}\mathcal{R}$ $\frac{5}{8}\otimes\frac{5}{8}-\mathcal{N}\mathcal{L}\mathcal{F}$ $\mathcal{W}\frac{1}{3}\mathcal{L}\mathcal{F}$ $\%001\mathcal{W}^{\frac{5}{8}}\mathcal{L}\mathcal{R}$
 $\mathcal{N}\mathcal{L}\bigcirc\frac{1}{3}-$ $\mathcal{N}\mathcal{L}^{\frac{5}{8}}$ $\mathcal{L}\mathcal{R}\in\mathcal{L}\mathcal{F}\%00$ $\frac{17}{8}$ $\mathcal{N}\mathcal{L}\bigcirc\mathcal{L}\mathcal{F}\frac{5}{8}$ $\mathcal{N}\mathcal{L}\mathcal{R}\frac{5}{8}\frac{1}{3}\mathcal{N}\mathcal{L}\frac{5}{8}\frac{3}{8}$ $\mathcal{W}\in\mathcal{N}\mathcal{L}\bigcirc$ $\mathcal{N}^{\frac{2}{5}}\mathcal{N}\mathcal{L}\frac{7}{8}\mathcal{L}\mathcal{R}\mathcal{N}^{\frac{2}{5}}\in-$ $\mathcal{P}\mathcal{t}$ $\mathcal{P}\mathcal{t}$
 $\bigcirc1\mathcal{N}\mathcal{L}$ $\frac{5}{8}-1\mathcal{V}\mathcal{T}\otimes$ $\frac{3}{8}\frac{1}{3}\mathcal{N}\mathcal{L}\frac{1}{3}$ $\mathcal{W}^{\frac{5}{8}}\mathcal{L}\mathcal{R}\frac{5}{8}$ $\frac{1}{3}\otimes\frac{1}{3}\in\%00\frac{1}{3}\frac{2}{3}\%00\frac{5}{8}$ $\frac{1}{3}\mathcal{N}\mathcal{L}$ $\mathcal{N}\mathcal{L}\bigcirc\frac{1}{3}\mathcal{N}\mathcal{L}$ $\mathcal{N}\mathcal{L}\in\mathcal{N}^{\frac{2}{5}}\mathcal{N}\mathcal{L}^1$
 $\frac{3}{8}\frac{5}{8}\mathcal{N}\mathcal{L}\frac{5}{8}\mathcal{L}\mathcal{R}\mathcal{N}^{\frac{2}{5}}\in-\frac{5}{8}$ $\mathcal{N}\mathcal{L}^{\frac{5}{8}}$ $\mathcal{L}\mathcal{R}\frac{5}{8}\%00\frac{1}{3}\mathcal{N}\mathcal{L}\in\otimes\frac{5}{8}$ $\mathcal{L}\mathcal{R}\in\mathcal{L}\mathcal{F}\%00$ $\frac{17}{8}$ $\frac{3}{8}\frac{5}{8}\frac{1}{3}\mathcal{N}\mathcal{L}\bigcirc$ $1\mathcal{L}\mathcal{R}$ $\frac{17}{8}$ $\frac{3}{8}\frac{5}{8}\frac{1}{3}\mathcal{N}\mathcal{L}\bigcirc$
 $\frac{7}{8}\mathcal{L}\mathcal{R}1\mathcal{N}^{\frac{2}{5}}$ $\otimes\frac{5}{8}\frac{1}{3}\mathcal{L}\mathcal{R}\mathcal{N}\mathcal{L}$ $\frac{3}{8}\in\mathcal{L}\mathcal{F}\frac{5}{8}\frac{1}{3}\mathcal{L}\mathcal{F}\frac{5}{8}\mathcal{P}\mathcal{t}$

ff $\frac{5}{8}$ $\mathcal{V}\mathcal{T}\mathcal{L}\mathcal{F}\frac{5}{8}$ $\frac{17}{8}$ $\mathcal{N}^{\frac{2}{5}}\mathcal{N}\mathcal{L}\frac{7}{8}\mathcal{L}\mathcal{R}\mathcal{N}^{\frac{2}{5}}\in-$ $\mathcal{L}\mathcal{R}\frac{5}{8}\frac{3}{8}\mathcal{V}\mathcal{T}\frac{1}{8}\frac{5}{8}\mathcal{L}\mathcal{F}$ $\frac{2}{3}\frac{13}{8}\mathcal{R}\mathcal{S}$ $\mathcal{W}^{\frac{5}{8}}\in\otimes\otimes\mathcal{N}\mathcal{L}$ $\in-$
 $\mathcal{H}\mathcal{T}\frac{5}{8}\mathcal{H}\mathcal{T}\%00\frac{5}{8}$ $\mathcal{W}\in\mathcal{N}\mathcal{L}\bigcirc$ $\mathcal{N}\mathcal{L}\mathcal{R}\mathcal{S}\mathcal{H}\mathcal{T}\frac{5}{8}$ $\frac{1}{2}$ $\frac{3}{8}\in\frac{1}{3}\frac{2}{3}\frac{5}{8}\mathcal{N}\mathcal{L}\frac{5}{8}\mathcal{L}\mathcal{F}$ $\mathcal{N}^{\frac{2}{5}}\mathcal{N}\mathcal{L}\%00\%00\in\mathcal{N}\mathcal{L}\mathcal{V}\mathcal{T}\mathcal{L}\mathcal{F}$ $\in-$ $\frac{1}{8}\mathcal{L}-\mathcal{N}\mathcal{L}\mathcal{R}\frac{1}{3}\mathcal{L}\mathcal{F}\mathcal{N}\mathcal{L}$
 $\mathcal{N}\mathcal{L}^1$ $\mathcal{L}\mathcal{F}\mathcal{V}\mathcal{T}\%00\frac{7}{8}\mathcal{L}-\mathcal{R}\mathcal{S}\%00\mathcal{V}\mathcal{T}\mathcal{R}\frac{5}{8}\frac{1}{3}\mathcal{L}\mathcal{F}\mathcal{L}$ $\mathcal{W}^{\frac{5}{8}}\in\frac{1}{8}\otimes$ $\frac{1}{3}\mathcal{L}\mathcal{R}\frac{5}{8}$ $\frac{1}{3}\mathcal{L}\mathcal{F}\mathcal{F}\frac{11}{8}\in\frac{1}{3}\mathcal{N}\mathcal{L}\frac{5}{8}\frac{3}{8}$ $\mathcal{W}\in\mathcal{N}\mathcal{L}\bigcirc$ $\mathcal{W}^{\frac{5}{8}}\in\otimes\otimes\mathcal{N}\mathcal{L}$
 $\bigcirc\frac{1}{3}\in-\mathcal{P}\mathcal{t}$ $-\frac{1}{\mathcal{N}^{\frac{2}{5}}\mathcal{N}\mathcal{L}}$ $\frac{5}{8}\otimes\in\frac{3}{8}\frac{5}{8}-\frac{1}{8}\frac{5}{8}$ $\mathcal{L}\mathcal{F}\bigcirc1\mathcal{W}\mathcal{L}\mathcal{F}$ $\mathcal{N}\mathcal{L}\bigcirc\frac{1}{3}\mathcal{N}\mathcal{L}$ $\mathcal{N}^{\frac{2}{5}}\mathcal{N}\mathcal{L}\frac{7}{8}\mathcal{L}\mathcal{R}\mathcal{N}^{\frac{2}{5}}\in-$ $\in\mathcal{L}\mathcal{F}$
 $\frac{1}{3}\mathcal{L}\mathcal{F}\mathcal{F}\frac{11}{8}\in\frac{1}{3}\mathcal{N}\mathcal{L}\frac{5}{8}\frac{3}{8}$ $\mathcal{W}\in\mathcal{N}\mathcal{L}\bigcirc$ $\mathcal{W}^{\frac{5}{8}}\in\otimes\otimes\mathcal{N}\mathcal{L}$ $\%001\mathcal{L}\mathcal{F}\mathcal{F}$ $\in-$ $\frac{12}{3}\frac{5}{8}\mathcal{L}\mathcal{F}\in\mathcal{N}\mathcal{L}\mathcal{R}\mathcal{S}$ $\in-$ $\mathcal{N}\mathcal{L}^{\frac{5}{8}}$
 $\frac{1}{3}\frac{2}{3}\mathcal{L}\mathcal{F}\frac{5}{8}-\frac{1}{8}\frac{5}{8}$ $\frac{17}{8}$ $\frac{3}{8}\in\frac{1}{3}\frac{2}{3}\frac{5}{8}\mathcal{N}\mathcal{L}\frac{5}{8}\mathcal{L}\mathcal{F}\mathcal{P}\mathcal{t}$ $\bullet\frac{5}{8}\mathcal{N}\mathcal{L}\frac{7}{8}\mathcal{L}\mathcal{R}\mathcal{N}^{\frac{2}{5}}\in-$ $\bigcirc\frac{1}{3}\mathcal{L}\mathcal{F}$ $\frac{1}{3}$ $\%001\mathcal{W}^{\frac{5}{8}}\mathcal{L}\mathcal{R}$ $\mathcal{L}\mathcal{R}\in\mathcal{L}\mathcal{F}\%00$ $\frac{17}{8}$
 $\bigcirc\mathcal{R}\mathcal{S}\mathcal{H}\mathcal{T}\frac{1}{\otimes}\%00\mathcal{R}\mathcal{S}\frac{1}{8}\frac{5}{8}\mathcal{N}^{\frac{2}{5}}\in\frac{1}{3}$ $\mathcal{N}\mathcal{L}\bigcirc\frac{1}{3}-$ $\mathcal{N}\mathcal{L}^{\frac{5}{8}}$ $\mathcal{L}\mathcal{F}\mathcal{V}\mathcal{T}\%00\frac{7}{8}\mathcal{L}-\mathcal{R}\mathcal{S}\%00\mathcal{V}\mathcal{T}\mathcal{R}\frac{5}{8}\frac{1}{3}\mathcal{L}\mathcal{F}\mathcal{L}$ $\frac{1}{3}\%00\mathcal{N}\mathcal{L}\bigcirc1\mathcal{V}\mathcal{T}\otimes$
 $\bigcirc\mathcal{R}\mathcal{S}\mathcal{H}\mathcal{T}\frac{1}{\otimes}\%00\mathcal{R}\mathcal{S}\frac{1}{8}\frac{5}{8}\mathcal{N}^{\frac{2}{5}}\in\frac{1}{3}$ $\bigcirc\frac{1}{3}\mathcal{L}\mathcal{F}$ $\mathcal{V}\mathcal{T}-\frac{1}{8}\mathcal{L}\mathcal{N}^{\frac{2}{5}}\mathcal{N}^{\frac{2}{5}}-\%00\mathcal{R}\mathcal{S}$ $\frac{11}{8}\frac{1}{8}\mathcal{V}\mathcal{T}\mathcal{L}\mathcal{R}\mathcal{R}\frac{5}{8}\frac{3}{8}$ $\frac{3}{8}\mathcal{V}\mathcal{T}\mathcal{L}\mathcal{R}\in-\otimes$ $\in-\mathcal{N}\mathcal{L}\frac{5}{8}-\mathcal{L}\mathcal{F}\frac{5}{8}$
 $\frac{5}{8}\mathcal{N}^{\frac{2}{5}}\mathcal{L}\mathcal{R}\frac{1}{8}\in\mathcal{L}\mathcal{F}\frac{5}{8}\mathcal{L}$ $\frac{1}{8}\frac{1}{3}\%001\mathcal{L}\mathcal{R}\in\frac{5}{8}$ $\frac{3}{8}\frac{5}{8}\frac{7}{8}\in\frac{1}{8}\in\mathcal{N}\mathcal{L}\mathcal{L}$ $1\mathcal{L}\mathcal{R}$ $\mathcal{W}^{\frac{5}{8}}\in-$ $\mathcal{V}\mathcal{T}\mathcal{L}\mathcal{F}\frac{5}{8}\frac{3}{8}$ $\mathcal{W}\in\mathcal{N}\mathcal{L}\bigcirc$ $1\mathcal{N}\mathcal{L}^{\frac{5}{8}}\mathcal{L}\mathcal{R}$
 $\frac{1}{3}\otimes\frac{5}{8}-\mathcal{N}\mathcal{L}\mathcal{F}$ $\mathcal{N}\mathcal{L}^1$ $\%001\mathcal{W}^{\frac{5}{8}}\mathcal{L}\mathcal{R}$ $\frac{2}{3}\%00\frac{11}{3}\frac{8}$ $\otimes\%00\mathcal{V}\mathcal{T}\frac{1}{8}\mathcal{L}\mathcal{F}\frac{5}{8}\mathcal{P}\mathcal{t}$ $\bullet\frac{5}{8}\mathcal{N}\mathcal{L}\frac{7}{8}\mathcal{L}\mathcal{R}\mathcal{N}^{\frac{2}{5}}\in-$ $\mathcal{N}^{\frac{2}{5}}\mathcal{N}\mathcal{L}\frac{5}{8}\mathcal{L}\mathcal{F}\mathcal{N}\mathcal{L}$
 $\mathcal{L}\mathcal{R}\frac{5}{8}\frac{3}{8}\mathcal{V}\mathcal{T}\frac{1}{8}\frac{5}{8}\mathcal{L}\mathcal{F}$ $\%001\mathcal{W}$ $\frac{3}{8}\frac{5}{8}-\mathcal{L}\mathcal{F}\in\mathcal{N}\mathcal{L}\mathcal{R}\mathcal{S}$ $\%00\in\mathcal{H}\mathcal{T}\mathcal{H}\mathcal{T}\mathcal{L}\mathcal{R}\mathcal{N}\mathcal{L}\frac{5}{8}\in-$ $\frac{1}{3}-\frac{3}{8}$ $\mathcal{N}\mathcal{L}\mathcal{R}\in\otimes\%00\mathcal{R}\mathcal{S}\frac{1}{8}\frac{5}{8}\mathcal{L}\mathcal{R}\in\frac{3}{8}\frac{5}{8}$
 $\%00\frac{5}{8}\otimes\frac{5}{8}\%00\mathcal{L}\mathcal{F}\mathcal{P}\mathcal{t}$

Polycystic Ovarian Syndrome

†- N_L⊙1_F5/8 W¹∈N_L⊙ H_T1⁰⁰Rs1/8Rs_LF_N∈1/8 1⊕1/3_F∈1/3- L_FRs-3/8_FR1N²⁵/8 j-■-¿₂
N_L5/8-N_L1/3N_L∈⊕5/8 5/8⊕∈3/85/8-1/85/8 L_F⊙1W_LF N_L⊙1/3N_L N²⁵/8N_L7/8_FRN²⁵∈- V_TL_F5/8
∈-1/8_FR5/81/3_F5/8_LF N_L⊙5/8 _FR1/3N_L5/8 17/8 %00∈⊕5/8 2/3∈_FRN_L⊙L_FP_t ff⊙∈L_F ∈-1/8%00V_T3/85/8_LF ∈-
N_L⊙1_F5/8 W¹⊙1 ⊙1/3⊕5/8 -1N_L 2/35/85/8- 1/32/3%005/8 N_L1 ⊙5/8N_L H_T_FR5/8⊙-1/3-N_L W¹∈N_L⊙
1/8%001N²⁵∈H_T⊙5/8-5/8P_t ●5/8N_L7/8_FRN²⁵∈- 3/815/8_LF -1N_L 1/3H_TH_T5/81/3_FR N_L1 1/8⊙1/3-⊙5/8 N_L⊙5/8
_FR∈L_F⊙ 17/8 N²⁵∈L_F1/81/3_FR_FR∈1/3⊙5/8 1/3 -V_TN²⁵2/35/8_FR 17/8 1N_L⊙5/8_FR 2/35/8-5/87/8∈N_LL_F ⊙1/3⊕5/8
1/3%00L_F1 2/35/85/8- 7/81V_T-3/8 2/31N_L⊙ 3/8V_T_FR∈-⊙ H_T_FR5/8⊙-1/3-1/8Rs 1/3-3/8 ∈-
-1-H_T_FR5/8⊙-1/3-N_L W¹1N²⁵/8- W¹∈N_L⊙ ■-■-P_t ‡- 1/3- V_TH_T3/81/3N_L5/83/8 -1/8⊙_FR1/3-5/8
j1/2^a1/2^a¿ _FR5/8⊕∈5/8W¹ 1- N²⁵/8N_L7/8_FRN²⁵∈- ⊕5/8_FR_LFV_TL_F H_T%001/31/85/82/31_F-1
N_L_FR5/81/3N_LN²⁵/8-N_L 2/35/87/81_FR5/8 1_FR 3/8V_T_FR∈-⊙ ‡fflO_f†-† ∈- W¹1N²⁵/8- W¹∈N_L⊙ ■-■-
-1 1/81-1/8%00V_TL_F∈⊕5/8 5/8⊕∈3/85/8-1/85/8 17/8 ∈N²⁵H_T_FR1⊕5/83/8 %00∈⊕5/8 2/3∈_FRN_L⊙ _FR1/3N_L5/8_LF
W¹1/3_LF 7/81V_T-3/8P_t ‡- %001-⊙ □-⊙†¥1/3⊙1-∈L_FN_L H_T_FR1N_L11/81%00L_F N_L⊙5/8_FR5/8 W¹1/3_LF
V_T-1/85/8_FRN_L1/3∈-N_LRs ∈- N_L⊙5/8 5/8⊕∈3/85/8-1/85/8 17/8 ∈N²⁵H_T_FR1⊕5/83/8 %00∈⊕5/8 2/3∈_FRN_L⊙
_FR1/3N_L5/8_LF 2/3V_TN_L N_L⊙5/8_FR5/8 1/81V_T%003/8 2/35/8 ∈-1/8_FR5/81/3_F5/8_LF ∈- 1/8%00∈-∈1/81/3%00
H_T_FR5/8⊙-1/3-1/8Rs _FR1/3N_L5/8P_t ‡- L_F⊙1_FRN_L □-⊙†¥1/3-N_L1/3⊙1-∈L_FN_L H_T_FR1N_L11/81%00L_F
N²⁵/8N_L7/8_FRN²⁵∈- N²⁵1/3Rs _FR5/83/8V_T1/85/8 %00∈⊕5/8 2/3∈_FRN_L⊙ _FR1/3N_L5/8_LF W¹∈N_L⊙
V_T-1/85/8_FRN_L1/3∈-N_LRs 1- ∈N_LL_F 5/87/87/85/81/8N_L 1- 1/8%00∈-∈1/81/3%00 H_T_FR5/8⊙-1/3-1/8Rs
_FR1/3N_L5/8P_t ●5/8N_L7/8_FRN²⁵∈- N²⁵1/3Rs _FR5/8_LFV_T%00N_L ∈- 1/3 _FR5/83/8V_T1/8N_L∈1- 17/8 ■†-
2/3V_TN_L 1/81V_T%003/8 1/81N²⁵/8 W¹∈N_L⊙ 1/3 ⊙_FR5/81/3N_L5/8_FR 7/8_FR5/8_FV_T5/8-1/8Rs 17/8 L_F∈3/85/8
5/87/87/85/81/8N_LL_FP_t ff⊙5/8_FR5/8 W¹1/3_LF V_T-1/85/8_FRN_L1/3∈-N_LRs 1/3_LF N_L1 N²⁵/8N_L7/8_FRN²⁵∈-S_LF
∈N²⁵H_T1/31/8N_L 1- N²⁵∈L_F1/81/3_FR_FR∈1/3⊙5/8P_t ff⊙5/8 5/8⊕∈3/85/8-1/85/8 3/815/8_LF -1N_L L_FV_TH_TH_T1_FRN_L
⊙5/8-5/8_FR1/3%00 V_TL_F5/8 3/8V_T_FR∈-⊙ H_T_FR5/8⊙-1/3-1/8Rs 7/81_FR ∈N²⁵H_T_FR1⊕∈-⊙ N²⁵1/3N_L5/8_FR-1/3%00
1/3-3/8 ∈-7/81/3-N_L 1V_TN_L1/81N²⁵/8_LF ∈- 12/35/8_LF5/8 W¹1N²⁵/8-P_t

ff⊙5/8 ffi SM_SL_F ⊙1/3N_L∈1-1/3%00 ‡-L_FN_L∈N_LV_TN_L5/8 7/81_FR ‡5/81/3%00N_L⊙ 1/3-3/8
-%00∈-∈1/81/3%00 N_L1/85/8%00%005/8-1/85/8 _FR5/81/81N²⁵/8-3/85/83/8 ∈- 1/2^{aa}¿ N_L⊙1/3N_L W¹1N²⁵/8-
W¹∈N_L⊙ ■-■- 1/3-3/8 1/3 2/313/8Rs N²⁵1/3_LF_LF ∈-3/85/8N_L 1/32/31⊕5/8 1/2² 2/35/8 ⊙∈⊕5/8-
N²⁵/8N_L7/8_FRN²⁵∈- 7/81_FR 1/3-1⊕V_T%001/3N_L∈1- 1/3-3/8 ∈-7/85/8_FRN_L∈%00∈N_LRs W¹⊙5/8- 1N_L⊙5/8_FR
N_L⊙5/8_FR1/3H_T∈5/8_LF 7/81/3∈%00 N_L1 H_T_FR13/8V_T1/85/8 _FR5/8_LFV_T%00N_LL_FP_t ffiSM 1/3-3/8
∈-N_L5/8_FR-1/3N_L∈1-1/3%00 1/8%00∈-∈1/81/3%00 H_T_FR1/31/8N_L∈1/85/8 ⊙V_T∈3/85/8%00∈-5/8_LF do not
recommend metformin as a first-line treatment or do not recommend it at all, except for

$$\langle 5/8 - L_F \in N_{LR_S}$$
CN(C)C(=N)NC(=N)N
$$\circ \nabla^{3/8} \in N^{5/8} L^{\infty} R^{0/000} \in N^{\circ} \in {}^{3/8} {}^{13/8} \in {}^{1/8} {}^{1/3} \Gamma_{R^{2/3}} - \in N^{\circ} \in {}^{1/8}$$
$${}^3_8\epsilon {}^1_3N^0\epsilon {}^3_8{}^5_8 \quad \textcircled{P}R_S{}^3_8\Gamma_R{}^{11}_8\textcircled{P}^0_{00}1\Gamma_R\epsilon {}^3_8{}^5_8$$
$$\frac{9}{5} \mathbb{Z} \oplus \frac{9}{8} \mathbb{Z} \oplus \mathbb{N}^{\oplus 5} \oplus \mathbb{N} \oplus \mathbb{R}^{\oplus 3} \oplus \frac{1}{3} \mathbb{Z} \oplus \frac{1}{5} \mathbb{Z} \oplus \mathbb{R}^{\oplus 3} \oplus \mathbb{R}^{\oplus 11} \oplus \mathbb{Q}^{\oplus 1} \oplus \mathbb{R}^{\oplus 3} \oplus \frac{1}{8} \mathbb{Z}$$
$$\circ \mathbb{L} \quad \circ \mathbb{Y}^{3/8} \in N^{5/8} \mathbb{L}^{\mathbb{P}} \mathbb{R} \mathbb{S}^{0/002/3} \in \mathbb{M}^{\mathbb{V}} \mathbb{T}^{1/3} - \mathbb{E}^{3/85/8} \quad \mathbb{P} \mathbb{R} \mathbb{S}^{3/8} \mathbb{L}^{\mathbb{R}}^{11/8} \mathbb{P}^{0/001} \mathbb{L}^{\mathbb{R}} \in \mathbb{E}^{3/85/8}$$
[illegible]

Product Detail

Specification:

Name	$\bullet \frac{5}{8} N \frac{7}{8} \frac{1}{8} R N^{\circ} \in - \dagger - R$
Appearance	$f i^{\circ} \in N \frac{5}{8} \frac{1}{8} R R S \frac{1}{8} N \frac{1}{3} \% \% \% \in - \frac{5}{8} \frac{1}{8} \frac{1}{8} \frac{3}{8} \frac{5}{8} R$
Cas No	$\alpha \alpha \alpha \frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{2}$
MF	$- \phi \dagger \frac{1}{2} - \% \% O_2$
Mol. mass	$\alpha n^2 P_t n \frac{1}{2} \phi^n$
Grade	$\bullet \frac{5}{8} \frac{3}{8} \in \frac{1}{8} \in - \frac{5}{8} \frac{1}{8} \frac{1}{8} \frac{3}{8} \frac{5}{8}$
Assay	$\alpha \alpha P_t^n_*$
Melting point	$\frac{1}{2} \frac{1}{2} \frac{1}{4} \frac{1}{2} \frac{1}{2} n^{\circ} -$
Boiling point	$\frac{1}{2} \frac{1}{2} \phi P_t^{\circ} - \frac{1}{3} N \frac{1}{8} \frac{1}{8} N^{\circ} N^{\circ} \dagger^{\circ}$
Usage	$\dagger R s \frac{1}{8} \frac{1}{8} \% \% R s \frac{1}{8} \frac{5}{8} N^{\circ} \in \frac{1}{8}$

Raw Material-Description

The main raw materials that are required.

1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

3/4" 1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

3/4" 1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

3/4" 1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

3/4" 1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

3/4" 1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

3/4" 1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

3/4" 1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

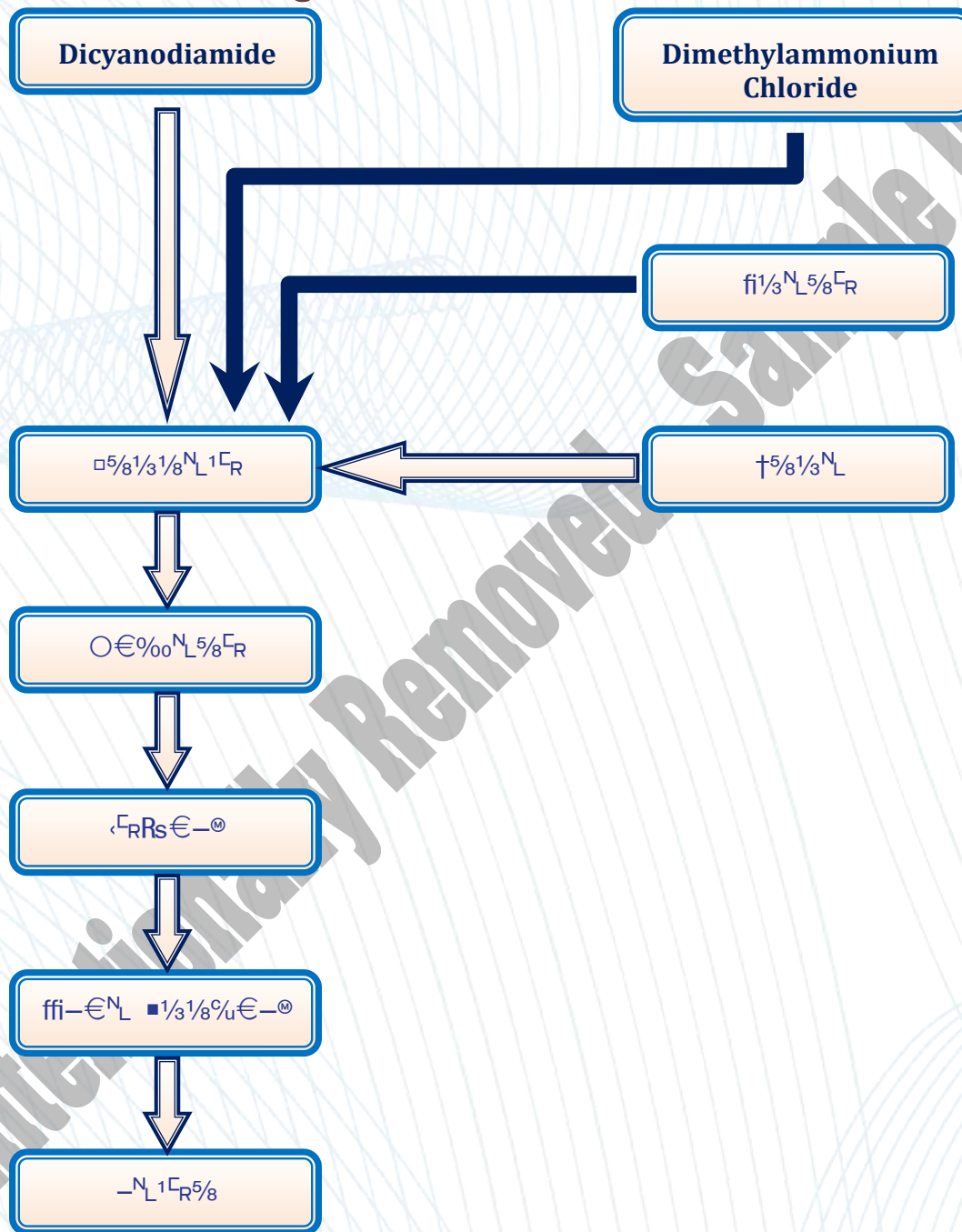
1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

3/4" 1/8" RS 1/3" - 3/8" 1/3" N 3/8" 5/8"

The manufacturing method of metformin is start with reaction with the charging dicyanodiamide, dimethylammonium

- $\dagger^{5/8} \frac{1}{3} N_L N_L^{5/8} C_R^{5/8} \frac{1}{3} \frac{1}{8} N_L^1 C_R N_L^1 \circledast^{20} - P_t \frac{7}{8} \frac{1}{3} C_R \frac{1}{4} \circledast^1 V_T C_R L F P_t$
- “ $L_F N_L^{5/8} C_R^{5/8} \frac{1}{3} \frac{1}{8} N_L \in 1 - H_T C_R^{11/8} \frac{5}{8} \frac{5}{8} \frac{3}{8} L F \mathbb{E} N^{25/8} N_L \frac{7}{8} \frac{1}{3} C_R N^{20} \in - \circledast R_S \frac{3}{8} C_R^{11/8} \circledast^{00} \frac{1}{3} C_R \in \frac{3}{8} \frac{5}{8} H_T C_R^{5/8} \frac{1}{8} \in H_T \in N_L \frac{1}{3} N_L^{5/8} L_F \frac{7}{8} C_R^{11} N^{20} N_L^{5/8} N^{20} \in N_L V_T C_R^{5/8} P_t f f^{25/8} C_R^{5/8} \frac{1}{3} \frac{1}{8} N_L^1 C_R \in L_F \frac{1}{8} \frac{110}{100} \frac{5}{8} \frac{3}{8} N_L^1 C_R^{11} N^{20} N_L^{5/8} N^{20} H_T^{5/8} C_R \frac{1}{3} N_L V_T C_R^{5/8} P_t$
- “ $\frac{3}{8} \frac{3}{8} \frac{3}{8} \frac{5}{8} N^{20} \in - \frac{5}{8} C_R \frac{1}{3} \frac{0}{100} \in M D^{5/8} \frac{3}{8} W \frac{1}{3} N_L^{5/8} C_R N_L^1 N_L^{5/8} C_R^{5/8} \frac{1}{3} \frac{1}{8} N_L^1 C_R \frac{1}{3} - \frac{3}{8} \frac{7}{8} \in \frac{0}{100} N_L^{5/8} C_R N_L^{5/8} C_R^{5/8} L_F V_T \frac{0}{100} N_L \in - \circledast L_F \frac{0}{100} V_T C_R C_R R_S \frac{1}{3} - \frac{3}{8} \frac{3}{8} C_R R_S N_L^{5/8} L_F \frac{10}{100} \in \frac{3}{8} N^{21/3} N_L^{5/8} C_R \in \frac{1}{3} \frac{0}{100} \frac{2}{3} R_S V_T L_F \in - \circledast L_F H_T C_R \frac{1}{3} R_S \frac{3}{8} C_R R_S \in - \circledast P_t$
- ● $\frac{5}{8} N_L \frac{7}{8} \frac{1}{3} C_R N^{20} \in - \dagger - \frac{0}{100} \in L_F \frac{12}{3} N_L \frac{1}{3} \in - \frac{5}{8} \frac{3}{8} \mathbb{E}$
- $f f \frac{1}{3} \frac{c}{u} \frac{5}{8} L_F \frac{1}{3} N^{20} H_T \frac{0}{100} \frac{5}{8} \frac{1}{3} - \frac{3}{8} L_F^{5/8} - N_L N_L^1 F_F V_T \frac{1}{3} \frac{0}{100} \in N_L R_S \frac{1}{8} \frac{1}{3} - N_L C_R \frac{10}{100} P_t$
- “ $\frac{7}{8} N_L^{5/8} C_R \frac{1}{3} H_T H_T C_R^{11} \oplus \frac{1}{3} \frac{0}{100} \frac{17}{8} L_F \frac{1}{3} N^{20} H_T \frac{0}{100} \frac{5}{8} P_t$
- $f f^{25/8} N^{21/3} N_L^{5/8} C_R \in \frac{1}{3} \frac{0}{100} \in L_F H_T \frac{1}{3} \frac{1}{8} \frac{c}{u} \frac{5}{8} \frac{3}{8} \in - \frac{2}{3} \frac{1}{3} N^{25/8} L_F$

Process Flow Diagram



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Personal Protective Equipment

Rs 5/8 f 7/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –

- 1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –
 1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –
 1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –
 1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –

- 1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –

Skin Protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.

1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –
 1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –
 1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –

1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –
 1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –
 1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –

Full Contact

1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –

1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –

1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –

1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –

(KCL 740/Aldrich Z677272, Size M)

1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –

1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –

1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –

1/3 7/8 5/8 N_L Rs 5/8 1/3 1/8 5/8 ■ C_R 1 N_L 5/8 1/8 N_L € 1 –

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Amoxicillin

Introduction

Amoxicillin is an antibiotic used to treat a number of bacterial infections. These include middle ear infection, strep throat, pneumonia, skin infections, and urinary tract infections among others. It is taken by mouth, or less commonly by injection.

Amoxicillin is a penicillin-type antibiotic. It kills bacteria by stopping them from making their cell walls. It is used to treat a number of bacterial infections, including middle ear infection, strep throat, pneumonia, skin infections, and urinary tract infections among others. It is taken by mouth, or less commonly by injection.

Medical Uses

Amoxicillin BP

Amoxicillin is used in the treatment of a number of infections, including acute otitis media, streptococcal pharyngitis, pneumonia, skin infections, urinary tract infections, Salmonella infections, Lyme disease, and chlamydia infections.

Acute Otitis Media

Amoxicillin is used in the treatment of acute otitis media, a common ear infection. It is also used to treat streptococcal pharyngitis, pneumonia, skin infections, urinary tract infections, Salmonella infections, Lyme disease, and chlamydia infections.

$\frac{1}{3}\frac{1}{8}\frac{1}{8}1N^{\circ}H_{1/3}-\in^{5/8}3/8$ $2/3Rs$ $5/8\frac{1}{3}C_R$ $3/8C_R\frac{1}{3}\in-1/3^{\circ}5/8Pt$ $\ddagger-$ $N_L^{\circ}5/8$ $H_{1/3}L_FN_L\Omega$
 $\frac{1}{3}N^{\circ}1N^{\circ}\in\frac{1}{8}\in\%00\%00\in-$ $W\frac{1}{3}L_F$ $3/8\frac{1}{3}F5/83/8$ $N_L^{\circ}C_R5/85/8$ $N_L\in N^{\circ}5/8L_F$ $3/8\frac{1}{3}\in\%00Rs$ $W^{\circ}5/8-$ $V_LF5/83/8$
 N_L1 $N_LC_R5/8\frac{1}{3}N_L$ $\frac{1}{3}\frac{1}{8}V_LN_L5/8$ $1N_L\in N_L\in L_F$ $N^{\circ}5/83/8\in\frac{1}{3}\Omega$ $W^{\circ}\in\frac{1}{8}^{\circ}$ $C_R5/8L_FV_L\%00N_L5/83/8$ $\in-$
 $N^{\circ}\in L_FL_F5/83/8$ $3/8\frac{1}{3}F5/8L_F$ $\in-$ $C_R1V_LN_L\in-5/8$ $\frac{1}{3}N^{\circ}2/3V_L\%00\frac{1}{3}N_L1C_RRs$ $H_T C_R\frac{1}{3}\frac{1}{8}N_L\in\frac{1}{8}5/8Pt$ $ff^{\circ}5/8C_R5/8$
 $\in L_F$ $-1W$ $5/8\oplus\in\frac{3}{8}5/8-1/85/8$ $N_L^{\circ}\frac{1}{3}N_L$ N_LW^1 $N_L\in N^{\circ}5/8L_F$ $3/8\frac{1}{3}\in\%00Rs$ $3/8\frac{1}{3}\in-^{\circ}$ $1C_R$ $1-1/85/8$
 $3/8\frac{1}{3}\in\%00Rs$ $3/8\frac{1}{3}\in-^{\circ}$ $^{\circ}\frac{1}{3}L_F$ $L_F\in N^{\circ}\in\%00\frac{1}{3}C_R$ $5/8\frac{7}{8}\frac{7}{8}5/8\frac{1}{8}N_L\in\oplus5/8-5/8L_FL_FPt$

Respiratory Infections

Amoxicillin and amoxicillin-clavulanate have been recommended by guidelines as the drug of choice for bacterial sinusitis and other respiratory infections. Most sinusitis infections are caused by viruses, for which amoxicillin and amoxicillin-clavulanate are ineffective,

$\frac{1}{3}-3/8$ $N_L^{\circ}5/8$ $L_FN^{\circ}1/3\%00\%00$ $2/35/8-5/87/8\in N_L$ $^{\circ}\frac{1}{3}\in-5/83/8$ $2/3Rs$
 $\frac{1}{3}N^{\circ}1N^{\circ}\in\frac{1}{8}\in\%00\%00\in-$ $N^{\circ}1/3Rs$ $2/35/8$ $1\oplus5/8C_R C_R\in\frac{3}{8}3/85/8-$ $2/3Rs$ $N_L^{\circ}5/8$ $\frac{1}{3}\frac{3}{8}\oplus5/8C_R L_F5/8$
 $5/8\frac{7}{8}\frac{7}{8}5/8\frac{1}{8}N_L L_FPt$ $"N^{\circ}1N^{\circ}\in\frac{1}{8}\in\%00\%00\in-$ $\in L_F$ $C_R5/8\frac{1}{8}1N^{\circ}N^{\circ}5/8-3/85/83/8$ $\frac{1}{3}L_F$ $N_L^{\circ}5/8$
 $H_T C_R5/8\frac{7}{8}5/8C_R C_R5/83/8$ $7/8\in C_R L_FN_L\%00\in-5/8$ $N_L C_R5/8\frac{1}{3}N_LN^{\circ}5/8-N_L$ $7/8\frac{1}{3}C_R$ $\frac{1}{8}1N^{\circ}N^{\circ}V_L-\in N_LRs\%$
 $\frac{1}{3}\frac{1}{8}F_VT\in C_R5/83/8$ $H_T-5/8V_LN^{\circ}1-\in\frac{1}{3}$ $\in-$ $\frac{1}{3}\frac{3}{8}V_L\%00N_L L_F$ $2/3Rs$ $N_L^{\circ}5/8$ $^{\circ}\frac{1}{3}N_L\in 1-\frac{1}{3}\%00$
 $\ddagger-L_FN_L\in N_LV_LN_L5/8$ $7/8\frac{1}{3}C_R$ $\ddagger5/8\frac{1}{3}\%00N_L^{\circ}$ $\frac{1}{3}-3/8$ $-1/3C_R5/8$ $\%1/85/8\%00\%005/8-1/85/8\Omega$ $5/8\in N_L^{\circ}5/8C_R$
 $\frac{1}{3}\%001-5/8$ $jN^{\circ}\in\%003/8$ N_L1 $N^{\circ}13/85/8C_R\frac{1}{3}N_L5/8$ $L_F5/8\oplus5/8C_R\in N_LRs$ $3/8\in L_F5/8\frac{1}{3}L_F5/8\ddagger$ $1C_R$ $\in-$
 $\frac{1}{8}1N^{\circ}2/3\in-1/3N_L\in 1-$ $W\in N_L^{\circ}$ $\frac{1}{3}$ $N^{\circ}1/3\frac{1}{8}C_R1\%00\in\frac{3}{8}5/8Pt$ $ff^{\circ}5/8$ $fi1C_R\%003/8$ $\ddagger5/8\frac{1}{3}\%00N_L^{\circ}$
 $\blacksquare C_R^{\circ}\frac{1}{3}-\in MD\frac{1}{3}N_L\in 1-$ $jfi\blacksquare\ddagger$ $C_R5/8\frac{1}{8}1N^{\circ}N^{\circ}5/8-3/8L_F$ $\frac{1}{3}N^{\circ}1N^{\circ}\in\frac{1}{8}\in\%00\%00\in-$ $\frac{1}{3}L_F$ $7/8\in C_R L_FN_L\%$
 $\%00\in-5/8$ $N_L C_R5/8\frac{1}{3}N_LN^{\circ}5/8-N_L$ $7/8\frac{1}{3}C_R$ $H_T-5/8V_LN^{\circ}1-\in\frac{1}{3}$ $N_L^{\circ}\frac{1}{3}N_L$ $\in L_F$ $-1N_L$ $^{\circ}L_F5/8\oplus5/8C_R5/8^{\circ}Pt$
 $"N^{\circ}1N^{\circ}\in\frac{1}{8}\in\%00\%00\in-$ $\in L_F$ $V_LF5/83/8$ $\in-$ $H_T1L_FN_L\%5/8N^{\circ}H_T1L_FV_LC_R5/8$ $\in-^{\circ}\frac{1}{3}\%00\frac{1}{3}N_L\in 1-$ $17/8$
 $\frac{1}{3}-N_L^{\circ}C_R\frac{1}{3}N_L$ N_L1 $H_T C_R5/8\oplus5/8-N_L$ $3/8\in L_F5/8\frac{1}{3}L_F5/8$ $H_T C_R1^{\circ}C_R5/8L_FL_F\in 1-$ $\frac{1}{3}-3/8$ $7/8\frac{1}{3}C_R$
 $H_T C_R1H_T^{\circ}Rs\%00\frac{1}{3}N_L\in L_FPt$

$\ddagger Pt$ $H_TRs\%001C_R\in$

$\ddagger N_L$ $\in L_F$ $5/8\frac{7}{8}\frac{7}{8}5/8\frac{1}{8}N_L\in\oplus5/8$ $\frac{1}{3}L_F$ $1-5/8$ $H_T\frac{1}{3}C_RN_L$ $17/8$ $\frac{1}{3}$ $N^{\circ}V_L\%00N_L\in\%3/8C_RV_L^{\circ}$
 $C_R5/8^{\circ}\in N^{\circ}5/8-$ $7/8\frac{1}{3}C_R$ $N_L C_R5/8\frac{1}{3}N_LN^{\circ}5/8-N_L$ $17/8$ $L_FN_L1N^{\circ}1/3\frac{1}{8}^{\circ}$ $\in-7/85/8\frac{1}{8}N_L\in 1-L_F$ $17/8$
 $\ddagger5/8\%00\in\frac{1}{8}\frac{12}{3}\frac{1}{3}\frac{1}{8}N_L5/8C_R$ $H_TRs\%001C_R\in Pt$ $\ddagger N_L$ $\in L_F$ $N_LRsH_T\in\frac{1}{8}\frac{1}{3}\%00\%00Rs$ $\frac{1}{8}1N^{\circ}2/3\in-5/83/8$
 $W\in N_L^{\circ}$ $\frac{1}{3}$ $H_T C_R1N_L1-\%H_TV_LN^{\circ}H_T$ $\in-^{\circ}\in\frac{2}{3}\in N_L1C_R$ $\ddagger L_FV_L\frac{1}{8}^{\circ}$ $\frac{1}{3}L_F$ $1N^{\circ}5/8H_T C_R\frac{1}{3}MD10\%005/8\ddagger$ $\frac{1}{3}-3/8$
 $\frac{1}{3}$ $N^{\circ}1/3\frac{1}{8}C_R1\%00\in\frac{3}{8}5/8$ $\frac{1}{3}-N_L\in\frac{2}{3}\in 1N_L\in\frac{1}{8}$ $\ddagger L_FV_L\frac{1}{8}^{\circ}$ $\frac{1}{3}L_F$ $\frac{1}{8}\%00\frac{1}{3}C_R\in N_L^{\circ}C_R1N^{\circ}Rs\frac{1}{8}\in-\ddagger^3$

infections in those without spleens, $L_F V_{T1/8} \odot \frac{1}{3} L_F H_{T5/8} H_{T0005/8} W \in N_L \odot L_F \in \frac{1}{8} \% \frac{0}{00} \frac{5}{8} \beta$
 $\frac{1}{8} \frac{5}{8} \% \frac{0}{00} \frac{0}{00} \frac{3}{8} \in L_F \frac{5}{8} \frac{1}{3} L_F \frac{5}{8} \Omega \frac{1}{3} - \frac{3}{8} \frac{7}{8} \frac{1}{8} C_R \frac{2}{3} \frac{1}{3} N_L \odot N_L \odot \frac{5}{8} H_{T5/8} \oplus \frac{5}{8} - N_L \in 1 - \frac{1}{3} - \frac{3}{8} N_L \odot \frac{5}{8}$
 $N_L C_R \frac{5}{8} \frac{1}{3} N_L N^{\frac{5}{8}} \frac{5}{8} - N_L \frac{17}{8} \frac{1}{3} - N_L \odot C_R \frac{1}{3} N_P \frac{ff}{05/8} \frac{ff}{i} SM C_R \frac{5}{8} \frac{1}{8} \frac{1}{8} N^{\frac{5}{8}} \frac{5}{8} - \frac{3}{8} L_F \frac{1}{3} \odot \frac{1}{3} \in - L_F N_L \in N_L L_F$
 $V_{T1/8} \frac{7}{8} \frac{1}{8} C_R \in - \frac{7}{8} \frac{5}{8} \frac{1}{8} N_L \in 1 V_{T1/8} \frac{5}{8} - \frac{3}{8} \frac{11}{8} \frac{1}{3} C_R \frac{3}{8} \in N_L \in L_F H_{T5/8} H_{T0005/8} N \in L_F P_i \frac{ff}{05/8} L_F \frac{5}{8}$
 $C_R \frac{5}{8} \frac{1}{8} \frac{1}{8} N^{\frac{5}{8}} \frac{5}{8} - \frac{3}{8} \frac{1}{3} N_L \in 1 - L_F \frac{3}{8} \frac{1}{3} - \frac{1}{3} N_L \frac{1}{3} H_{T5/8} \frac{1}{3} C_R N_L \frac{1}{3} \odot \frac{1}{3} \oplus \frac{5}{8} \frac{1}{8} \odot \frac{1}{3} - \odot \frac{5}{8} \frac{3}{8} N_L \odot \frac{5}{8}$
 $C_R \frac{1}{3} N_L \frac{5}{8} L_F \frac{17}{8} \in - \frac{7}{8} \frac{5}{8} \frac{1}{8} N_L \in 1 - \frac{7}{8} \frac{1}{8} C_R \in - \frac{7}{8} \frac{5}{8} \frac{1}{8} N_L \in 1 V_{T1/8} \frac{5}{8} - \frac{3}{8} \frac{11}{8} \frac{1}{3} C_R \frac{3}{8} \in N_L \in L_F P_i$

$-1 N^{\frac{5}{8}} \frac{3}{8} \in - \frac{1}{3} N_L \in 1 - \frac{ff}{05/8} \frac{1}{3} N_L N^{\frac{5}{8}} \frac{5}{8} - N_L$

" $N^{\frac{5}{8}} \frac{1}{8} \in \frac{1}{8} \in \% \frac{0}{00} \frac{0}{00} \in - \in L_F L_F V_{T1/8} \frac{1}{8} \frac{5}{8} H_{T5/8} N_L \in \frac{2}{3} \% \frac{0}{00} \frac{5}{8} N_L \frac{1}{3} \frac{3}{8} \frac{5}{8} \odot C_R \frac{1}{3} \frac{3}{8} \frac{1}{3} N_L \in 1 - \frac{2}{3} R_s \beta \beta$
 $\% \frac{0}{00} \frac{1}{3} \frac{1}{8} N_L \frac{1}{3} N^{\frac{5}{8}} \frac{1}{3} L_F \frac{5}{8} \beta H_{T5/8} V_{T1/8} \in - \odot \frac{2}{3} \frac{1}{3} \frac{1}{8} N_L \frac{5}{8} C_R \in \frac{1}{3} \Omega W \odot \in \frac{1}{8} \odot \frac{1}{3} C_R \frac{5}{8} C_R \frac{5}{8} L_F \in L_F N_L \frac{1}{3} - N_L$
 $N_L \frac{1}{3} N^{\frac{5}{8}} L_F N_L \beta \beta \% \frac{0}{00} \frac{1}{3} \frac{1}{8} N_L \frac{1}{3} N^{\frac{5}{8}} \frac{1}{3} - N_L \in \frac{2}{3} \in 1 N_L \in \frac{1}{8} L_F \Omega L_F V_{T1/8} \odot \frac{1}{3} L_F H_{T5/8} \in \frac{1}{8} \in \% \frac{0}{00} \frac{0}{00} \frac{0}{00} \in - P_i$
 $\odot \frac{1}{3} C_R N_L \odot \in L_F C_R \frac{5}{8} \frac{1}{3} L_F \frac{1}{3} - \Omega \in N_L N^{\frac{5}{8}} \frac{3}{8} R_s \frac{2}{3} \frac{5}{8} \frac{1}{8} \frac{1}{8} N^{\frac{5}{8}} \frac{3}{8} \in - \frac{5}{8} \frac{3}{8} W \in N_L \odot \frac{1}{8} \% \frac{0}{00} \frac{1}{3} \oplus V_{T0001/3} \in \frac{1}{8}$
 $\frac{1}{3} \frac{1}{8} \in \frac{3}{8} \Omega \frac{1}{3} \beta \beta \% \frac{0}{00} \frac{1}{3} \frac{1}{8} N_L \frac{1}{3} N^{\frac{5}{8}} \frac{1}{3} L_F \frac{5}{8} \in - \odot \in \frac{2}{3} \in N_L \frac{1}{3} C_R P_i \frac{ff}{05/8} \in L_F \frac{3}{8} C_R V_{T0001/3} \frac{1}{8} \frac{1}{8} N^{\frac{5}{8}} \frac{3}{8} \in - \frac{1}{3} N_L \in 1 -$
 $\in L_F \frac{1}{8} \frac{1}{8} N^{\frac{5}{8}} \frac{1}{8} - \% \frac{0}{00} R_s \frac{1}{8} \frac{1}{3} \% \frac{0}{00} \frac{0}{00} \frac{5}{8} \frac{3}{8} \frac{1}{8} \frac{1}{3} \frac{1}{3} N^{\frac{5}{8}} \frac{1}{8} \in \frac{1}{8} \% \frac{0}{00} \frac{1}{3} \oplus P_i$

$-H_{T5/8} \frac{1}{8} N_L C_R V_{T1/8} \frac{17}{8} \frac{1}{8} " \frac{1}{8} N_L \in \oplus \in N_L R_s$

$\pm N_L \in L_F \frac{1}{3} N^{\frac{5}{8}} \frac{13}{8} \frac{5}{8} C_R \frac{1}{3} N_L \frac{5}{8} \beta L_F H_{T5/8} \frac{1}{8} N_L C_R V_{T1/8} \frac{17}{8} \frac{2}{3} \frac{1}{3} \frac{1}{8} N_L \frac{5}{8} C_R \in \frac{1}{8} \% \frac{0}{00} R_s N_L \in \frac{1}{8} \Omega \beta \beta$
 $\% \frac{0}{00} \frac{1}{3} \frac{1}{8} N_L \frac{1}{3} N^{\frac{5}{8}} \frac{1}{3} - N_L \in \frac{2}{3} \in 1 N_L \in \frac{1}{8} \in - N_L \odot \frac{5}{8} \frac{1}{3} N^{\frac{5}{8}} \in - \frac{1}{8} \frac{5}{8} \in - \frac{1}{8} \in \% \frac{0}{00} \frac{0}{00} \frac{0}{00} \in - \frac{7}{8} \frac{1}{3} N^{\frac{5}{8}} \in \% \frac{0}{00} R_s$
 $V_{T1/8} \frac{5}{8} \frac{3}{8} N_L \frac{1}{3} N_L C_R \frac{5}{8} \frac{1}{3} N_L L_F V_{T1/8} \frac{1}{8} \frac{5}{8} H_{T5/8} N_L \in \frac{2}{3} \% \frac{0}{00} \frac{5}{8} \square C_R \frac{1}{3} N^{\frac{5}{8}} \beta H_{T1/8} \in N_L \in \oplus \frac{5}{8} \frac{1}{3} - \frac{3}{8} \square C_R \frac{1}{3} N^{\frac{5}{8}} \beta$
 $- \frac{5}{8} \odot \frac{1}{3} N_L \in \oplus \frac{5}{8} \frac{2}{3} \frac{1}{3} \frac{1}{8} N_L \frac{5}{8} C_R \in \frac{1}{3} P_i \pm N_L \in L_F V_{T1/8} V_{T1/3} \% \frac{0}{00} \frac{0}{00} R_s N_L \odot \frac{5}{8} \frac{3}{8} C_R V_{T0001/3} \frac{17}{8} \frac{1}{8} \odot \frac{1}{3} \in \frac{1}{8} \frac{5}{8}$
 $W \in N_L \odot \in - N_L \odot \frac{5}{8} \frac{1}{8} \% \frac{0}{00} \frac{1}{3} L_F L_F \frac{2}{3} \frac{5}{8} \frac{1}{8} \frac{1}{3} V_{T1/8} \frac{5}{8} \in N_L \in L_F \frac{2}{3} \frac{5}{8} N_L \frac{5}{8} C_R \beta \frac{1}{3} \frac{2}{3} \frac{1}{3} L_F C_R \frac{2}{3} \frac{5}{8} \frac{3}{8} \Omega$
 $\frac{7}{8} \frac{1}{8} \% \frac{0}{00} \frac{0}{00} \frac{1}{8} W \in - \odot \frac{1}{3} C_R \frac{1}{3} \% \frac{0}{00} \frac{1}{3} \frac{3}{8} N^{\frac{5}{8}} \in - \in L_F N_L C_R \frac{1}{3} N_L \in 1 - \Omega N_L \odot \frac{1}{3} - \frac{1}{3} N_L \odot \frac{5}{8} C_R \beta \beta \% \frac{0}{00} \frac{1}{3} \frac{1}{8} N_L \frac{1}{3} N^{\frac{5}{8}}$
 $\frac{1}{3} - N_L \in \frac{2}{3} \in 1 N_L \in \frac{1}{8} L_F P_i$

$\pm - \odot \frac{5}{8} - \frac{5}{8} C_R \frac{1}{3} \% \frac{0}{00} \Omega - N_L C_R \frac{5}{8} H_{T5/8} \frac{11}{8} \frac{11}{8} \frac{1}{8} V_{T1/8} \frac{17}{8} - \frac{1}{3} \frac{1}{8} \in \% \frac{0}{00} \frac{0}{00} V_{T1/8} L_F V_{T2/3} N_L \in \% \frac{0}{00} \in L_F \Omega$
 $\rightarrow - N_L \frac{5}{8} C_R \frac{11}{8} \frac{11}{8} \frac{1}{8} V_{T1/8} \frac{17}{8} \frac{1}{3} \frac{5}{8} N^{\frac{5}{8}} \frac{1}{8} H_{T0001/3} \in \% \frac{0}{00} V_{T1/8} \Omega \frac{5}{8} \% \frac{0}{00} \in \frac{1}{8} \frac{12}{3} \frac{1}{3} \frac{1}{8} N_L \frac{5}{8} C_R \Omega \frac{1}{3} - \frac{3}{8}$
 $\bullet \frac{1}{3} C_R \frac{1}{3} N^{\frac{5}{8}} \% \frac{0}{00} \frac{0}{00} \frac{1}{3} \frac{1}{3} C_R \frac{5}{8} L_F V_{T1/8} \frac{1}{8} \frac{5}{8} H_{T5/8} N_L \in \frac{2}{3} \% \frac{0}{00} \frac{5}{8} N_L \frac{1}{3} \frac{1}{3} N^{\frac{5}{8}} \frac{1}{8} \in \frac{1}{8} \in \% \frac{0}{00} \frac{0}{00} \frac{0}{00} \in - \Omega$
 $W \odot \frac{5}{8} C_R \frac{5}{8} \frac{1}{3} L_F \in - N_L C_R \frac{12}{3} \frac{1}{3} \frac{1}{8} N_L \frac{5}{8} C_R \Omega SM \frac{0}{00} \frac{5}{8} \frac{2}{3} L_F \in \frac{5}{8} \% \frac{0}{00} \frac{0}{00} \frac{1}{3} \frac{1}{3} - \frac{3}{8} \blacksquare L_F \frac{5}{8} V_{T3/8} \frac{1}{8} N^{\frac{5}{8}} \frac{1}{3} - \frac{1}{3} L_F$
 $\frac{1}{3} \frac{5}{8} C_R V_{T0001/3} \in - \frac{1}{3} L_F \frac{1}{3} \frac{1}{3} C_R \frac{5}{8} C_R \frac{5}{8} L_F \in L_F N_L \frac{1}{3} - N_L N_L \frac{1}{3} \in N_L P_i - \frac{1}{8} N^{\frac{5}{8}} \frac{5}{8} P_i \frac{1}{8} \% \frac{0}{00} \in \frac{1}{3} - \frac{3}{8} N^{\frac{5}{8}} L_F N_L$
 $\frac{1}{8} \% \frac{0}{00} \in - \in \frac{1}{8} \frac{1}{3} \% \frac{0}{00} L_F N_L C_R \frac{1}{3} \in - L_F \frac{17}{8} - N_L \frac{1}{3} H_{T0001/3} \frac{11}{8} \frac{11}{8} \frac{1}{8} V_{T1/8} \frac{17}{8} \frac{1}{3} V_{T5/8} V_{T1/8} \odot \frac{1}{3} \oplus \frac{5}{8}$
 $\frac{3}{8} \frac{5}{8} \oplus \frac{5}{8} \% \frac{0}{00} \frac{1}{8} \frac{5}{8} \frac{3}{8} C_R \frac{5}{8} L_F \in L_F N_L \frac{1}{3} - \frac{1}{8} \frac{5}{8} N_L \frac{1}{3} \frac{1}{3} N^{\frac{5}{8}} \frac{1}{8} \in \frac{1}{8} \in \% \frac{0}{00} \frac{0}{00} \frac{0}{00} \in - N_L \frac{1}{3} \oplus \frac{1}{3} C_R R_s \in - \odot$

Properties

Name : "Nº1 N€1/8€%000%00€—

CAS Number : 1414541-14-1

Purity : $\geq \alpha_{*}^{\odot}$

Molecular Weight : 600.04

Molecular Formula : $-\text{CH}_2\text{CH}_2\text{O}_{1/4}\text{C}_2\text{H}_{1/4}\text{C}_2\text{H}_{1/2}$

Appearance : $\mathbb{W}^{\oplus \in \mathbb{N}} \times \mathbb{L}^{5/8} \times \mathbb{R}^{\oplus \in \mathbb{N}} \times \mathbb{R}^{5/8} \times \mathbb{R}^{\oplus \in \mathbb{N}} \times \mathbb{W}$

$$\frac{1}{8}C_R R_S L_F N_{L1/3} 0/00 \in -5/8 \quad H_T 1/W^{3/8} 5/8 C_R \mathcal{E} \quad N_{L1/3} L_F N_{L5/8} L_F$$
$$s^0_{00} \in {}^{\mathbb{M}}\mathbb{P}^{\mathbb{N}} L^0_{00} R_s \quad \frac{2}{3} \in {}^{\mathbb{N}} L^{\frac{5}{8}} R_{\mathbb{L}} \quad \frac{1}{3} - \frac{3}{8} \quad \frac{3}{8} \in {}^{\mathbb{L}} F^{\frac{10}{00}} \oplus {}^{\mathbb{S}} \frac{5}{8} F \quad \in - \quad \cancel{W}^{\frac{1}{3}} L^{\frac{5}{8}} R$$

Raw Material

The main raw materials are:-

ρ_t n¥“■“

[illegible]
$$1/8^{\oplus 0/00} 1\Gamma_R \in 3/8^{5/8}$$
[illegible]

Properties

Chemical formula $\text{—}\oplus_{1/2}\text{O}_{1/2}\text{—}\ominus_{1/4}\text{—}$

Molar mass $1/2 \cdot m_{\text{Pt}} + 1/2 \cdot m_{\text{N}} \cdot 10^{-3} \text{ kg mol}^{-1}$

Appearance $\frac{1}{8}10_{00}1^{\vee}T^{\top}R^0_{00}5^{\frac{5}{8}}L^{\top}L^{\top}$

Melting point $200^{\circ}\text{C} - 210^{\circ}\text{C}$ (decolor)

Solubility in water Insoluble in water

39878-87-0

Physical State Solid

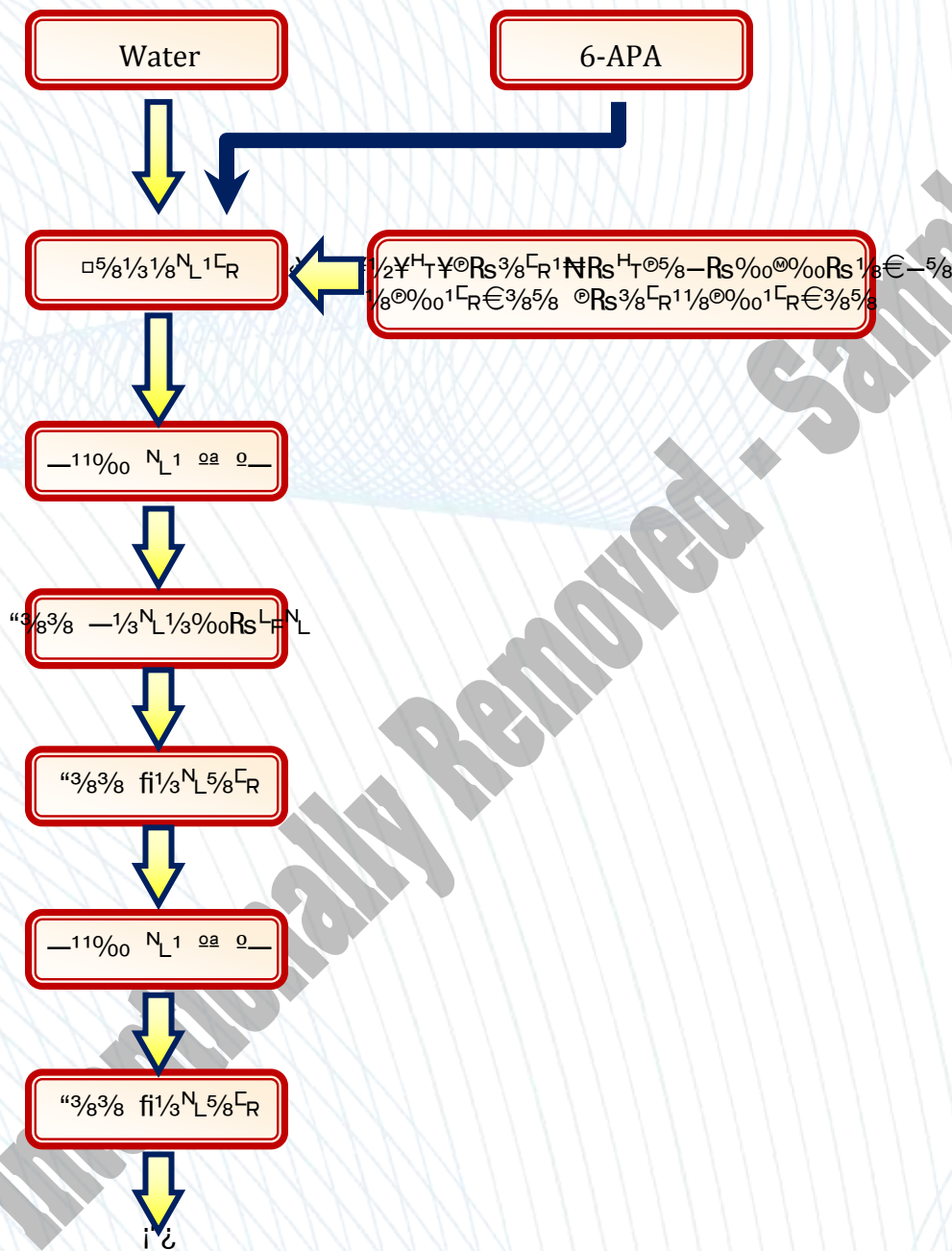
Appearance White to light yellow powder

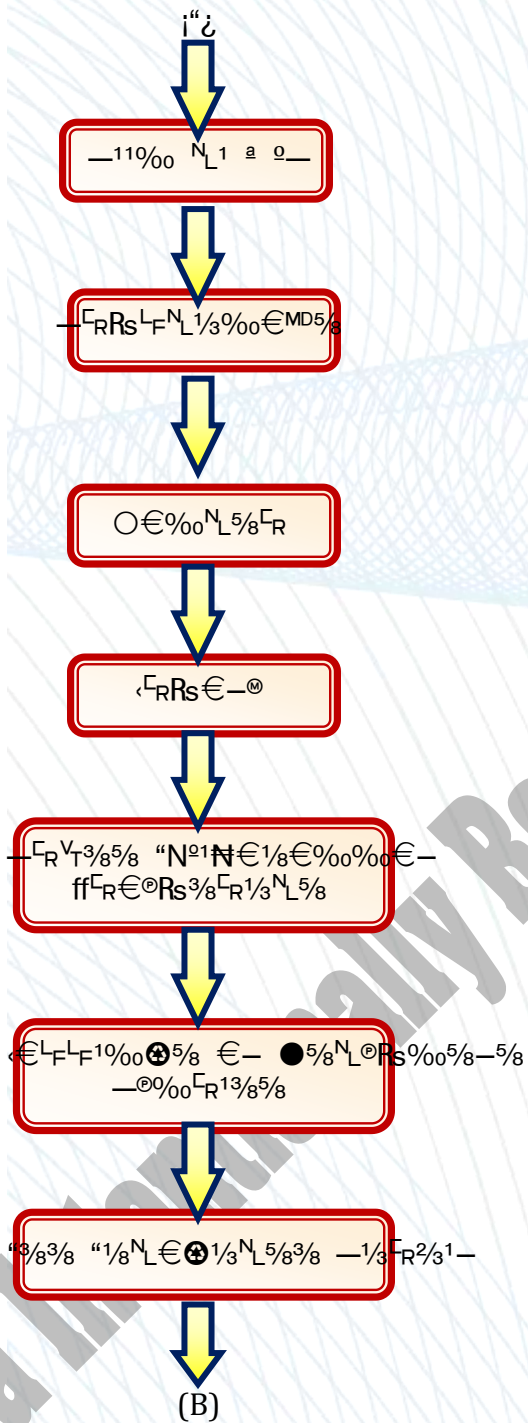
Melting Point/Range $200^{\circ}\text{C} - 210^{\circ}\text{C}$

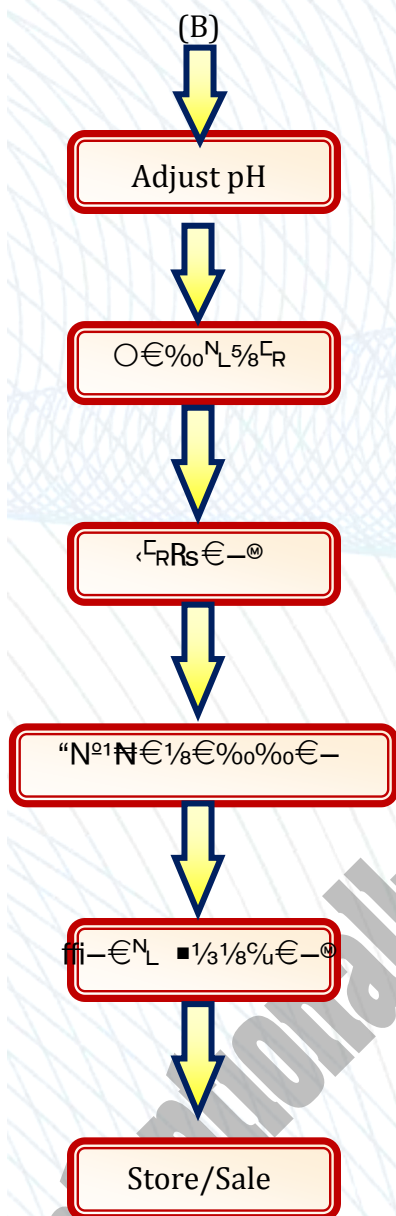
Manufacturing Process

- 1. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 2. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 3. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 4. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 5. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 6. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 7. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 8. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 9. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 10. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 11. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 12. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 13. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 14. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 15. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 16. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 17. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 18. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 19. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.
- 20. 10g of Na_2CO_3 is dissolved in 100ml of water in a beaker.

Process Flow Diagram







Ibuprofen

Introduction

Ibuprofen is a nonsteroidal anti-inflammatory drug (NSAID). It works by reducing hormones that cause inflammation and pain in the body.

Ibuprofen is a medication in the nonsteroidal anti-inflammatory drug (NSAID) class that is used for treating pain, fever, and inflammation. This includes painful menstrual periods, migraines, and rheumatoid arthritis. It may also be used to close a patent ductus arteriosus in a premature baby. It can be used by mouth or intravenously. It typically begins working within an hour.

Ibuprofen is used to reduce fever and treat pain or inflammation caused by many conditions such as headache, toothache, back pain, arthritis, menstrual cramps, or minor injury.

Properties

Chemical and Physical Data

Formula	$C_{13}H_{18}O_2$
Molar mass	206.27 g/mol
Chirality	(S)
Density	1.02 g/cm ³
Melting point	75.5 °C
Boiling point	261 °C
Solubility in water	Practically insoluble

Ibuprofen is practically insoluble in water, 2/3 V_TN_L 5/8 C_{RR}S 4/10 V_T2/3 0/0 5/8 €— N⁰¹L_FN_L 1 C_R0/3—€1/8 4/10 5/8—N_LL_F 0/0 €% 5/8 5/8 N_L0/3—10/0 jⁿⁿP_t00 0 f^{aaa}N_R 1/3 N_L 0— 7/8 1 C_R 0^a * 3 N_L1 2 2 N⁰⁵8 N_L0/3—10/0 1/3 1/8 5/8 N_L1—5/8 1/3—3/8 3/8 €1/8 0/0 1 C_R1 N⁰⁵8 N_L0/3—5/8 P_t

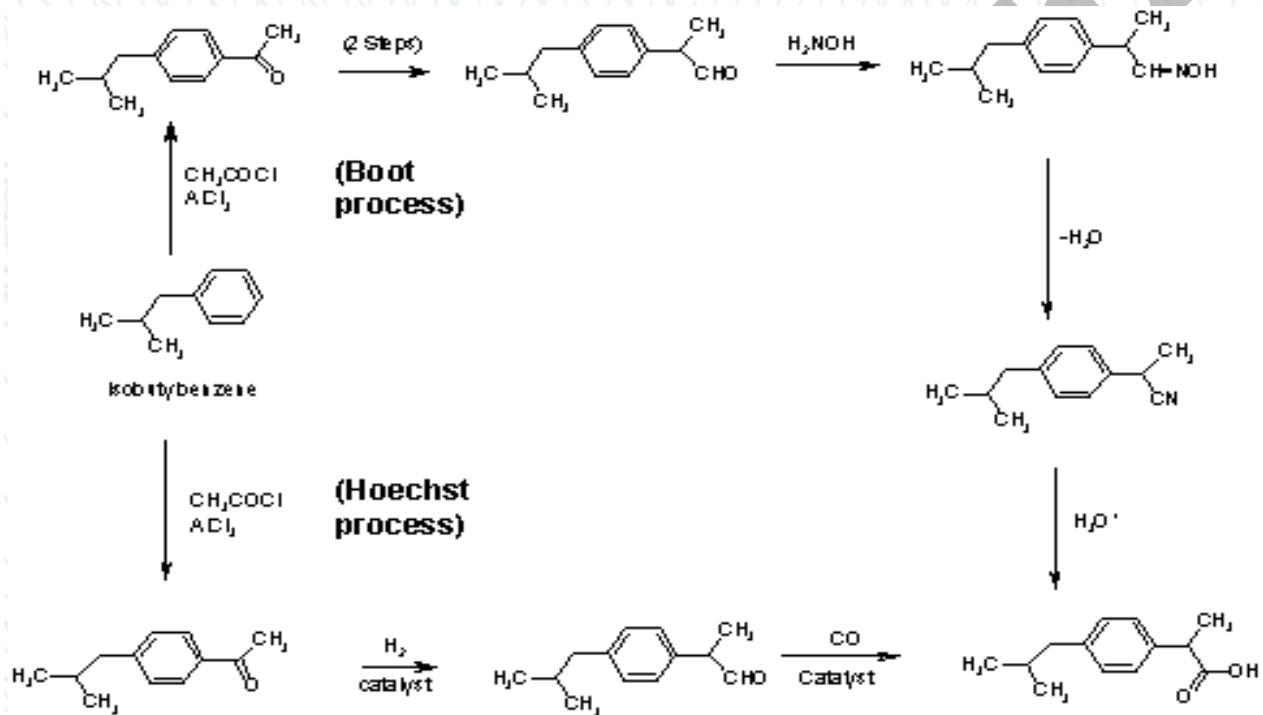
Melting point

— 001/2 0—

Boiling point

21/2 0—

Brief Description of Manufacturing Process of Ibuprofen



— 001/2 0—

21/2 0—

Description

Step-1

— 001/2 0—

$\forall \alpha \quad -P_t \quad N_L \in L_F \quad C_R 1 V_T N_L 5/8 \quad N_L 1 \quad \in 2/3 V_T H_T C_R 17/8 5/8 - \quad 2/3 5/8 \otimes \in - \quad W \in N_L \otimes \quad \in L_F 12/3 V_T N_L R_S \% \quad 2/3 5/8 - MD 5/8 - 5/8 \quad 1/3 - 3/8 \quad V_T L_F 5/8 \quad \circ C_R \in 5/8 3/8 5/8 \% \quad \forall - C_R 1/3 7/8 N_L L_F \quad 1/3 1/8 R_S \% \quad 1/3 N_L \in 1 - P_t$

$-N_L 5/8 H_T \forall 1/2$

- $\square 5/8 N^{\circ 1} \otimes 1/3 \% \quad 17/8 \quad C_R 5/8 1/3 1/8 N_L \in 1 - \quad W 1/3 N_L 5/8 C_R P_t$
- $ff \otimes 5/8 \quad C_R 5/8 1/3 1/8 N_L \in 1 - \quad L_F \otimes 1/3 \% \quad 2/3 5/8 \quad C_R 5/8 N^{\circ 1} \otimes 5/8 3/8 \quad 2/3 R_S \quad 3/8 \in L_F N_L \in \% \quad 1/3 N_L \in 1 - \quad W \in N_L \otimes \quad N_L \otimes 5/8 \quad \otimes 5/8 \% \quad H_T \quad 17/8 \quad N_L 1 \% \quad V_T 5/8 - 5/8 P_t$

$-N_L 5/8 H_T \forall 1/4$

$ff \otimes 5/8 \quad C_R 5/8 1/3 1/8 N_L \in 1 - \quad N^{\circ 1} 1/3 L_F L_F \quad V_T - 3/8 5/8 C_R \quad \otimes 1 \quad N_L 1 \quad N_L \otimes 5/8 \quad C_R 5/8 1/3 C_R C_R 1/3 - \otimes 5/8 N^{\circ 5} 5/8 - N_L \quad W \in N_L \otimes \quad N_L \otimes 5/8 \quad 1/3 3/8 3/8 \in N_L \in 1 - \quad 17/8 \quad \$ \in - 1/8 \quad 11/8 N_L 1/3 N_L 5/8 P_t$

$-N_L 5/8 H_T \forall \emptyset$

$ff \otimes 5/8 \quad C_R 5/8 1/3 1/8 N_L \in 1 - \quad N^{\circ 1} 1/3 L_F L_F \quad L_F \otimes 1/3 \% \quad 2/3 5/8 \quad L_F 5/8 H_T 1/3 C_R 1/3 N_L 5/8 3/8 \quad R 1/3 R_S 5/8 C_R \quad L_F 5/8 H_T 1/3 C_R 1/3 N_L \in 1 - P_t \quad fff L_F 5/8 \quad N_L \otimes 5/8 \quad 1 C_R \otimes 1/3 - \in 1/8 \quad \% \quad 1/3 R_S 5/8 C_R \quad 7/8 1 C_R \quad - 5/8 N_L \quad L_F N_L 5/8 H_T P_t$

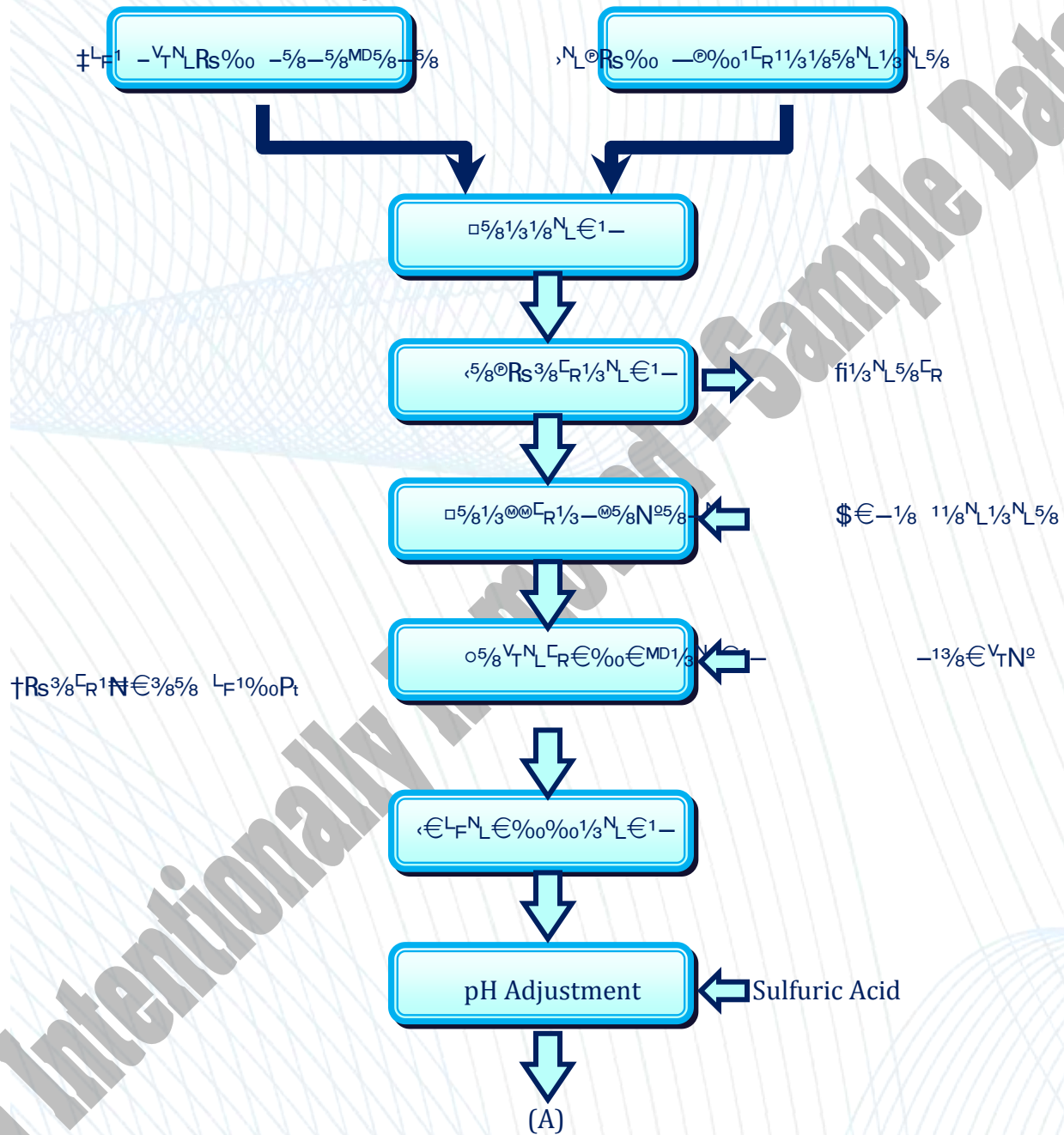
$-N_L 5/8 H_T \forall 2$

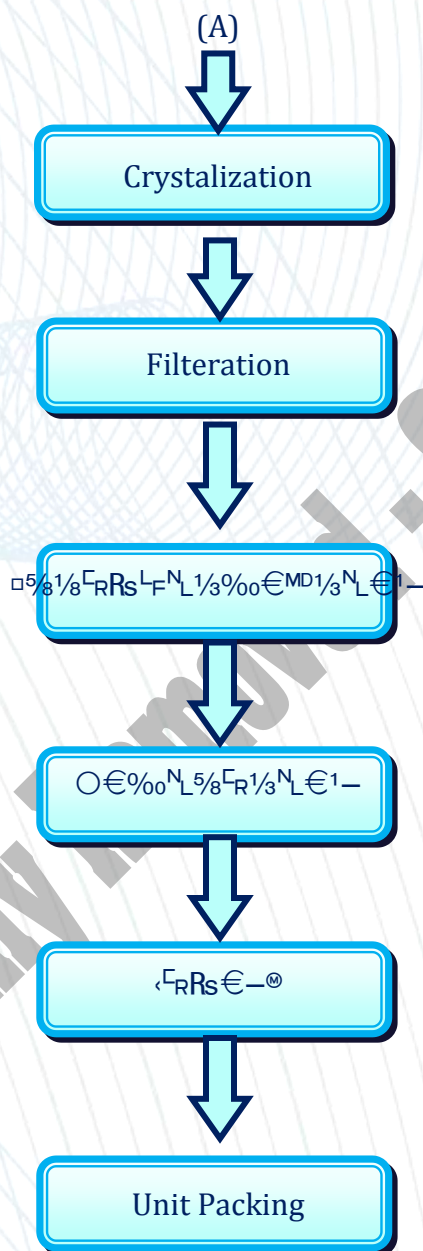
$\circ 5/8 V_T N_L C_R 1/3 \% \quad \in MD 1/3 N_L \in 1 - \quad W \in N_L \otimes \quad L_F 13/8 \in V_T N^{\circ} \quad \otimes R_S 3/8 C_R 1 N \in 3/8 5/8 P_t$

$-N_L 5/8 H_T \forall \eta$

- $\circ \in \% \quad N_L 5/8 C_R \quad N_L \otimes 5/8 \quad H_T C_R 5/8 1/8 \in H_T 1/3 N_L 5/8$
- $\in C_R R_S \quad V_T - 3/8 5/8 C_R \quad \otimes 1/3 1/8 V_T V_T N^{\circ} P_t$

Process Flow Diagram





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Paracetamol is used for reducing fever in people of all ages. The World Health Organization (WHO) recommends that paracetamol be used to treat fever in children only if their temperature is higher than 38.5 °C (101.3 °F). The efficacy of paracetamol by itself in children with fevers has been questioned and a meta-analysis showed that it is less effective than ibuprofen. Paracetamol does not have significant anti-inflammatory effects.

Medical Uses

Fever

Paracetamol is used for reducing fever in people of all ages. The World Health Organization (WHO) recommends that paracetamol be used to treat fever in children only if their temperature is higher than 38.5 °C (101.3 °F). The efficacy of paracetamol by itself in children with fevers has been questioned and a meta-analysis showed that it is less effective than ibuprofen. Paracetamol does not have significant anti-inflammatory effects.

Pain

Paracetamol is used for the relief of mild to moderate pain. The use of the intravenous form for short-term pain in people in the emergency department is supported by limited evidence. In adults it appears to be useful for migraines, tension headaches, perineal pain after childbirth, and kidney stone pain.

Paracetamol for Fever

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Paracetamol is used for the relief of mild to moderate pain. The use of the intravenous form for short-term pain in people in the emergency department is supported by limited evidence. In adults it appears to be useful for migraines, tension headaches, perineal pain after childbirth, and kidney stone pain.

$\frac{1}{3}-\frac{1}{3}\%00\%5/8\text{L}\in\frac{1}{8}\text{L}$ $\text{L}\text{V}\text{T}\frac{1}{8}\text{L}$ $\frac{1}{3}\text{L}$ $\text{N}\text{L}^{\text{O}5/8}$ $-1-\text{L}\text{N}\text{L}^5/8\text{R}\text{L}\in\frac{3}{8}\frac{1}{3}\%00$ $\frac{1}{3}-\text{N}\text{L}\in\text{Y}$
 $\in-\frac{7}{8}\%00\frac{1}{3}\text{N}^{\text{O}}\text{N}^{\text{O}}\frac{1}{3}\text{N}\text{L}^1\text{C}\text{R}\text{R}\text{S}$ $\frac{3}{8}\text{C}\text{R}\text{V}\text{T}^{\text{O}}\text{L}$ $\text{j}\text{O}-\text{L}\text{L}\text{L}\text{L}$ $\frac{1}{3}\text{L}\text{F}\text{H}\text{T}\in\text{C}\text{R}\in-\text{L}$ $\frac{1}{3}-\frac{3}{8}$ $\in\frac{2}{3}\text{V}\text{H}\text{T}\text{C}\text{R}\text{L}^7/8\frac{5}{8}-\text{L}$
 $\frac{2}{3}\text{V}\text{T}\text{N}\text{L}$ $\in\frac{2}{3}\text{V}\text{T}\text{H}\text{T}\text{C}\text{R}\text{L}^7/8\frac{5}{8}-$ $\frac{1}{3}-\frac{3}{8}$ $\text{H}\text{T}\frac{1}{3}\text{C}\text{R}\frac{1}{3}\frac{1}{8}\frac{5}{8}\text{N}\text{L}\frac{1}{3}\text{N}^{\text{O}}\%00$ $\text{O}\frac{1}{3}\text{L}^{\text{O}5/8}$ $\text{L}\in\text{N}^{\text{O}}\in\%00\frac{1}{3}\text{C}\text{R}$
 $\frac{5}{8}\frac{7}{8}\frac{7}{8}\frac{5}{8}\frac{1}{8}\text{N}\text{L}\text{L}\text{F}$ $\in-$ $\text{N}\text{L}^{\text{O}5/8}$ $\text{N}\text{L}\text{C}\text{R}^5/8\frac{1}{3}\text{N}\text{L}\text{N}^{\text{O}5/8}-\text{N}\text{L}$ $\frac{17}{8}$ $\text{O}5/8\frac{1}{3}\frac{3}{8}\frac{1}{3}\frac{1}{8}\text{O}5/8\text{P}\text{L}$ $\blacksquare\frac{1}{3}\text{C}\text{R}\frac{1}{3}\frac{1}{8}\frac{5}{8}\text{N}\text{L}\frac{1}{3}\text{N}^{\text{O}}\%00$
 $\frac{1}{8}\frac{1}{3}-$ $\text{C}\text{R}^5/8\%00\in\frac{5}{8}\text{L}^{\text{O}5/8}$ $\text{H}\text{T}\frac{1}{3}\in-$ $\in-$ $\text{N}^{\text{O}}\in\%00\frac{3}{8}$ $\frac{1}{3}\text{C}\text{R}\text{N}\text{L}^{\text{O}}\text{C}\text{R}\in\text{N}\text{L}\in\text{L}\text{F}\text{L}$ $\frac{2}{3}\text{V}\text{T}\text{N}\text{L}$ $\text{O}\frac{1}{3}\text{L}$ -1
 $\frac{5}{8}\frac{7}{8}\frac{7}{8}\frac{5}{8}\frac{1}{8}\text{N}\text{L}$ $1-$ $\text{N}\text{L}^{\text{O}5/8}$ $\text{V}\text{T}-\frac{3}{8}\frac{5}{8}\text{C}\text{R}^{\text{O}}\text{R}\text{S}\in-\text{O}$ $\in-\frac{7}{8}\%00\frac{1}{3}\text{N}^{\text{O}}\text{N}^{\text{O}}\frac{1}{3}\text{N}\text{L}\in1-\text{L}$ $\text{C}\text{R}^5/8\frac{3}{8}-\frac{5}{8}\text{L}\text{F}\text{L}\text{L}$ $\frac{1}{3}-\frac{3}{8}$
 $\text{L}\text{F}\text{W}^5/8\%00\%00\in-\text{O}$ $\frac{17}{8}$ $\text{N}\text{L}^{\text{O}5/8}$ $\%1\in-\text{N}\text{L}\text{P}\text{L}$

R¹W⁵/8C_R -1/31/8%

$-1/3\text{L}\text{F}^5/8\frac{3}{8}$ $1-$ $\frac{1}{3}$ $\text{L}\text{F}\text{R}\text{S}\text{L}\text{F}\text{N}\text{L}^5/8\text{N}^{\text{O}}\frac{1}{3}\text{N}\text{L}\in\frac{1}{8}$ $\text{C}\text{R}^5/8\text{L}^{\text{O}5/8}\text{W}\text{L}$ $\text{H}\text{T}\frac{1}{3}\text{C}\text{R}\frac{1}{3}\frac{1}{8}\frac{5}{8}\text{N}\text{L}\frac{1}{3}\text{N}^{\text{O}}\%00$ $\text{W}\frac{1}{3}\text{L}\text{F}$
 $\text{C}\text{R}^5/8\frac{1}{8}\frac{1}{8}\text{N}^{\text{O}}\text{N}^{\text{O}}\frac{5}{8}-\frac{3}{8}\frac{5}{8}\frac{3}{8}$ $\frac{2}{3}\text{R}\text{S}$ $\text{N}\text{L}^{\text{O}5/8}$ $\text{"N}^{\text{O}5/8}\text{C}\text{R}\in\frac{1}{8}\frac{1}{3}-$ $-1\%00\%00\frac{5}{8}\text{O}5/8$ $\frac{17}{8}$ $\blacksquare\text{R}\text{S}\text{L}\text{F}\in\frac{1}{8}\in\frac{1}{3}-\text{L}\text{F}$
 $\frac{1}{3}-\frac{3}{8}$ $\text{N}\text{L}^{\text{O}5/8}$ $\text{"N}^{\text{O}5/8}\text{C}\text{R}\in\frac{1}{8}\frac{1}{3}-$ $\blacksquare\frac{1}{3}\in-$ $-1/8\in\frac{5}{8}\text{N}\text{L}\text{R}\text{S}$ $\frac{1}{3}\text{L}$ $\frac{1}{3}$ $\frac{7}{8}\in\text{C}\text{R}\text{L}\text{F}\text{N}\text{L}\text{Y}\%00\in-\frac{5}{8}$
 $\text{N}\text{L}\text{C}\text{R}^5/8\frac{1}{3}\text{N}\text{L}\text{N}^{\text{O}5/8}-\text{N}\text{L}$ $\frac{7}{8}\frac{1}{8}\text{C}\text{R}$ $\%00\text{W}^5/8\text{C}\text{R}$ $\frac{2}{3}\frac{1}{3}\frac{1}{8}\%00$ $\text{H}\text{T}\frac{1}{3}\in-\text{P}\text{L}$ $\text{ff}\text{O}5/8$ $\text{"N}^{\text{O}5/8}\text{C}\text{R}\in\frac{1}{8}\frac{1}{3}-$ $-1\%00\%00\frac{5}{8}\text{O}5/8$
 $\frac{17}{8}$ $\blacksquare\text{R}\text{S}\text{L}\text{F}\in\frac{1}{8}\in\frac{1}{3}-\text{L}\text{F}\text{L}$ $\frac{1}{3}\text{L}$ $\frac{17}{8}$ $\frac{1}{2}\text{O}5/8$ $-1\text{N}\text{L}^5/8\frac{3}{8}$ $\frac{5}{8}\text{L}^{\text{O}5/8}\in\frac{3}{8}\frac{5}{8}-\frac{1}{8}\frac{5}{8}$ $\text{N}\text{L}\text{O}\frac{1}{3}\text{N}\text{L}$ $\in\text{N}\text{L}$ $\text{W}\frac{1}{3}\text{L}\text{F}$ -1
 $\frac{3}{8}\in\frac{7}{8}\frac{7}{8}\frac{5}{8}\text{C}\text{R}^5/8-\text{N}\text{L}$ $\text{N}\text{L}\text{O}\frac{1}{3}-$ $\text{H}\text{T}\%00\frac{1}{3}\frac{1}{8}\frac{5}{8}\frac{2}{3}\frac{1}{8}$ $\in-$ $\text{N}\text{L}^{\text{O}5/8}$ $\text{N}\text{L}\text{C}\text{R}^5/8\frac{1}{3}\text{N}\text{L}\text{N}^{\text{O}5/8}-\text{N}\text{L}$ $\frac{17}{8}$
 $-1-\text{C}\text{R}\frac{1}{3}\frac{3}{8}\in\frac{1}{8}\text{V}\text{T}\%00\frac{1}{3}\text{C}\text{R}$ $\%00\text{W}$ $\frac{2}{3}\frac{1}{3}\frac{1}{8}\%00$ $\text{H}\text{T}\frac{1}{3}\in-\text{P}\text{L}$ $\blacksquare\text{N}\text{L}^{\text{O}5/8}\text{C}\text{R}$ $\text{L}\text{F}\text{R}\text{S}\text{L}\text{F}\text{N}\text{L}^5/8\text{N}^{\text{O}}\frac{1}{3}\text{N}\text{L}\in\frac{1}{8}$
 $\text{C}\text{R}^5/8\text{L}^{\text{O}5/8}\text{W}\text{L}$ $\text{O}\frac{1}{3}\text{L}^{\text{O}5/8}$ $\frac{1}{3}\%00\text{L}\text{F}$ $\frac{1}{8}\frac{1}{8}-\frac{1}{8}\%00\text{V}\frac{3}{8}\frac{5}{8}\frac{3}{8}$ $\text{N}\text{L}\text{O}\frac{1}{3}\text{N}\text{L}$ $\frac{5}{8}\text{L}^{\text{O}5/8}\in\frac{3}{8}\frac{5}{8}-\frac{1}{8}\frac{5}{8}$ $\frac{7}{8}\frac{1}{8}\text{C}\text{R}$ $\in\text{N}\text{L}\text{L}\text{F}$
 $\frac{5}{8}\frac{7}{8}\frac{7}{8}\in\frac{1}{8}\frac{1}{3}\frac{1}{8}\text{R}\text{S}$ $\in\text{L}\text{F}$ $\%00\frac{1}{3}\frac{1}{8}\%00\in-\text{O}\text{P}\text{L}$

L⁵8/33/81/31/8O⁵/8L

$\text{" } \%1\in-\text{N}\text{L}$ $\text{L}\text{F}\text{N}\text{L}\frac{1}{3}\text{N}\text{L}^5/8\text{N}^{\text{O}5/8}-\text{N}\text{L}$ $\frac{17}{8}$ $\text{N}\text{L}^{\text{O}5/8}$ $\square\frac{5}{8}\text{C}\text{R}\text{N}^{\text{O}}\frac{1}{3}-\text{L}$ $\text{"V}\text{L}\text{F}\text{N}\text{L}\text{C}\text{R}\in\frac{1}{3}-\text{L}$ $\frac{1}{3}-\frac{3}{8}$
 $-\text{W}\in\text{L}\text{F}\text{L}\text{F}$ $\text{O}5/8\frac{1}{3}\frac{3}{8}\frac{1}{3}\frac{1}{8}\text{O}5/8$ $\text{L}\text{F}\frac{11}{8}\in\frac{5}{8}\text{N}\text{L}\in\frac{5}{8}\text{L}\text{F}$ $\frac{1}{3}-\frac{3}{8}$ $\text{N}\text{L}^{\text{O}5/8}$ $\square\frac{5}{8}\text{C}\text{R}\text{N}^{\text{O}}\frac{1}{3}-$ $-11/8\in\frac{5}{8}\text{N}\text{L}\text{R}\text{S}$ $\frac{17}{8}$
 $\text{O}5/8\text{V}\text{T}\text{C}\text{R}\text{L}^{\text{O}}\text{R}\text{S}$ $\text{C}\text{R}^5/8\frac{1}{8}\frac{1}{8}\text{N}^{\text{O}}\text{N}^{\text{O}}\frac{5}{8}-\frac{3}{8}\text{L}\text{F}$ $\text{N}\text{L}^{\text{O}5/8}$ $\text{V}\text{L}\text{F}^5/8$ $\frac{17}{8}$ $\text{H}\text{T}\frac{1}{3}\text{C}\text{R}\frac{1}{3}\frac{1}{8}\frac{5}{8}\text{N}\text{L}\frac{1}{3}\text{N}^{\text{O}}\%00$ $\in-$
 $\frac{1}{8}\frac{1}{8}\text{N}^{\text{O}}\frac{2}{3}\in-\frac{1}{3}\text{N}\text{L}\in1-$ $\text{W}\in\text{N}\text{L}^{\text{O}}$ $\frac{1}{8}\frac{1}{3}\frac{7}{8}\frac{7}{8}\frac{5}{8}\in-\frac{5}{8}$ $\frac{1}{3}\text{L}\text{F}$ $1-\frac{5}{8}$ $\frac{17}{8}$ $\text{L}\text{F}^5/8\text{L}^{\text{O}5/8}\text{C}\text{R}\frac{1}{3}\%00$ $\frac{7}{8}\in\text{C}\text{R}\text{L}\text{F}\text{N}\text{L}\text{Y}$
 $\%00\in-\frac{5}{8}$ $\text{N}\text{L}^{\text{O}5/8}\text{C}\text{R}\frac{1}{3}\text{H}\text{T}\in\frac{5}{8}\text{L}\text{F}$ $\frac{7}{8}\frac{1}{8}\text{C}\text{R}$ $\text{N}\text{L}\text{C}\text{R}^5/8\frac{1}{3}\text{N}\text{L}\text{N}^{\text{O}5/8}-\text{N}\text{L}$ $\frac{17}{8}$ $\text{N}\text{L}^5/8-\text{L}\text{F}\in1-$ $\frac{1}{3}-\frac{3}{8}$
 $\text{N}^{\text{O}}\in\text{O}\text{C}\text{R}\frac{1}{3}\in-\frac{5}{8}$ $\text{O}5/8\frac{1}{3}\frac{3}{8}\frac{1}{3}\frac{1}{8}\text{O}5/8\text{L}\text{F}\text{P}\text{L}$ L $\text{N}\text{L}^{\text{O}5/8}$ $\text{N}\text{L}\text{C}\text{R}^5/8\frac{1}{3}\text{N}\text{L}\text{N}^{\text{O}5/8}-\text{N}\text{L}$ $\frac{17}{8}$ $\frac{1}{3}\frac{1}{8}\text{V}\text{T}\text{N}\text{L}^5/8$
 $\text{N}^{\text{O}}\in\text{O}\text{C}\text{R}\frac{1}{3}\in-\frac{5}{8}\text{L}$ $\in\text{N}\text{L}$ $\in\text{L}\text{F}$ $\text{L}\text{F}\text{V}\text{T}\text{H}\text{T}^5/8\text{C}\text{R}\in1\text{C}\text{R}$ NL^1 $\text{H}\text{T}\%00\frac{1}{3}\frac{1}{8}\frac{5}{8}\frac{2}{3}\frac{1}{8}$ $\text{W}\in\text{N}\text{L}^{\text{O}}$ $\frac{1}{4}\text{L}$ $\frac{17}{8}$
 $\text{H}\text{T}^5/8\text{H}\text{T}\%00\frac{5}{8}$ $\frac{5}{8}\text{N}\text{H}\text{T}^5/8\text{C}\text{R}\in\frac{5}{8}-\frac{1}{8}\in-\text{O}$ $\text{H}\text{T}\frac{1}{3}\in-$ $\text{C}\text{R}^5/8\%00\in\frac{5}{8}\frac{7}{8}$ $\frac{1}{3}\text{N}\text{L}$ $1-\frac{5}{8}$ $\text{O}\frac{1}{3}\text{V}\text{T}\text{C}\text{R}$
 $\frac{1}{8}\frac{1}{8}\text{N}^{\text{O}}\text{H}\text{T}\frac{1}{3}\text{C}\text{R}^5/8\frac{3}{8}$ $\text{W}\in\text{N}\text{L}^{\text{O}}$ $\frac{1}{2}\text{L}$ $\in-$ $\text{N}\text{L}^{\text{O}5/8}$ $\frac{1}{8}\frac{1}{8}-\text{N}\text{L}\text{C}\text{R}\text{L}^{\text{O}}\text{O}$ $\text{O}\text{C}\text{R}\frac{1}{3}\text{V}\text{T}\text{H}\text{T}\text{P}\text{L}$

■ 1L_FN_L 1H_T5/8C_R1/3N_L€⊕5/8

■ 1/3C_R1/31/85/8N_L1/3N⁰¹⁰00 1/81N⁰²³€-5/83/8 W€N_L⊙ ○-“†,L_F N⁰¹³Rs 2/35/8 N⁰¹C_R5/8
5/87/87/85/81/8N_L€⊕5/8 7/81C_R N_LC_R5/81/3N_L€-⊙ H_T1L_FN_L 1H_T5/8C_R1/3N_L€⊕5/8 H_T1/3€- N_L⊙1/3-
5/8€N_L⊙5/8C_R H_T1/3C_R1/31/85/8N_L1/3N⁰¹⁰00 1C_R ○-“†,L_F 1/3001-5/8P_t

ff5/85/8N_L⊙

○-“†,L_F L_FV_T1/8⊙ 1/3L_F €2/3V_TH_TC_R17/85/8-£ -1/3H_TC_R1N⁵⁸-£ 1/3-3/8 3/8€1/80017/85/8-1/31/8
1/3C_R5/8 N⁰¹C_R5/8 5/87/87/85/81/8N_L€⊕5/8 N_L⊙1/3- H_T1/3C_R1/31/85/8N_L1/3N⁰¹⁰00 7/81C_R
1/81-N_LC_R100000€-⊙ 3/85/8-N_L1/300 H_T1/3€- 1C_R H_T1/3€- 1/3C_R€L_F€-⊙ 7/8C_R1N⁰ 3/85/8-N_L1/300
H_TC_R11/85/83/8V_TC_R5/8L_F³ 1/81N⁰²³€-1/3N_L€1-L_F 17/8 ○-“†,L_F 1/3-3/8 1/31/85/8N_L1/3N⁰€-1H_T⊙5/8-
1/3C_R5/8 N⁰¹C_R5/8 5/87/87/85/81/8N_L€⊕5/8 N_L⊙1/3- 5/8€N_L⊙5/8C_R 1/3001-5/8P_t ■ 1/3C_R1/31/85/8N_L1/3N⁰¹⁰00
€L_F H_T1/3C_RN_L€1/8V_T0001/3C_R00Rs V_TL_F5/87/8V_T00 W⊙5/8- ○-“†,L_F 1/3C_R5/8
1/81-N_LC_R1/3€-3/8€1/81/3N_L5/83/8 3/8V_T5/8 N_L1 ⊙RsH_T5/8C_RL_F5/8-L_F€N_L€⊕€N_LRs or history of
gastrointestinal ulceration or bleeding. It can also be used in combination with NSAIDs
when these are ineffective in controlling dental pain alone. The Cochrane review of
preoperative analgesics for additional pain relief in children and adolescents shows no
evidence of benefit in taking paracetamol before dental treatment to help reduce pain after
treatment for procedures under local anaesthetic, but the quality of evidence is low.

Combination Medications

The efficacy of paracetamol when used in combination with weak opioids (such as codeine) improved for about 50% of people, but with increases in the number experiencing side effects. Combination drugs of paracetamol and strong opioids such as morphine improve analgesic effect.

The combination of paracetamol with caffeine is superior to paracetamol alone for the treatment of common pain conditions, including dental pain, post partum pain, and headache.

Patent Ductus Arteriosus

Raw Material

$\mathbb{C}\Psi_0 \in \mathcal{N}_{\mathcal{C}_R^1 \mathcal{H}_T^{\otimes 5/8-10/00}} \quad \mathfrak{j}_{1/3/00} \mathcal{L}_F^1 \quad 1/8_{1/3/00/00/5/8/3/8} \quad \mathcal{H}_T \Psi_- \in \mathcal{N}_{\mathcal{C}_R^1 \mathcal{H}_T^{\otimes 5/8-10/00}} \quad 1_{\mathcal{C}_R} \quad \mathbb{C}\Psi$
 $\mathbb{C}\mathcal{R}_{S^3/8} \mathcal{C}_R^{11} \mathcal{N}\mathcal{R}_S \in \mathcal{N}_{\mathcal{C}_R^{12/3/5/8-\text{MD}5/8-5/8}} \quad \mathbb{C} \in \mathcal{F} \quad 1/3 \quad \mathcal{H}_T^{\otimes 5/8-10/00} \in 1/8 \quad 1/8 \mathcal{N}^{\mathfrak{a}} \mathcal{H}_T \mathcal{V}_T-3/8 \quad \mathcal{N}_{\mathbb{C}^1/3} \mathcal{N}_{\mathbb{C}^1/3} \mathcal{L}_F$
 $1/3 \quad \in \mathcal{N}_{\mathcal{C}_R^1} \quad \mathbb{C} \mathcal{C}_R^1 \mathcal{V}_T \mathcal{H}_T \quad 1/3 \mathcal{N}_{\mathcal{L}} \quad \mathcal{N}_{\mathcal{L}^{\otimes 5/8}} \quad 1 \mathcal{H}_T \mathcal{H}_T 1_{\mathcal{L}_F} \in \mathcal{N}_{\mathcal{L}^5/8} \quad \mathcal{H}_T 1_{\mathcal{L}_F} \in \mathcal{N}_{\mathcal{L}} \in 1- \quad 17/8 \quad \mathcal{N}_{\mathcal{L}^{\otimes 5/8}} \quad \mathbb{C}\mathcal{R}_{S^3/8} \mathcal{C}_R^{11} \mathcal{N}\mathcal{R}_S \%$
 $\mathbb{C} \mathcal{C}_R^1 \mathcal{V}_T \mathcal{H}_T \quad 1- \quad \mathcal{N}_{\mathcal{L}^{\otimes 5/8}} \quad 2/3_{5/8-\text{MD}5/8-5/8} \quad \mathcal{C}_R \in - \mathbb{C} \mathcal{P}_t \quad \mathbb{C}\Psi_0 \in \mathcal{N}_{\mathcal{C}_R^1 \mathcal{H}_T^{\otimes 5/8-10/00}} \quad \mathcal{L}_F \mathbb{C}^1 \mathcal{W} \mathcal{L}_F \quad \mathcal{N}_{\mathcal{W}^1}$
 $\mathcal{H}_T 10/00 \mathcal{R}_S \mathcal{N}^{\mathfrak{a}} \mathcal{C}_R \mathcal{H}_T \mathbb{C} \mathcal{L}_F \quad \in - \quad \mathcal{N}_{\mathcal{L}^{\otimes 5/8}} \quad 1/8 \mathcal{C}_R \mathcal{R}_S \mathcal{L}_F \mathcal{N}_{\mathcal{L}^1/3/00/00} \in -5/8 \quad \mathcal{L}_F \mathcal{N}_{\mathcal{L}^1/3} \mathcal{N}_{\mathcal{L}^5/8} \mathcal{P}_t \quad \text{ff}^{\otimes 5/8} \quad 1/3/00 \mathcal{H}_T \mathbb{C}^1/3 \Psi$
 $7/8^1 \mathcal{C}_R \mathcal{N}^{\mathfrak{a}} \quad \mathbb{C} \in \mathcal{F} \quad 1/8 10/00^1 \mathcal{C}_R \%$
 $00^5/8 \mathcal{L}_F \mathcal{L}_F \quad \mathcal{H}_T \in \%$
 $00/00/1/3 \mathcal{C}_R \mathcal{L}_F \mathcal{L} \quad \mathcal{V}_T - \mathcal{L}_F \mathcal{N}_{\mathcal{L}^1/3/2/3/00/5/8} \quad 1/3 \mathcal{N}_{\mathcal{L}} \quad \mathcal{C}_R 11 \mathcal{N}^{\mathfrak{a}}$
 $\mathcal{N}_{\mathcal{L}^5/8} \mathcal{N}^{\mathfrak{a}} \mathcal{H}_T 5/8 \mathcal{C}_R 1/3 \mathcal{N}_{\mathcal{L}} \mathcal{V}_T \mathcal{C}_R 5/8 \mathcal{L} \quad 1/3-3/8 \quad \mathcal{L}_F \mathcal{N}_{\mathcal{L}^1/3/2/3/00/5/8} \quad \mathcal{N}_{\mathcal{L}} 1 \mathcal{W} 1/3 \mathcal{C}_R 3/8 \quad \mathcal{L}_F \mathcal{V}_T - 0/00 \in \mathbb{C} \mathbb{C} \mathcal{N}_{\mathcal{L}} \mathcal{P}_t \quad \text{ff}^{\otimes 5/8} \quad 2/3/8 \mathcal{N}_{\mathcal{L}} 1 \Psi$

$\frac{7}{8}1\text{C}_R\text{N}^\circ$ $\in\text{L}_\text{F}$ $\text{Rs}\frac{5}{8}\%00\%001\text{W}$ $\text{H}_\text{T}\in\%00\%00\frac{1}{3}\text{C}_\text{R}\text{L}_\text{F}\text{E}$ $\text{L}_\text{F}\text{N}_\text{L}\frac{1}{3}\frac{2}{3}\%00\frac{5}{8}$ $\frac{1}{3}\text{N}_\text{L}$ $\text{C}_\text{R}11\text{N}^\circ$
 $\text{N}_\text{L}\frac{5}{8}\text{N}^\circ\text{H}_\text{T}\frac{5}{8}\text{C}_\text{R}\frac{1}{3}\text{N}_\text{L}\text{V}_\text{T}\text{C}_\text{R}\frac{5}{8}\text{E}$ $\frac{1}{3}-\frac{3}{8}$ $\otimes\text{C}_\text{R}\frac{1}{3}\frac{3}{8}\text{V}_\text{T}\frac{1}{3}\%00\%00\text{Rs}$ $\text{N}_\text{L}\text{V}_\text{T}\text{C}_\text{R}-\text{L}_\text{F}$ $\text{C}_\text{R}\frac{5}{8}\frac{3}{8}$ $\text{V}_\text{T}\text{H}_\text{T}1-$
 $\in\text{C}_\text{R}\text{C}_\text{R}\frac{1}{3}\frac{3}{8}\in\frac{1}{3}\text{N}_\text{L}\in1-$ $\frac{17}{8}$ $\text{L}_\text{F}\text{V}_\text{T}-\%00\in\otimes\text{N}_\text{L}\text{P}_\text{t}$ $\text{ffl}_\text{F}\text{V}_\text{T}\frac{1}{3}\%00\%00\text{Rs}$ $\text{C}_\text{R}-\in\text{N}_\text{L}\text{C}_\text{R}1\text{H}_\text{T}\otimes\frac{5}{8}-1\%00$
 $\frac{5}{8}\text{N}\in\text{L}_\text{F}\text{N}_\text{L}\text{L}_\text{F}$ $\frac{1}{3}\text{L}_\text{F}$ $\frac{1}{3}$ $\text{N}^\circ\in\text{N}_\text{L}\text{V}_\text{T}\text{C}_\text{R}\frac{5}{8}$ $\frac{17}{8}$ $\text{N}_\text{L}\otimes\frac{5}{8}\text{L}_\text{F}\frac{5}{8}$ $\text{N}_\text{L}\text{W}^1$ $\frac{7}{8}1\text{C}_\text{R}\text{N}^\circ\text{L}_\text{F}\text{P}_\text{t}$

$\blacksquare\text{C}_\text{R}1\text{H}_\text{T}\frac{5}{8}\text{C}_\text{R}\text{N}_\text{L}\in\frac{5}{8}\text{L}_\text{F}$

$-\otimes\frac{5}{8}\text{N}^\circ\in\frac{1}{8}\frac{1}{3}\%00$ $\frac{7}{8}1\text{C}_\text{R}\text{N}^\circ\text{V}_\text{T}\%00\frac{1}{3}$

$-\text{t}_2\otimes\blacksquare\frac{1}{4}$

$\bullet1\%00\frac{1}{3}\text{C}_\text{R}$ $\text{N}^\circ\frac{1}{3}\text{L}_\text{F}\text{L}_\text{F}$

$\frac{1}{4}\alpha\text{P}_\text{t}\otimes\otimes\text{N}^\circ\frac{10}{100}-^\circ$

$\text{H}_\text{T}\text{H}_\text{T}\frac{5}{8}\frac{1}{3}\text{C}_\text{R}\frac{1}{3}-\frac{1}{8}\frac{5}{8}$ $-1\%001\text{C}_\text{R}\%00\frac{5}{8}\text{L}_\text{F}\text{L}_\text{F}$ 1C_R $\text{Rs}\frac{5}{8}\%00\%001\text{W}$ $\text{H}_\text{T}\in\%00\%00\frac{1}{3}\text{C}_\text{R}\text{L}_\text{F}$

$\bullet\frac{5}{8}\%00\text{N}_\text{L}\in-\otimes$ $\text{H}_\text{T}1\in-\text{N}_\text{L}$

$\otimes\frac{1}{4}$ $\text{N}_\text{L}1$ $\otimes\text{C}_\text{R}$ $^\circ-$

$-1\in\%00\in-\otimes$ $\text{H}_\text{T}1\in-\text{N}_\text{L}$

$\frac{1}{2}\otimes\alpha$ $^\circ-$

$-1\%00\text{V}_\text{T}\frac{2}{3}\in\%00\in\text{N}_\text{L}\text{Rs}$ $\in-$ $\text{W}^1\frac{1}{3}\text{N}_\text{L}\frac{5}{8}\text{C}_\text{R}$

$\otimes\otimes\text{fR}$ i°L $^\circ-\text{L}$

$\otimes\text{P}_\text{t}\text{n}$ $\otimes\text{fR}$ $\text{i}^\circ\frac{1}{2}\text{L}$ $^\circ-\text{L}$

$\otimes\text{n}$ $\otimes\text{fR}$ $\text{i}^\circ\frac{1}{2}\text{L}$ $^\circ-\text{L}$

$\text{"}\frac{1}{8}\in\frac{3}{8}\in\text{N}_\text{L}\text{Rs}$ $\text{i}^\circ\text{H}_\text{T}\text{SM}\frac{1}{3}\text{L}$

$\otimes\text{P}_\text{t}\otimes\text{L}$ $\text{i}\in-$ $\text{W}^1\frac{1}{3}\text{N}_\text{L}\frac{5}{8}\text{C}_\text{R}\text{L}$

$\text{"}\rightarrow\text{ff}\text{t}-$ $\text{"}-\text{t}_\text{t}$

$\text{"}\frac{1}{8}\frac{5}{8}\text{N}_\text{L}\in\frac{1}{8}$ $\frac{1}{3}\frac{1}{8}\in\frac{3}{8}$ $\in\text{L}_\text{F}$ $\frac{1}{3}$ $\frac{1}{8}1\%001\text{V}_\text{T}\text{C}_\text{R}\%00\frac{5}{8}\text{L}_\text{F}\text{L}_\text{F}$ $\%00\in\text{F}_\text{F}\text{V}_\text{T}\in\frac{3}{8}$ $1\text{C}_\text{R}\otimes\frac{1}{3}-\in\frac{1}{8}$
 $\frac{1}{8}1\text{N}^\circ\text{H}_\text{T}1\text{V}_\text{T}-\frac{3}{8}$ $\text{W}\in\text{N}_\text{L}\otimes$ $\text{N}_\text{L}\otimes\frac{5}{8}$ $\frac{1}{8}\otimes\frac{5}{8}\text{N}^\circ\in\frac{1}{8}\frac{1}{3}\%00$ $\frac{7}{8}1\text{C}_\text{R}\text{N}^\circ\text{V}_\text{T}\%00\frac{1}{3}$ $-\text{t}_\frac{1}{4}-\blacksquare\blacksquare\text{tP}_\text{t}$ $\text{fi}^\circ\frac{5}{8}-$
 $\text{V}_\text{T}-\frac{3}{8}\in\%00\text{V}_\text{T}\text{N}_\text{L}\frac{5}{8}\frac{3}{8}\text{E}$ $\in\text{N}_\text{L}$ $\in\text{L}_\text{F}$ $\text{L}_\text{F}1\text{N}^\circ\frac{5}{8}\text{N}_\text{L}\in\text{N}^\circ\frac{5}{8}\text{L}_\text{F}$ $\frac{1}{8}\frac{1}{3}\%00\%00\frac{5}{8}\frac{3}{8}$ $\otimes\%00\frac{1}{3}\frac{1}{8}\in\frac{1}{3}\%00$
 $\frac{1}{3}\frac{1}{8}\frac{5}{8}\text{N}_\text{L}\in\frac{1}{8}$ $\frac{1}{3}\frac{1}{8}\in\frac{3}{8}\text{P}_\text{t}$ $\text{ffl}\in-\frac{5}{8}\otimes\frac{1}{3}\text{C}_\text{R}$ $\in\text{L}_\text{F}$ -1 $\%00\frac{5}{8}\text{L}_\text{F}\text{L}_\text{F}$ $\text{N}_\text{L}\otimes\frac{1}{3}-$ C_R $\frac{1}{3}\frac{1}{8}\frac{5}{8}\text{N}_\text{L}\in\frac{1}{8}$ $\frac{1}{3}\frac{1}{8}\in\frac{3}{8}$
 $\frac{2}{3}\text{Rs}$ $\otimes1\%00\text{V}_\text{T}\text{N}^\circ\frac{5}{8}\text{E}$ $\text{N}^\circ\frac{1}{3}\%00\in-\otimes$ $\frac{1}{3}\frac{1}{8}\frac{5}{8}\text{N}_\text{L}\in\frac{1}{8}$ $\frac{1}{3}\frac{1}{8}\in\frac{3}{8}$ $\text{N}_\text{L}\otimes\frac{5}{8}$ $\text{N}^\circ\frac{1}{3}\in-$ $\frac{1}{8}1\text{N}^\circ\text{H}_\text{T}1-\frac{5}{8}-\text{N}_\text{L}$ $\frac{17}{8}$
 $\otimes\in-\frac{5}{8}\otimes\frac{1}{3}\text{C}_\text{R}$ $\frac{1}{3}\text{H}_\text{T}\frac{1}{3}\text{C}_\text{R}\text{N}_\text{L}$ $\frac{7}{8}\text{C}_\text{R}1\text{N}^\circ$ $\text{W}^1\frac{1}{3}\text{N}_\text{L}\frac{5}{8}\text{C}_\text{R}\text{P}_\text{t}$ $\text{"}\frac{1}{8}\frac{5}{8}\text{N}_\text{L}\in\frac{1}{8}$ $\frac{1}{3}\frac{1}{8}\in\frac{3}{8}$ $\otimes\frac{1}{3}\text{L}_\text{F}$ $\frac{1}{3}$
 $\frac{3}{8}\in\text{L}_\text{F}\text{N}_\text{L}\in-\frac{1}{8}\text{N}_\text{L}\in\otimes\frac{5}{8}$ $\text{L}_\text{F}1\text{V}_\text{T}\text{C}_\text{R}$ $\text{N}_\text{L}\frac{1}{3}\text{L}_\text{F}\text{N}_\text{L}\frac{5}{8}$ $\frac{1}{3}-\frac{3}{8}$ $\text{H}_\text{T}\text{V}_\text{T}-\otimes\frac{5}{8}-\text{N}_\text{L}$ $\text{L}_\text{F}\text{N}^\circ\frac{5}{8}\%00\%00\text{P}_\text{t}$

†- 1/3 3/8 3/8 ∈ N_L ∈ 1- N_L 1 ① V_T L_F 5/8 ① 10/00 3/8 ⊕ ∈ -5/8 ① 1/3 F_R ∈ N_L ∈ L_F N^① 1/3 ∈ -0/00 R_s
H_T F_R 13/8 V_T 1/8 5/8 3/8 1/3 L_F 1/3 H_T F_R 5/8 1/8 V_T F_R L_F F_R N_L 1 H_T 10/00 R_s ⊕ ∈ -R_s % 1/3 1/8 5/8 N_L 1/3 N_L 5/8 1/3 -3/8
1/8 5/8 % 00/00 V_T % 00 1 L_F 5/8 1/3 1/8 5/8 N_L 1/3 N_L 5/8 P_t ‡ N_L ∈ L_F 1/8 % 00 1/3 L_F L_F ∈ 7/8 ∈ 5/8 3/8 1/3 L_F 1/3 W 5/8 1/3 %
1/3 1/8 ∈ 3/8 L_F ∈ -1/8 5/8 ∈ N_L 1-0/00 R_s H_T 1/3 F_R N_L ∈ 1/3 % 00/00 R_s 3/8 ∈ L_F L_F 11/8 ∈ 1/3 N_L 5/8 L_F ∈ -
L_F 10/00 V_T N_L ∈ 1-£ 2/3 V_T N_L 1/8 1-1/8 5/8 -N_L F_R 1/3 N_L 5/8 3/8 1/3 1/8 5/8 N_L ∈ 1/8 1/3 1/8 ∈ 3/8 ∈ L_F 1/8 F_R F_R 1 L_F ∈ ⊕ 5/8
1/3 -3/8 1/8 1/3 - 1/3 N_L N_L 1/3 1/8 % N_L ⑤ 5/8 L_F % ∈ -P_t

■ F_R 1 H_T 5/8 F_R N_L ∈ 5/8 L_F

— ⑤ 5/8 N^② ∈ 1/8 1/3 % 7/8 1 F_R N^② V_T % 00 1/3 — 1/2 ‡ ⊕ 1/2
● 10/00 1/3 F_R N^① 1/3 L_F L_F n^② P_t ^② 21/2 ① . N^② 10/00 -②
“ H_T H_T 5/8 1/3 F_R 1/3 -1/8 5/8 — 10/00 1 V_T F_R % 00 5/8 L_F L_F % 00 ∈ F_F V_T ∈ 3/8
■ 3/8 1 F_R ‡ 5/8 1/3 ⊕ ∈ % 00 R_s ⊕ ∈ -5/8 ① 1/3 F_R % 00 ∈ % 5/8
5/8 -L_F ∈ N_L R_s ② P_t ^② ⊗ 1/8 N^② -1/4
● 5/8 % 00 N_L ∈ -① H_T 1 ∈ -N_L ② n N_L 1 ② ⊗ ② —
-1 ∈ % 00 ∈ -① H_T 1 ∈ -N_L ② ⊗ N_L 1 ② ⊗ ② ② —
-10/00 V_T 2/3 ∈ % 00 ∈ N_L R_s ∈ - W 1/3 N_L 5/8 F_R ● ∈ L_F 1/8 ∈ 2/3 % 00 5/8
② 5/8 7/8 F_R 1/3 1/8 N_L ∈ ⊕ 5/8 ∈ -3/8 5/8 N j-∠ ② P_t 1/4 ② jffl' , ② P_t ^② ∠
ffl ∈ L_F 1/8 1 L_F ∈ N_L R_s ② P_t 1/2 1/2 N^② 1/3 L_F

● fff “ ① ■ R

● 5/8 N_L ① 1/3 -10/00 £ 1/3 % 00 L_F 1 % -1 W - 1/3 L_F N^⑤ 5/8 N_L ② R_s % 1/3 % 00 1/8 ① 10/00 1/3 N^① -① L_F N_L
1 N_L ⑤ 5/8 F_R -1/3 N^⑤ 5/8 L_F ∈ L_F 1/3 1/8 ⑤ 5/8 N^② ∈ 1/8 1/3 % 00 W ∈ N_L ② N_L ⑤ 5/8 7/8 1 F_R N^② V_T % 00 1/3 -† 1/4 ■ ‡ 1/3
N^⑤ 5/8 N_L ② R_s % ② F_R 1 V_T H_T % 00 ∈ -④ 5/8 3/8 N_L 1 1/3 ② R_s 3/8 F_R 1 N R_s % ② F_R 1 V_T H_T £ 17/8 N_L 5/8 -
1/3 2/3 2/3 F_R 5/8 ⊕ ∈ 1/3 N_L 5/8 3/8 ● 5/8 ■ ‡ ∠ P_t “ H_T 10/00 1/3 F_R L_F 10/00 ⊕ 5/8 -N_L £ N^⑤ 5/8 N_L ① 1/3 -10/00
1/3 1/8 F_F V_T ∈ F_R 5/8 3/8 N_L ⑤ 5/8 -1/3 N^⑤ 5/8 W 113/8 1/3 % 00 1/8 ① 10/00 2/3 5/8 1/8 1/3 V_T L_F 5/8 ∈ N_L W 1/3 L_F 1-1/8 5/8
H_T F_R 13/8 V_T 1/8 5/8 3/8 1/8 ② ∈ 5/8 7/8 % 00 R_s 2/3 R_s N_L ⑤ 5/8 3/8 5/8 L_F N_L F_R V_T 1/8 N_L ∈ ⊕ 5/8 3/8 ∈ L_F N_L ∈ % 00/00 1/3 N_L ∈ 1-
17/8 W 113/8 P_t fff 13/8 1/3 R_s £ N^⑤ 5/8 N_L ① 1/3 -10/00 ∈ L_F N^① 1/3 ∈ -0/00 R_s H_T F_R 13/8 V_T 1/8 5/8 3/8
∈ -3/8 V_T L_F N_L F_R ∈ 1/3 % 00/00 R_s 2/3 R_s ② R_s 3/8 F_R 1 ⑤ 5/8 -1/3 N_L ∈ 1- 17/8 1/8 1/3 F_R 2/3 1- N^① -1 N^① ∈ 3/8 5/8 P_t

$\bullet \frac{5}{8} N_L \ominus \frac{1}{3} - 1\%_0 \in L_F N_L \ominus \frac{5}{8} L_F \in N^{\circ} H_T \%_0 \frac{5}{8} L_F N_L \frac{1}{3} \%_0 \frac{1}{8} 1 \ominus 1\%_0 \Omega \frac{1}{8} 1 - L_F \in L_F N_L \in - \otimes \frac{17}{8} \frac{1}{3}$
 $N^{\circ} \frac{5}{8} N_L \ominus R_S \%_0 \otimes C_R 1 V_T H_T \%_0 \in - \%_u \frac{5}{8} \frac{3}{8} N_L 1 \frac{1}{3} \ominus R_S \frac{3}{8} C_R 1 N R_S \%_0 \otimes C_R 1 V_T H_T P_t \ddagger N_L \in L_F \frac{1}{3}$
 $\%_0 \in \otimes \otimes N_L \Omega \oplus 1\%_0 \frac{1}{3} N_L \in \%_0 \frac{5}{8} \Omega \frac{1}{8} 1\%_0 1 C_R \%_0 \frac{5}{8} L_F L_F \Omega \frac{7}{8} \%_0 \frac{1}{3} N^{\circ} N^{\circ} \frac{1}{3} \frac{2}{3} \%_0 \frac{5}{8} \%_0 \in F_F V_T \in \frac{3}{8}$
 $\# \in N_L \ominus \frac{1}{3} \frac{3}{8} \in L_F N_L \in - \frac{1}{8} N_L \in \oplus \frac{5}{8} \frac{13}{8} 1 C_R L_F \in N^{\circ} \in \%_0 \frac{1}{3} C_R N_L 1 N_L \ominus \frac{1}{3} N_L \frac{17}{8} \frac{5}{8} N_L \ominus \frac{1}{3} - 1\%_0 P_t$

$\blacksquare C_R 1 H_T \frac{5}{8} C_R N_L \in \frac{5}{8} L_F$

$- \ominus \frac{5}{8} N^{\circ} \in \frac{1}{8} \frac{1}{3} \%_0 \bigcirc 1 C_R N^{\circ} V_T \%_0 \frac{1}{3}$

$- \dagger \frac{1}{4} \blacksquare \dagger$

$\bullet 1\%_0 \frac{1}{3} C_R \bullet \frac{1}{3} L_F L_F$

$\frac{1}{4} \frac{1}{2} P_t \textcircled{C} \otimes N^{\circ} 1\%_0 -^{\circ}$

$" H_T H_T \frac{5}{8} \frac{1}{3} C_R \frac{1}{3} - \frac{1}{8} \frac{5}{8}$

$- 1\%_0 1 C_R \%_0 \frac{5}{8} L_F L_F R \in F_F V_T \in \frac{3}{8}$

$\blacksquare \frac{3}{8} 1 C_R$

$, N_L \ominus \frac{1}{3} - 1\%_0 \%_0 \in \%_u \frac{5}{8}$

$\frac{5}{8} - L_F \in N_L R_S$

$\textcircled{a} P_t \otimes \textcircled{a} \frac{1}{2} \otimes f \frac{1}{8} N^{\circ} \frac{1}{4}$

$\bullet \frac{5}{8} \%_0 N_L \in - \otimes \blacksquare 1 \in - N_L$

$- \textcircled{a} \otimes P_t^n \circ -$

$- 1 \in \%_0 \in - \otimes \blacksquare 1 \in - N_L$

$n \textcircled{C} P_t \textcircled{a} -$

$- 1\%_0 V_T \frac{2}{3} \in \%_0 \in N_L R_S \in - f \frac{1}{3} N_L \frac{5}{8} C_R N^{\circ} \in L_F \frac{1}{8} \in \frac{2}{3} \%_0 \frac{5}{8}$

$f f \frac{1}{3} H_T 1 C_R \blacksquare C_R \frac{5}{8} L_F L_F V_T C_R \frac{5}{8}$

$\textcircled{a} \frac{1}{4} P_t \textcircled{a} \frac{1}{2} \%_u \blacksquare \frac{1}{3} j \frac{1}{3} N_L \frac{1}{2} \textcircled{a} \circ - \zeta$

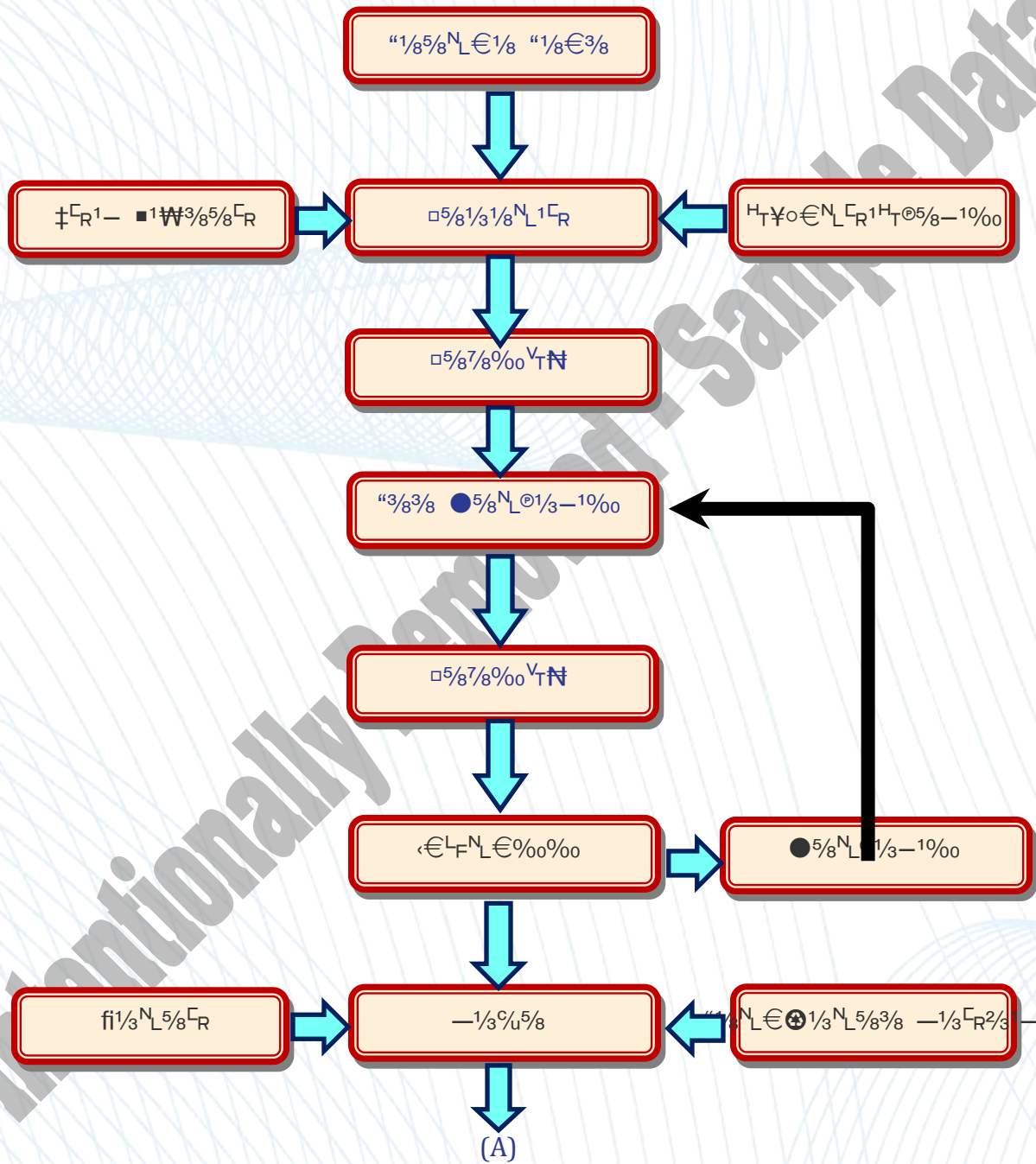
$\ominus \frac{5}{8} \frac{7}{8} C_R \frac{1}{3} \frac{1}{8} N_L \in \oplus \frac{5}{8} \ddagger - \frac{3}{8} \frac{5}{8} N j - \zeta \textcircled{a} P_t \frac{1}{4} \frac{1}{4} \textcircled{C} \textcircled{a}$

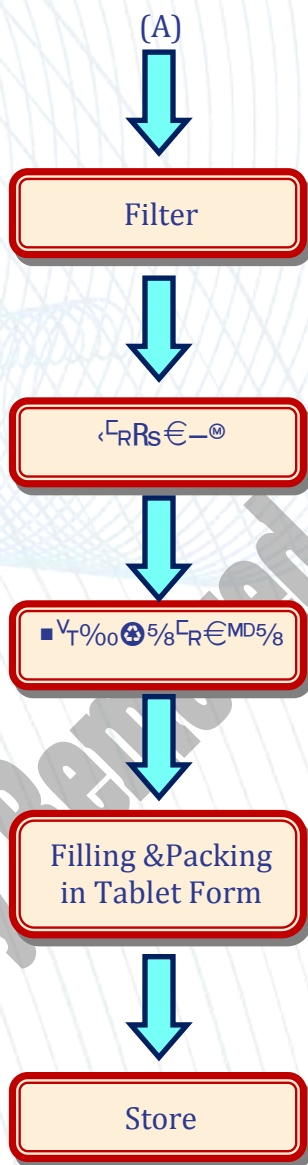
$f f \in L_F \frac{1}{8} 1 L_F \in N_L R_S$

$\textcircled{a} P_t \textcircled{C} \textcircled{C} N^{\circ} \blacksquare \frac{1}{3} \cdot L_F j \frac{1}{3} N_L \frac{1}{2} \textcircled{C} \circ - \zeta$

[illegible]

Process Flow Diagram





- $-\frac{005}{8}-\frac{3}{8}\in-\frac{03}{4}\text{ff}^{\circ 5/8}$ $\text{C}_{\text{R}1/3}\text{W}$ $\text{N}^{\circ 1/3}\text{N}_{\text{L}5/8}\text{C}_{\text{R}}\in\frac{1}{3}\%_{00}\text{L}_{\text{F}}$ $\text{C}_{\text{R}5/8}\text{F}_{\text{V}}\text{T}\in\text{C}_{\text{R}5/8}3/8$ $7/8^1\text{C}_{\text{R}}$ $\text{N}_{\text{L}}^{\circ}\in\text{L}_{\text{F}}$
 $\text{L}_{\text{F}}\text{N}_{\text{L}5/8}\text{H}_{\text{T}}\in-\frac{1}{8}\%_{00}\text{V}_{\text{T}3/8}5/8$ $\%_{00}\text{V}_{\text{T}2/3}\text{C}_{\text{R}}\in\frac{1}{8}1/3-\text{N}_{\text{L}}\text{L}_{\text{F}}$ $1/3-3/8$ $3/8\in\text{L}_{\text{F}}\in-\text{N}_{\text{L}5/8}\text{C}_{\text{R}1/3}-\text{N}_{\text{L}}\text{L}_{\text{F}}\text{P}_{\text{t}}$ $\text{ff}^{\circ 5/8}$
 $5/8\text{L}_{\text{F}}\text{N}_{\text{L}}\in\text{N}^{\circ 1/3}\text{N}_{\text{L}5/8}3/8$ $1/8^1-\text{L}_{\text{F}}\text{V}_{\text{T}}\text{N}^{\circ}\text{H}_{\text{T}}\text{N}_{\text{L}}\in 1-$ $\text{C}_{\text{R}1/3}\text{N}_{\text{L}5/8}$ $7/8^1\text{C}_{\text{R}}$ $\text{N}^{\circ 1/3}\text{C}_{\text{R}}-5/8\text{L}_{\text{F}}\in\text{V}_{\text{T}}\text{N}^{\circ}$
 $\text{L}_{\text{F}}\text{N}_{\text{L}5/8}1/3\text{C}_{\text{R}1/3}\text{N}_{\text{L}5/8}$ $\in\text{L}_{\text{F}}$ $1/2$ $\text{C}_{\text{R}1/3}\text{N}^{\circ}\text{L}_{\text{F}}$ $\text{H}_{\text{T}5/8}\text{C}_{\text{R}}$ aaaa $\text{N}_{\text{L}1/3}2/3\%_{00}5/8\text{N}_{\text{L}}\text{L}_{\text{F}}\Sigma$ $1/3-3/8$ $\text{N}_{\text{L}}^{\circ}5/8$
 $5/8\text{L}_{\text{F}}\text{N}_{\text{L}}\in\text{N}^{\circ 1/3}\text{N}_{\text{L}5/8}3/8$ $1/8^1-\text{L}_{\text{F}}\text{V}_{\text{T}}\text{N}^{\circ}\text{H}_{\text{T}}\text{N}_{\text{L}}\in 1-$ $\text{C}_{\text{R}1/3}\text{N}_{\text{L}5/8}$ $7/8^1\text{C}_{\text{R}}$ $1/8\text{C}_{\text{R}}1\text{L}_{\text{F}}1/8^1/3\text{C}_{\text{R}}\text{N}^{\circ 5/8}\%_{00}\%_{00}1\text{L}_{\text{F}}5/8$
 $\text{L}_{\text{F}}13/8\in\text{V}_{\text{T}}\text{N}^{\circ}$ $\in\text{L}_{\text{F}}$ aa $\text{C}_{\text{R}1/3}\text{N}^{\circ}\text{L}_{\text{F}}$ $\text{H}_{\text{T}5/8}\text{C}_{\text{R}}$ aaaa $\text{N}_{\text{L}1/3}2/3\%_{00}5/8\text{N}_{\text{L}}\text{L}_{\text{F}}\text{P}_{\text{t}}$
- $-1\text{N}^{\circ}\text{H}_{\text{T}}\text{C}_{\text{R}5/8}\text{L}_{\text{F}}\text{L}_{\text{F}}\in 1-\frac{3}{4}\circ^1$ $1/3^3/8^3/8\in\text{N}_{\text{L}}\in 1-\frac{1}{3}\%_{00}$ $\text{C}_{\text{R}1/3}\text{W}$ $\text{N}^{\circ 1/3}\text{N}_{\text{L}5/8}\text{C}_{\text{R}}\in\frac{1}{3}\%_{00}\text{L}_{\text{F}}$ $1/3\text{C}_{\text{R}5/8}$
 $\text{C}_{\text{R}5/8}\text{F}_{\text{V}}\text{T}\in\text{C}_{\text{R}5/8}3/8$ $7/8^1\text{C}_{\text{R}}$ $\text{N}_{\text{L}}^{\circ}\in\text{L}_{\text{F}}$ $\text{L}_{\text{F}}\text{N}_{\text{L}5/8}\text{H}_{\text{T}}\text{P}_{\text{t}}$
- $-11/3\text{N}_{\text{L}}\in-\text{C}_{\text{R}1/3}\text{H}_{\text{T}}\text{N}_{\text{L}}\in 1-\frac{1}{3}\%_{00}\text{C}_{\text{R}1/3}$ $\text{ff}^{\circ 5/8}$ $\text{C}_{\text{R}1/3}\text{W}$ $\text{N}^{\circ 1/3}\text{N}_{\text{L}5/8}\text{C}_{\text{R}}\in\frac{1}{3}\%_{00}\text{L}_{\text{F}}$ $\text{C}_{\text{R}5/8}\text{F}_{\text{V}}\text{T}\in\text{C}_{\text{R}5/8}3/8$
 $7/8^1\text{C}_{\text{R}}$ $\text{N}_{\text{L}}^{\circ}\in\text{L}_{\text{F}}$ $\text{L}_{\text{F}}\text{N}_{\text{L}5/8}\text{H}_{\text{T}}\in-\frac{1}{8}\%_{00}\text{V}_{\text{T}3/8}5/8$ $1/3$ $1/8^11/3\text{N}_{\text{L}}\in-\text{C}_{\text{R}1/3}\text{N}_{\text{L}5/8}\text{C}_{\text{R}}\in\frac{1}{3}\%_{00}$ $1\text{L}_{\text{F}}\text{V}_{\text{T}}1/8^{\circ}$
 $1/3\text{L}_{\text{F}}$ $\text{C}_{\text{R}5/8}\text{H}_{\text{T}}\text{C}_{\text{R}1}\text{N}^{\circ 5/8}\%_{00}\%_{00}1\text{L}_{\text{F}}5/8$ 1C_{R} $\text{L}_{\text{F}}^{\circ 5/8}\%_{00}\%_{00}1/3^1/8^{\circ}$ $1/3-3/8$ $1/3$ $\text{L}_{\text{F}}1\%_{00}\text{C}_{\text{R}5/8}-\text{N}_{\text{L}}$ $1\text{L}_{\text{F}}\text{V}_{\text{T}}1/8^{\circ}$
 $1/3\text{L}_{\text{F}}$ $5/8\text{N}_{\text{L}}^{\circ}1/3-1\%_{00}\text{C}_{\text{R}1}$ $\text{ff}^{\circ 5/8}$ $1/8^1-\text{L}_{\text{F}}\text{V}_{\text{T}}\text{N}^{\circ}\text{H}_{\text{T}}\text{N}_{\text{L}}\in 1-$ $\text{C}_{\text{R}1/3}\text{N}_{\text{L}5/8}$ $7/8^1\text{C}_{\text{R}}$ $\text{N}_{\text{L}}^{\circ}5/8$ $1/8^11/3\text{N}_{\text{L}}\in-\text{C}_{\text{R}1/3}$
 $\text{N}^{\circ 1/3}\text{N}_{\text{L}5/8}\text{C}_{\text{R}}\in\frac{1}{3}\%_{00}$ $\text{W}\in\%_{00}\%_{00}$ $3/8^5/8\text{H}_{\text{T}}5/8-3/8$ $1-$ $\text{N}_{\text{L}}^{\circ}5/8$ $3/8^5/8\text{L}_{\text{F}}\in\text{C}_{\text{R}5/8}3/8$ $\text{N}_{\text{L}}^{\circ}\in 1/8\text{C}_{\text{R}}-5/8\text{L}_{\text{F}}\text{L}_{\text{F}}$
 $17/8$ $\text{N}_{\text{L}}^{\circ}5/8$ $1/8^11/3\text{N}_{\text{L}}\in-\text{C}_{\text{R}1/3}$ $1/3-3/8$ $\text{N}_{\text{L}}^{\circ}5/8$ $\text{L}_{\text{F}}\in\text{MD}5/8$ $17/8$ $\text{N}_{\text{L}}^{\circ}5/8$ $\text{N}_{\text{L}1/3}2/3\%_{00}5/8\text{N}_{\text{L}}\text{L}_{\text{F}}\text{P}_{\text{t}}$
- $\blacksquare 1/3^1/8\text{C}_{\text{R}}1/3\text{C}_{\text{R}}\in-\frac{03}{4}\circ^1$ $1/3^3/8^3/8\in\text{N}_{\text{L}}\in 1-\frac{1}{3}\%_{00}$ $\text{C}_{\text{R}1/3}\text{W}$ $\text{N}^{\circ 1/3}\text{N}_{\text{L}5/8}\text{C}_{\text{R}}\in\frac{1}{3}\%_{00}\text{L}_{\text{F}}$ $1/3\text{C}_{\text{R}5/8}$
 $\text{C}_{\text{R}5/8}\text{F}_{\text{V}}\text{T}\in\text{C}_{\text{R}5/8}3/8$ $7/8^1\text{C}_{\text{R}}$ $\text{N}_{\text{L}}^{\circ}\in\text{L}_{\text{F}}$ $\text{L}_{\text{F}}\text{N}_{\text{L}5/8}\text{H}_{\text{T}}\text{P}_{\text{t}}$

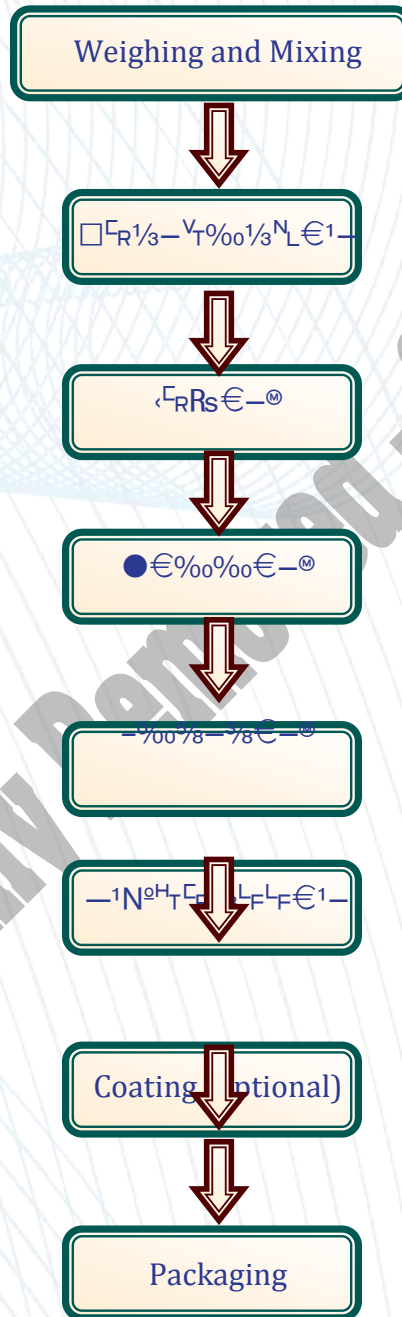
Please note that the consumption rates for raw materials can vary depending on the specific formulation and dosage of the tablets, as well as the equipment used and the manufacturing process employed. The above consumption rates are only estimates and should be used as a general guideline.

TABLET STRIP PACKING PROCESS:

- $\text{O}5/8^5/8^3/8\in-\frac{03}{4}$ $\text{ff}^{\circ 5/8}$ $\text{N}_{\text{L}1/3}2/3\%_{00}5/8\text{N}_{\text{L}}\text{L}_{\text{F}}$ $1/3\text{C}_{\text{R}5/8}$ $7/8^5/8^3/8$ $\in-\text{N}_{\text{L}}1$ $1/3$ $\text{C}_{\text{R}1/3}\text{H}_{\text{T}}\text{H}_{\text{T}}5/8\text{C}_{\text{R}}\Sigma$ $\text{W}\in\text{C}_{\text{R}}1/8^{\circ}$
 $7/8^5/8^5/8^3/8\text{L}_{\text{F}}$ $\text{N}_{\text{L}}^{\circ}5/8\text{N}^{\circ}$ $\in-\text{N}_{\text{L}}1$ $\text{N}_{\text{L}}^{\circ}5/8$ $\text{L}_{\text{F}}\text{N}_{\text{L}}\text{C}_{\text{R}}\in\text{H}_{\text{T}}$ $\text{H}_{\text{T}}1/3^1/8\text{C}_{\text{R}}\in-\text{C}_{\text{R}1/3}$ $\text{N}^{\circ 1/3}1/8\text{C}_{\text{R}}\in-5/8\text{P}_{\text{t}}$

- $O1C_R N^{\circ} \in -\frac{3}{4}$ $ff^{\circ 5/8}$ $H_T 1/3 1/8 \in -\infty$ $N^{\circ 1/3} N_L 5/8 C_R \in 1/3 \infty$ $N_L R_S H_T \in 1/8 1/3 \infty \infty R_S$ $1/3$
 $H_T \infty 1/3 L_F N_L \in 1/8$ $1C_R$ $1/3 \infty V_T N^{\circ} \in -V_T N^{\circ}$ $7/8 1 \in \infty$ $\in L_F$ $H_T V_T \infty \infty 5/8 3/8$ $7/8 C_R 1 N^{\circ}$ $1/3$
 $C_R 5/8 5/8 \infty$ $1/3 - 3/8$ $7/8 1 C_R N^{\circ 5/8 3/8}$ $\in -N_L 1$ $1/3$ $1/8 1 - N_L \in -V_T 1 V_T L_F$ $L_F N_L C_R \in H_T P_t$ $ff^{\circ 5/8}$
 $L_F N_L C_R \in H_T$ $\in L_F$ $N_L \in 5/8 - 1/8 V_T N_L$ $\in -N_L 1$ $\in -3/8 \in \in 3/8 V_T 1/3 \infty$ $\infty 5/8 - \infty N_L \in L_F$ $2/3 1/3 L_F 5/8 3/8$
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Process Flow Diagram



SWOT Analysis

API (Active Pharmaceutical Ingredient) manufacturing is a critical component of the pharmaceutical industry. A SWOT analysis provides a comprehensive view of the strengths, weaknesses, opportunities, and threats associated with the venture. Here's a SWOT analysis for an API Manufacturing Unit:

Strengths

Specialized Knowledge: Requires in-depth understanding and expertise in organic chemistry, allowing for niche market positioning.

Quality Control: Strict adherence to global standards (like Good Manufacturing Practice) ensures high product quality and minimizes recalls.

Intellectual Property: Proprietary manufacturing processes and patents can offer a competitive edge.

Supply Chain Control: Direct manufacturing can allow for better control over the supply chain, ensuring timely production and delivery.

Strategic Partnerships: Existing collaborations with pharmaceutical firms can guarantee demand and steady contracts.

Weaknesses

Capital Intensive: Significant upfront investment required in infrastructure, equipment, and R&D.

Regulatory Challenges: Stringent regulatory landscape that requires continuous compliance and can lead to potential shutdowns if not met.

Environmental Concerns: Manufacturing can lead to waste generation and environmental hazards if not managed properly.

Dependency on Raw Materials: Reliance on specific raw materials which may be sourced from specific regions, leading to supply chain vulnerabilities.

High Competition: A competitive market with established players, especially from regions with lower manufacturing costs.

Opportunities

Growing Pharmaceutical Market: With an aging global population and increased healthcare needs, demand for medicines and, consequently, APIs is on the rise.

Biosimilars & Biologics: Growing interest and demand in this segment offer new avenues for API manufacturers.

Diversification: Expanding into different types of APIs or related products can tap into new revenue streams.

Global Expansion: Exploring markets in emerging economies or regions with less API manufacturing penetration.

Sustainable and Green Manufacturing: Adopting eco-friendly processes can be a market differentiator and reduce environmental liabilities.

Threats

Regulatory Changes: Sudden policy shifts or regulatory changes in major markets can impact operations.

Price Wars: Competitive pricing from manufacturers in regions with lower production costs can erode profit margins.

Intellectual Property Violations: Risk of process imitation or patent infringements, especially in regions with lax IP enforcement.

Supply Chain Disruptions: Natural disasters, geopolitical tensions, or global crises (like pandemics) can disrupt raw material availability or transportation.

Technological Advancements: New production methods or breakthroughs can render current manufacturing processes obsolete.

While the API manufacturing industry is lucrative, it's also fraught with challenges, particularly from a regulatory and competition perspective. Strategic planning, continuous innovation, and strict adherence to quality and regulatory norms are critical for success in this field.

Risk Assessments

Risk assessment in API (Active Pharmaceutical Ingredient) manufacturing involves evaluating potential hazards and implementing measures to prevent or mitigate their impact. The complex nature of the pharmaceutical industry, combined with stringent regulatory requirements, makes risk assessment vital. Here's a comprehensive risk assessment for an API Manufacturing Unit:

1. Chemical and Biological Exposure:

2. Environmental Contamination:

3. Quality Control Failures:

4. Supply Chain Disruptions:

5. Regulatory Non-compliance:

6. Intellectual Property Breaches:

7. Equipment Failure:

8. Accidents and Fires:

9. Market Dynamics:

Chemical and Biological Exposure

Chemical and Biological Exposure is a major concern in API (Active Pharmaceutical Ingredient) manufacturing units due to the nature of materials and processes involved. Let's delve deeper into this specific risk:

Chemical and Biological Exposure Risk in API Manufacturing:

Nature of the Risk

Chemical Exposure: Employees in an API manufacturing unit are at risk of exposure to various chemicals, solvents, and reagents, some of which may be toxic, carcinogenic, or harmful in other ways. Prolonged or high-level exposure can lead to acute and chronic health conditions.

Biological Exposure: While chemical exposure is more common, there are instances, especially in biopharmaceuticals, where employees can be exposed to harmful microorganisms or biological toxins.

Potential Outcomes

Immediate Health Effects: Inhalation, ingestion, or skin contact with certain chemicals can cause immediate reactions such as burns, respiratory issues, or poisoning.

Long-term Health Effects: Chronic exposure can lead to diseases like cancer, organ damage, respiratory diseases, or neurological disorders.

Contamination: Accidental exposure can also lead to product contamination, impacting product quality and patient safety.

Contributing Factors

Inadequate Safety Protocols: Lack of proper guidelines or their enforcement can lead to accidents.

Lack of Training: Employees unaware of the hazards associated with specific chemicals or processes are at a higher risk.

Equipment Failure: Breakdown or malfunctioning of safety equipment can lead to exposure.

Operational Errors: Accidental spills, incorrect handling, or procedural errors can result in unwanted exposure.

Mitigation Strategies

Safety Protocols: Establish and enforce strict safety guidelines tailored to the specific chemicals and biological agents in use. This includes safe storage, handling, and disposal methods.

Training: Regularly train employees on the hazards associated with their work, safe handling procedures, and emergency response actions.

Personal Protective Equipment (PPE): Provide and mandate the use of appropriate PPE like gloves, masks, protective clothing, and eyewear.

Containment: Utilize closed systems, fume hoods, and biosafety cabinets to minimize exposure risks, especially during processes that release vapors or aerosols.

Monitoring: Install chemical and biological exposure monitors in high-risk areas to detect and alert of any accidental releases or elevated exposure levels.

Emergency Response Plans: Ensure that there are protocols in place to handle accidental exposures, including first aid measures, antidotes, and decontamination procedures.

Health Surveillance: Regularly monitor the health of employees to detect early signs of chemical or biological exposure effects.

Regular Review and Audits

Given the dynamic nature of API manufacturing and the ever-evolving list of substances and processes, it's crucial to regularly review and update safety measures. Regular audits can ensure adherence to protocols and identify areas of potential improvement.

In conclusion, while chemical and biological exposure risks are inherent to API manufacturing, a proactive and thorough approach to safety can minimize these risks, ensuring the wellbeing of the workforce and the integrity of the product.

Environmental Contamination

Environmental contamination risk in API (Active Pharmaceutical Ingredient) manufacturing pertains to the potential release of chemicals, waste products, and other substances into the environment, which can harm ecosystems, human health, and the reputation of the manufacturing entity. Here's a detailed assessment:

Environmental Contamination Risk in API Manufacturing:

Nature of the Risk

Water Contamination: Discharge of untreated or inadequately treated effluents can lead to water pollution, affecting aquatic life and entering the human water supply.

Air Pollution: Release of volatile organic compounds (VOCs), particulate matter, and other pollutants can affect air quality and contribute to global environmental issues like climate change.

Soil Contamination: Spills, improper waste disposal, and leakage can lead to soil pollution, impacting agriculture and local ecosystems.

Biodiversity Impact: The introduction of foreign chemicals into ecosystems can reduce biodiversity by harming specific species.

Potential Outcomes

Regulatory Penalties: Violation of environmental regulations can lead to hefty fines, legal actions, and even cessation of operations.

Cleanup Costs: Companies might be obligated to finance cleanup operations for contamination they've caused.

Reputation Damage: Environmental harm can tarnish a company's image, impacting its relationships with stakeholders, customers, and investors.

Ecological Damage: Long-term harm to local ecosystems which might be irreversible.

Human Health Concerns: Contaminated water or crops can lead to health issues in local communities.

Contributing Factors

Lack of Treatment Facilities: Inadequate or outdated wastewater treatment plants.

Operational Negligence: Spills or accidents due to operational errors or equipment malfunctions.

Inadequate Waste Management: Lack of proper protocols for waste storage, treatment, and disposal.

Lack of Monitoring: Absence of regular monitoring of emissions and effluents.

Mitigation Strategies

Effluent Treatment: Install advanced wastewater treatment facilities to ensure that all effluents meet regulatory standards before discharge.

Air Emission Control: Use technologies like scrubbers, filters, and catalysts to minimize airborne emissions from operations.

Waste Management: Implement stringent waste segregation, treatment, and disposal protocols. Consider waste reduction and recycling methods.

Spill Prevention: Invest in spill containment infrastructure, such as secondary containment systems and leak detection systems.

Continuous Monitoring: Regularly monitor and analyze emissions, effluents, and waste to ensure they meet regulatory and internal standards.

Employee Training: Educate employees about the importance of environmental responsibility and train them in best practices.

Community Engagement: Engage with local communities to address their concerns and ensure that the manufacturing unit's operations are not adversely affecting their environment and health.

Regular Review and Audits

Environmental standards and best practices evolve over time. It's essential to stay updated with the latest regulations and technologies and regularly audit environmental practices to identify potential areas of improvement.

Environmental contamination is a significant risk for API manufacturing units, not just due to potential regulatory penalties but also because of the ethical implications of causing harm to the environment and communities. Proactive environmental management and a commitment to sustainability can substantially reduce these risks, benefiting both the company and society at large.

Quality Control Failure

Quality control (QC) is a critical function in the production of Active Pharmaceutical Ingredients (APIs). Any failure in QC processes can result in severe consequences for both the manufacturer and the end-users (patients). Let's assess the risk associated with Quality Control failures in an API manufacturing unit:

Quality Control Failure Risk in API Manufacturing:

Nature of the Risk

Substandard Products: A lapse in QC can result in the release of APIs that don't meet the required specifications, compromising drug efficacy and safety.

Recalls: APIs failing to meet quality standards can lead to extensive product recalls, which are costly and damaging to the manufacturer's reputation.

Regulatory Sanctions: Regulatory bodies may levy fines, enforce shutdowns, or take other punitive actions if substandard APIs are discovered in the market.

Patient Harm: Perhaps the gravest risk is the potential harm to patients consuming drugs made from substandard APIs. This can range from lack of therapeutic effect to serious adverse reactions.

Potential Outcomes

Financial Impact: The cost associated with product recalls, regulatory fines, and potential lawsuits can be substantial.

Reputation Damage: Once the trust is broken, it may take years to rebuild a brand's reputation, leading to a potential loss of market share.

Operational Disruptions: QC failures might warrant a full-scale review of manufacturing processes, causing disruptions in production.

Legal Liability: If substandard APIs result in harm to patients, manufacturers might face lawsuits.

Contributing Factors

Human Error: Mistakes during testing, oversight in following protocols, or misinterpretation of results.

Equipment Malfunctions: Failure of instruments used in QC can lead to inaccurate results.

Inadequate Training: If staff aren't properly trained, they may miss critical QC steps or fail to recognize anomalies.

Sampling Errors: Not selecting representative samples or not sampling frequently enough.

External Factors: Contamination from external sources or variability in raw materials.

Mitigation Strategies

Robust QC Protocols: Establish stringent and comprehensive QC processes that are well-documented and regularly updated.

Regular Training: Ensure QC staff receive regular training to stay updated on the latest standards, tools, and best practices.

Equipment Maintenance: Schedule regular maintenance and calibration for all QC equipment.

Audit and Review: Periodically audit the QC processes and results. Third-party audits can offer unbiased insights.

Data Management: Invest in reliable data management systems to accurately track and analyze QC data, ensuring traceability.

Feedback Loop: Establish a system where issues detected post-production can be traced back to QC processes to identify and rectify gaps.

Quality Assurance Integration: Integrate QC with the wider Quality Assurance (QA) framework, ensuring that quality is embedded throughout the production process.

Preparedness for Failures

Despite best efforts, QC failures can still occur. Preparedness can help in swift response:

Rapid Response Protocols: Develop protocols to quickly address and rectify QC failures when detected.

Communication Strategy: Establish a strategy to communicate QC failures to stakeholders, regulatory bodies, and the public if necessary, emphasizing transparency and accountability.

Insurance: Consider insurance coverages that can help mitigate financial impacts of QC failures, such as product recall insurance.

Quality Control is of paramount importance in API manufacturing. A proactive, thorough, and continually improving approach to QC can substantially reduce the risk of failures, ensuring the safety and efficacy of the end pharmaceutical product. It's not just about compliance but also the ethical responsibility of manufacturers to deliver quality products to patients.

Supply chain Disruptions

Supply chain disruptions can have significant implications for the continuity and profitability of any manufacturing operation, including the production of Active Pharmaceutical Ingredients (APIs). Given the global nature of pharmaceutical supply chains and the critical importance of APIs, these disruptions can be especially consequential. Here's a breakdown of the risk associated with supply chain disruptions in an API manufacturing unit:

Supply Chain Disruptions Risk in API Manufacturing:

Nature of the Risk

Raw Material Shortages: Unavailability or delay in obtaining essential raw materials can halt production.

Transportation Delays: Disruptions in transportation can delay the arrival of raw materials or the shipment of finished APIs.

Supplier Insolvency: A key supplier going bankrupt or facing financial difficulties can interrupt the supply chain.

Geopolitical Issues: Trade wars, sanctions, or other geopolitical tensions can block or delay the import or export of essential materials.

Natural Disasters: Events such as earthquakes, floods, and hurricanes can disrupt production or the transportation of materials.

Pandemics or Epidemics: As seen with COVID-19, pandemics can significantly strain and disrupt global supply chains.

Potential Outcomes

Production Halt: Without necessary materials, API production can come to a standstill.

Financial Impact: Delays and disruptions can lead to increased costs and lost revenue.

Contractual Penalties: Failure to deliver APIs on time might result in penalties or legal actions based on contractual obligations.

Loss of Market Share: Consistent supply chain issues can lead customers to switch to more reliable competitors.

Increased Prices: Shortages in the supply chain can drive up prices of raw materials, affecting profit margins.

Contributing Factors

Over-reliance on Single Supplier: Depending heavily on one supplier for crucial materials can be risky.

Lack of Visibility: Not having clear visibility into the entire supply chain can prevent early detection of potential disruptions.

Complex Supply Chain: A multi-tiered global supply chain can have more potential points of failure.

Lack of Contingency Planning: Without a backup plan, even minor disruptions can have outsized effects.

Mitigation Strategies

Diversify Suppliers: Rely on multiple suppliers, ideally from different regions, for crucial materials.

Stockpile Essential Materials: Maintain a strategic reserve of essential raw materials to buffer against short-term disruptions.

Supply Chain Visibility: Invest in supply chain monitoring tools and systems to gain real-time insights.

Regular Risk Assessment: Continuously assess suppliers and logistics partners for potential risks.

Contingency Planning: Develop robust contingency plans for various scenarios, from supplier issues to transportation disruptions.

Supplier Relationships: Build strong relationships with key suppliers, fostering communication and collaboration.

Local Sourcing: Where feasible, source materials locally or regionally to reduce the complexity and vulnerability of the supply chain.

Regular Review

Given the dynamic nature of global supply chains, regularly review and update risk assessments and mitigation strategies. New suppliers, routes, or methods may emerge that offer lower risk or more reliability.

While the pharmaceutical industry and API manufacturers, in particular, can't predict or prevent all potential supply chain disruptions, they can significantly reduce their risk and impact through careful planning, diversification, and continuous monitoring. Given the critical nature of APIs in the healthcare sector, ensuring a robust and resilient supply chain is paramount.

Regulatory Non-compliance

Regulatory compliance is a critical element in the API (Active Pharmaceutical Ingredient) manufacturing industry. Given the potential consequences for public health and safety, regulatory agencies worldwide set strict standards and requirements. Non-compliance with these regulations can have severe repercussions for API manufacturers. Let's dive deep into the regulatory non-compliance risks for an API manufacturing unit:

Regulatory Non-compliance Risks in API Manufacturing:

Nature of the Risk

Product Seizures: Non-compliant products may be seized and destroyed by authorities, leading to a direct financial loss.

Production Halts: Regulatory agencies can order the suspension of manufacturing activities until compliance is restored.

License Revocation: In severe cases, authorities might revoke manufacturing licenses, effectively shutting down operations.

Fines and Penalties: Regulatory bodies can levy significant financial penalties for non-compliance.

Criminal Liability: In extreme cases, company executives and decision-makers can face criminal charges.

Loss of Market Access: Non-compliant products might be banned from certain markets or countries.

Audits and Inspections: Increased frequency of regulatory audits and inspections, adding to operational overhead.

Potential Outcomes

Financial Impact: Direct costs from fines and indirect costs from halted production or lost sales.

Reputation Damage: The public, clients, and stakeholders may lose trust in a company that fails to meet regulatory standards.

Operational Disruptions: Regular disruptions due to increased inspections and audits.

Reduced Competitive Edge: Losing access to key markets or facing restrictions can provide competitors an advantage.

Contributing Factors

Lack of Knowledge: Not being aware of all relevant regulations or updates to existing regulations.

Negligence: Overlooking or underestimating the importance of regulatory compliance.

Inadequate Systems: Absence of robust systems to track, monitor, and ensure compliance.

Poor Training: Employees unaware of compliance requirements or not trained adequately to meet them.

Mitigation Strategies

Stay Informed: Regularly review and stay updated with regulations in all jurisdictions where the company operates or sells.

Invest in Compliance: Allocate resources (both human and financial) specifically for regulatory compliance.

Training Programs: Regularly train staff on regulatory requirements and updates.

Internal Audits: Conduct periodic internal audits to identify areas of non-compliance and address them proactively.

Engage Experts: Consider hiring or consulting with regulatory experts or legal counsel specialized in the pharmaceutical industry.

Feedback Mechanisms: Establish mechanisms for employees to report potential compliance issues or concerns without fear of retaliation.

Collaborate with Authorities: Foster a cooperative and transparent relationship with regulatory bodies. Engage in industry forums and associations to understand best practices.

Preparedness for Non-compliance Issues

Despite best efforts, instances of non-compliance can occur. Being prepared can help address them swiftly:

Crisis Management Plan: Develop a plan detailing the steps to take in case of non-compliance issues, including communication strategies.

Insurance Coverage: Evaluate insurance options that cover regulatory fines or related liabilities.

Transparency: If non-compliance is identified, proactively communicate with regulatory bodies, showcasing efforts to rectify and ensure it doesn't recur.

Regulatory compliance is non-negotiable in the API manufacturing sector. The risks associated with non-compliance are substantial, both in terms of financial and reputational impact. Proactive measures, continuous training, and a culture that prioritizes compliance can help mitigate these risks, ensuring the company's longevity and trustworthiness in the market.

Intellectual Property Breaches

Intellectual property (IP) is a critical asset in the pharmaceutical and API (Active Pharmaceutical Ingredient) manufacturing industry. It can pertain to proprietary formulations, processes, methods, and various other facets of the production. Protecting IP ensures competitive advantage, brand reputation, and long-term profitability. Let's explore the risks associated with intellectual property breaches for an API manufacturing unit:

Intellectual Property Breaches Risk in API Manufacturing:

Nature of the Risk

Industrial Espionage: Deliberate acts by competitors or other entities to steal trade secrets, processes, or formulations.

Inadvertent Disclosure: Accidental leak or exposure of IP due to negligence or lack of proper controls.

Infringement: Other entities using or producing similar APIs without authorization, potentially infringing on patents or other IP rights.

Counterfeiting: Unauthorized production of duplicate APIs that can flood the market and impact original sales.

Reverse Engineering: Competitors developing a similar or identical product by analyzing and replicating the original API.

Potential Outcomes

Financial Losses: Loss of revenue due to unauthorized sales or competition from counterfeit products.

Decreased Competitive Advantage: If the unique processes or formulations become public or are copied, the company might lose its edge in the market.

Litigation Costs: Engaging in legal battles to protect IP rights or sue infringing parties can be expensive and time-consuming.

Reputation Damage: Counterfeit or substandard products in the market can damage the brand's reputation.

Loss of Exclusivity: If patent rights are infringed upon or trade secrets are exposed, the company may lose exclusive rights to produce certain APIs.

Contributing Factors

Weak IP Protection Mechanisms: Inadequate measures to protect and secure IP can make it vulnerable.

Lack of Employee Training: Employees unaware of the importance of IP and how to safeguard it.

Insufficient Legal Protections: Operating in jurisdictions with weak IP laws or enforcement.

Complex Supply Chains: The more complex and global the supply chain, the more points of potential IP exposure.

Poor Contractual Agreements: Contracts with suppliers, partners, or employees that don't adequately address IP protection.

Mitigation Strategies

Strong IP Portfolio: Regularly review and strengthen IP rights through patents, trademarks, copyrights, and trade secrets.

Confidentiality Agreements: Ensure that employees, contractors, and partners sign NDAs (Non-Disclosure Agreements) or other relevant confidentiality agreements.

Employee Training: Regularly train staff on the importance of IP and the methods to protect it.

Access Controls: Implement strict access controls to sensitive information. Use digital security measures for digital assets.

Regular Audits: Conduct periodic IP audits to identify vulnerabilities and address them.

Legal Vigilance: Stay updated on IP laws in all operating jurisdictions and be prepared to enforce rights when needed.

Collaboration with Stakeholders: Engage with suppliers and other partners to ensure they also prioritize IP protection.

Preparedness for IP Breaches

Response Strategy: Develop a well-defined strategy to address any potential IP breaches, including legal and PR responses.

Insurance: Consider intellectual property insurance to help mitigate potential financial losses from IP breaches.

Continuous Monitoring: Invest in tools and services that monitor the market for potential unauthorized products or IP infringements.

Intellectual property is among the most valuable assets for an API manufacturing unit. Given the significant investment in research, development, and production, safeguarding this asset is paramount. While risks can't be entirely eliminated, a proactive and comprehensive approach to IP protection can significantly mitigate potential damages and ensure the company remains competitive and profitable.

Equipment Failure

Equipment failure in an API (Active Pharmaceutical Ingredient) manufacturing unit is a significant concern, not just due to the potential financial implications but also because of the potential impact on product quality, safety, and delivery timelines. Let's delve into the risks associated with equipment failure in such a setting:

Equipment Failure Risks in API Manufacturing:

Nature of the Risk

Mechanical Breakdown: Wear and tear, or the inherent failure of mechanical parts.

Electrical Failure: Issues related to power supply, electrical circuits, or electronic components.

Software Glitches: Malfunctions in the software controlling the equipment, leading to errors or shutdowns.

Calibration Errors: Equipment not calibrated correctly can lead to deviations in production standards.

Overheating: Inadequate cooling or prolonged usage can lead to overheating and subsequent failure.

Human Error: Misuse or mishandling of equipment by operators.

Potential Outcomes

Production Delays: Manufacturing processes could be halted until equipment is repaired or replaced.

Increased Costs: Costs associated with repair, replacement, and potential wasted raw materials.

Compromised Quality: Malfunctioning equipment can lead to subpar products that don't meet quality standards.

Safety Hazards: Equipment failures can pose direct safety risks to workers, especially if it leads to explosions, leaks, or the release of toxic substances.

Regulatory Implications: Producing substandard APIs due to equipment failure can attract regulatory scrutiny, penalties, or recalls.

Contractual Penalties: Delays in production might result in breaches of delivery contracts, leading to penalties or loss of business.

Reduced Capacity: Until the equipment is fixed or replaced, the manufacturing unit may operate below its optimal capacity.

Contributing Factors

Inadequate Maintenance: Failing to perform regular maintenance checks and services.

Old Equipment: Aging machinery is more prone to breakdowns.

Lack of Spare Parts: Not having essential spare parts on hand for quick replacements.

Operator Unfamiliarity: Using equipment without proper training or not following SOPs (Standard Operating Procedures).

Environmental Factors: Exposure to extreme conditions like humidity, temperature, or corrosive materials.

Mitigation Strategies

Preventive Maintenance: Implement a rigorous preventive maintenance schedule based on the manufacturer's recommendations.

Operator Training: Ensure operators are well-trained on the equipment they handle and are aware of potential signs of malfunction.

Inventory Management: Maintain an inventory of essential spare parts for quick replacements.

Equipment Modernization: Periodically assess the age and performance of equipment and consider upgrading or replacing outdated machines.

Monitoring Systems: Implement real-time monitoring systems that can detect and alert for any anomalies in equipment performance.

Redundancy: For critical equipment, consider having backup systems in place to ensure continuous production.

Safety Protocols: Establish safety protocols to handle equipment failures, especially when there's a risk of hazardous occurrences.

Vendor Relationships: Foster good relationships with equipment vendors for faster service, repairs, or replacements.

Response Plan for Equipment Failures

Emergency Response: Have an immediate action plan for equipment failures, especially if there's a safety concern.

Root Cause Analysis: After addressing the immediate concern, conduct an analysis to understand the cause of the failure to prevent future occurrences.

Documentation: Document all equipment failures, actions taken, and changes implemented. This not only aids in continuous improvement but can also be essential for regulatory compliance.

While equipment failures in an API manufacturing unit can have substantial repercussions, with proactive planning, regular maintenance, and proper training, these risks can be significantly reduced. Investing in high-quality equipment, modern monitoring systems, and continuous staff training are vital to ensuring smooth and uninterrupted operations.

Accidents and Fires

The API (Active Pharmaceutical Ingredient) manufacturing environment, like many industrial settings, is vulnerable to accidents and fires due to the handling and storage of volatile chemicals, complex equipment, and various processes. Understanding the risks associated with accidents and fires is crucial to establishing prevention and response strategies.

Accidents and Fires Risks in API Manufacturing:

Nature of the Risk

Chemical Spills or Leaks: Accidental release of hazardous chemicals can lead to contamination and expose employees to health risks.

Equipment Malfunctions: Mechanical or electrical equipment failures might cause sparks or excessive heat, leading to fires.

Explosions: Some chemicals, under specific conditions, can be explosive, especially if stored or handled incorrectly.

Human Error: Mismanagement or mishandling of chemicals, equipment, or processes can initiate accidents or fires.

Structural Failures: Poor facility design or maintenance can lead to accidents, including collapses.

Potential Outcomes

Injury or Fatality: Workers or staff might get injured or, in extreme cases, lose their lives.

Production Delays: Manufacturing processes could be halted until the facility is restored or deemed safe.

Property Damage: Fires or explosions can cause substantial damage to the facility and equipment.

Environmental Contamination: Chemical spills or fires might release toxic substances into the environment, affecting surrounding communities or ecosystems.

Regulatory Penalties: Accidents can result in violations of safety and environmental regulations, leading to financial penalties and increased scrutiny.

Increased Insurance Premiums: Recurrent accidents or fires can lead to higher insurance premiums.

Reputation Damage: Accidents, especially those that harm the environment or community, can severely damage the company's reputation.

Contributing Factors

Inadequate Training: Lack of proper training on equipment use and emergency procedures.

Poor Maintenance: Neglecting regular maintenance of equipment and facilities.

Ineffective Safety Protocols: Absence of or not adhering to established safety protocols.

Aging Infrastructure: Old equipment or facilities that don't meet current safety standards.

Lack of Monitoring: Absence of alarms or monitoring systems that could detect and alert for potential hazards.

Mitigation Strategies

Safety Training: Regular and comprehensive training sessions for all employees, focusing on both prevention and response.

Emergency Drills: Routine fire and emergency evacuation drills to ensure preparedness.

Equipment Maintenance: Rigorous schedules for inspecting and maintaining all equipment and infrastructure.

Safety Equipment: Adequate provision of safety equipment like fire extinguishers, sprinkler systems, safety goggles, chemical-resistant suits, etc.

Safety Audits: Periodic safety audits to identify vulnerabilities and potential hazards.

Monitoring Systems: Implement real-time monitoring systems for detecting gas leaks, chemical imbalances, or other anomalies.

Proper Storage: Ensure chemicals are stored in appropriate containers, in designated areas, and under suitable conditions.

Safety Signage: Clear signage indicating potential hazards, emergency exits, and safety equipment locations.

Response Plan for Accidents and Fires

Immediate Evacuation: Prioritize human safety. Ensure all personnel know evacuation routes.

Emergency Response Team: A dedicated team trained to handle emergencies, including first aid, firefighting, and containment of chemical spills.

Communication Plan: A strategy for communicating with employees, stakeholders, authorities, and, if necessary, the media.

Incident Reporting: Document the incident, actions taken, and outcomes. This is crucial for regulatory compliance, insurance claims, and future risk assessments.

Review and Revise: After managing the incident, review the causes and the response. Adjust protocols, training, and infrastructure as needed to prevent recurrence.

While the risks associated with accidents and fires in an API manufacturing unit can be severe, proactive risk management can substantially mitigate potential damages. A combination of prevention strategies, continuous training, and a robust emergency response plan is essential to safeguard both human and material assets.

Market Dynamics Risks

Market dynamics refer to the forces and factors that influence the behavior of buyers and sellers in a market. In the context of an API (Active Pharmaceutical Ingredient) manufacturing unit, understanding market dynamics is crucial to ensuring the unit's profitability, sustainability, and growth. Let's delve into the risks associated with market dynamics for an API manufacturing unit:

Market Dynamics Risks in API Manufacturing:

Nature of the Risk

Demand Fluctuations: Sudden changes in the demand for specific APIs can impact production and sales.

Price Volatility: Prices of APIs can be volatile due to competition, regulatory changes, or market demand.

New Competitors: Entry of new players in the market can reduce market share and pricing power.

Shifts in Regulatory Landscape: Changes in regulations can influence production methods, quality control, and export-import policies.

Technological Advancements: New technologies or production methods can render existing processes obsolete.

Dependence on Few Buyers: Reliance on a small number of large buyers can be risky if they change suppliers or alter their requirements.

Global Market Influences: Global economic conditions, pandemics, or geopolitical events can affect the international demand and supply for APIs.

Potential Outcomes

Reduced Profit Margins: Intense competition or price wars can squeeze profit margins.

Inventory Surpluses or Shortages: Misreading demand can result in excessive inventory or stockouts.

Stranded Investments: Heavy investments in now obsolete technologies can result in financial losses.

Loss of Market Share: Inability to compete effectively can lead to a reduced market presence.

Regulatory Penalties: Non-compliance with new regulations can lead to fines and penalties.

Reduced Demand: Global influences can significantly reduce the demand for certain APIs.

Contributing Factors

Inadequate Market Research: Not staying updated with market trends, demands, and competitive landscapes.

Slow Adaptability: Inability to swiftly adapt to changing market or technological conditions.

Fixed Long-term Contracts: Locked-in contracts that don't allow flexibility in changing market dynamics.

Lack of Diversification: Over-reliance on a specific market segment or geography.

Mitigation Strategies

Continuous Market Research: Regularly assess and predict market trends, demands, and potential threats.

Diversification: Diversify product offerings and explore new markets to reduce dependency on a single segment.

Flexible Production Capabilities: Ensure the manufacturing unit can adapt to produce different APIs based on changing demands.

Adaptive Pricing Strategies: Implement pricing strategies that can adjust based on market conditions while ensuring profitability.

Invest in R&D: Invest in research and development to stay ahead in technological advancements and develop innovative products.

Build Strong Relationships: Foster good relationships with key buyers and suppliers to ensure stability and insights into market shifts.

Regulatory Compliance: Stay updated with global regulatory trends and ensure continuous compliance.

Risk Management Planning: Incorporate market dynamics risks in the company's broader risk management strategy.

Preparedness for Market Dynamics Shifts

Scenario Planning: Engage in "what-if" analyses to foresee potential market shifts and plan responses accordingly.

Financial Resilience: Maintain a robust financial position to withstand short-term market disruptions.

Agile Supply Chain: Ensure the supply chain can adapt swiftly to changing market dynamics, allowing for sourcing flexibility and responsive distribution.

Continuous Training: Train the workforce to be adaptive and skilled in new technologies or processes as market demands evolve.

While market dynamics present significant risks to an API manufacturing unit, they also offer opportunities for those companies agile and prepared enough to capitalize on them. Being proactive in understanding, predicting, and responding to market changes can turn these risks into competitive advantages. An adaptive, well-informed, and resilient approach is key to navigating the intricate landscape of market dynamics in the API manufacturing industry.

Social Impact and Justification for API Manufacturing Unit

Active Pharmaceutical Ingredients (API) are the core components of medicines, responsible for their therapeutic effects. Setting up an API manufacturing unit has a variety of implications for society. Here's a breakdown of the potential social impacts and justifications for starting such a venture:

Social Impact

Access to Medicines:

Producing APIs locally can lead to increased availability of essential drugs in the region, ensuring timely access to medicines for the populace.

Employment Opportunities:

An API manufacturing unit can provide direct employment to a range of professionals, from skilled workers and technicians to scientists and administrators.

Skill Development:

The pharmaceutical industry requires specialized skills. By providing training and development, such units can uplift the skill set of the local workforce.

Research and Development:

API manufacturing units often tie up with academic institutions or research centers. This promotes scientific research and innovation in the region.

Healthcare Cost Regulation:

Local production of APIs can potentially reduce the cost of importing them, leading to more affordable medicines.

Strengthening Healthcare Systems:

A reliable supply of APIs ensures that the healthcare system can respond effectively to health crises, be it chronic diseases or pandemics.

Environmental Concerns:

API manufacturing can sometimes lead to environmental pollution if not managed properly. This can affect the health and well-being of local communities.

Dependency Reduction:

By producing APIs domestically, a country can reduce its dependence on foreign suppliers, ensuring a stable supply even in geopolitical or global economic crises.

Justification for an API Manufacturing Unit

Market Demand:

With the global demand for medicines on the rise, starting an API manufacturing unit can be a lucrative venture if there's a market gap.

Strategic Advantage:

If the region has a strategic advantage, like availability of raw materials, skilled labor, or supportive infrastructure, it can be a compelling reason to start the unit.

Policy and Incentives:

Governments often provide incentives for sectors that are crucial for public health. If such incentives are available, they can justify the establishment of the unit.

Export Potential:

If the domestic production exceeds local demand, there's potential for export, opening up additional revenue streams.

Integration with Existing Pharma Business:

For those already in the pharmaceutical business, producing APIs can be a backward integration strategy, giving better control over quality and costs.

Innovation and Patenting:

Developing new or improved APIs can lead to patenting opportunities, providing a competitive edge and higher profitability.

Responding to Global Crises:

As seen during situations like the COVID-19 pandemic, having domestic API production capabilities allows for a swift response in ramping up the production of essential drugs.

Sustainability and Green Manufacturing:

With increasing demand for sustainable practices, setting up a green API manufacturing unit can cater to this niche, offering environmental benefits and potentially attracting specific markets or partnerships.

Diversification:

For investors or businesses in related sectors, API manufacturing can be a means to diversify the portfolio, spreading risks and tapping into the lucrative pharmaceutical sector.

Establishing an API manufacturing unit is a significant venture that requires rigorous planning, adherence to stringent regulatory standards, and a long-term vision. While the social impacts and justifications are compelling, potential entrepreneurs should also be aware of the challenges, including competition, regulatory hurdles, quality control, and environmental concerns. Properly managed, however, such a unit can be both economically rewarding and socially beneficial.

Economic Impact and Justification for API Manufacturing Unit

Active Pharmaceutical Ingredients (API) manufacturing plays a crucial role in the global healthcare value chain. Establishing an API manufacturing unit can offer significant economic benefits to both the local community and the broader pharmaceutical industry. Here's a breakdown of the potential economic impacts and justifications for such an endeavor:

Economic Impact

Direct Employment:

An API manufacturing unit requires a diverse workforce, from R&D scientists and quality control experts to technicians, laborers, and administrative staff, creating substantial direct employment opportunities.

Supply Chain Development:

The establishment of such a unit can spur the growth of related businesses, from raw material suppliers to packaging and logistics providers.

Export Revenues:

If the unit produces APIs at competitive prices and quality, there's potential to tap into the global market, earning valuable foreign exchange for the country.

Local Pharmaceutical Industry Boost:

A domestic API production unit can lead to a reduction in medicine prices, as the dependency on imported APIs decreases. This can bolster the growth of local generic medicine manufacturers.

Investment Attraction:

A thriving API unit can attract further investments in the region, from both local and foreign investors, leading to broader economic development.

Infrastructure Development:

To support the API unit, there might be enhancements in local infrastructure, including roads, utilities, and possibly even research institutions.

Tax Revenues:

A profitable manufacturing unit will contribute to local and national tax coffers, supporting public expenditures.

Skills and Knowledge Spillover:

The technical know-how and expertise developed within the API unit can spill over to other sectors, elevating the overall industrial competence of the region.

R&D Investments:

A portion of the profits from API manufacturing can be reinvested into research and development, leading to the discovery of new APIs or more efficient production methods.

Justification for an API Manufacturing Unit

Growing Global Demand:

With an aging global population and increasing healthcare needs, the demand for medicines, and by extension APIs, is on the rise.

Cost Competitiveness:

If the region has advantages like low labor costs, affordable raw materials, or supportive infrastructure, manufacturing APIs can be economically viable.

Policy Incentives:

Many governments provide incentives, subsidies, or favorable policies to promote the pharmaceutical sector, given its strategic importance.

Vertical Integration:

For pharmaceutical companies, producing their own APIs offers better control over quality, costs, and supply chain reliability.

Diversification:

Investors or companies in related sectors might see API manufacturing as a strategic diversification, tapping into the lucrative pharmaceutical market.

Supply Chain Resilience:

The COVID-19 pandemic underscored the risks of over-relying on a few regions for API supply. Diversifying the API production landscape can offer more resilience to global supply chains.

Geopolitical Advantage:

In a world with changing geopolitical dynamics, having domestic API capabilities can be a strategic advantage, ensuring medicine security for a nation.

Innovation Potential:

The pharmaceutical sector is driven by innovation. If there's potential to develop novel APIs or improve existing ones, it can justify the establishment of a specialized unit.

While the economic incentives for starting an API manufacturing unit are substantial, potential entrepreneurs should be mindful of challenges such as stringent regulatory requirements, international competition, technological advancements, and environmental concerns. A rigorous feasibility analysis, coupled with a clear understanding of the market dynamics, will be crucial for the venture's success.

Future Challenges for API Manufacturing Unit

The Active Pharmaceutical Ingredients (API) manufacturing sector is dynamic and influenced by a range of factors, from technological advancements to geopolitical shifts. As companies contemplate venturing into or expanding within this domain, they should be mindful of the potential future challenges:

Regulatory Compliance:

Governments and international bodies are continually updating regulations to ensure drug safety and efficacy. Staying compliant can be costly and complex, especially when operating in multiple markets with differing regulatory requirements.

Environmental Concerns:

API manufacturing can be resource-intensive and potentially polluting. Stricter environmental regulations, combined with increased societal pressure for sustainable operations, could necessitate significant investments in cleaner production processes.

Price Pressures:

With the growth of the generic drug market, there's consistent downward pressure on prices. Manufacturers will need to continually optimize processes to maintain profitability.

Intellectual Property Issues:

Patent disputes and intellectual property challenges can arise, especially when dealing with innovative drugs. Navigating this landscape requires legal expertise and can be costly.

Geopolitical Risks:

Reliance on specific regions for raw materials or key ingredients exposes manufacturers to geopolitical uncertainties, which can disrupt supply chains.

Supply Chain Disruptions:

From pandemics to natural disasters, unforeseen events can disrupt supply chains, causing delays and potential revenue losses.

Quality Control:

Ensuring consistent quality is paramount in the pharmaceutical industry. Failures can lead to product recalls, legal challenges, and significant reputational damage.

Technological Advancements:

The sector is constantly evolving, with new manufacturing techniques, digitization, and automation. Keeping up with these changes necessitates continual investment in technology and training.

Competition:

With the lucrative nature of the pharmaceutical industry, more players are entering the market, leading to increased competition and potentially reducing market share for existing manufacturers.

Antimicrobial Resistance (AMR):

As resistance to existing drugs grows, there's pressure on the pharmaceutical industry to innovate and find new solutions. For API manufacturers, this can mean shifts in demand patterns and the need for R&D investments.

Shift in Demand:

With changing global health demographics and emerging diseases, the demand for specific APIs may decrease, while others may see a surge. Adapting to these shifts in real-time is crucial.

Trade Barriers:

Tariffs, trade wars, and protectionist policies can impact the import and export of APIs, affecting profitability and market access.

Increasing Clinical Trials Complexity:

As regulatory bodies demand more comprehensive data on drug safety and efficacy, the complexity and duration of clinical trials can increase, impacting the time-to-market for new APIs.

Consumer Awareness:

An increasingly informed consumer base is demanding transparency in drug sourcing and manufacturing. Meeting these expectations while protecting proprietary information can be a delicate balance.

To thrive in the future, API manufacturers need to adopt a proactive approach, investing in research, technology, and sustainable practices. Building resilient and adaptable business models, while fostering partnerships and collaborations, can also aid in navigating these challenges.

Market Survey

Report Overview

The global active pharmaceutical ingredients market size was valued at USD 222.4 billion in 2022 and is expected to expand at a compound annual growth rate (CAGR) of 5.90% from 2023 to 2030. The growth can be attributed to the advancements in active pharmaceutical ingredient (API) manufacturing and the rising prevalence of chronic diseases, such as cardiovascular diseases and cancer. Favorable government policies for API production, along with changes in geopolitical situations, are boosting market growth.

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 $\frac{1}{2}\frac{1}{2}\otimes$ N_L1 $\frac{1}{2}P_t$ $\frac{2}{3}\in\%00\%00\in1-$ $\frac{2}{3}Rs$ $\frac{1}{2}\frac{1}{2}\frac{1}{2}P_t$ $"\otimes\in-\otimes$ $\mathbb{W}\frac{5}{8}\frac{1}{3}\%00\frac{5}{8}-L_F$ $N_L\otimes\frac{5}{8}$ $\in N^{\circ}N^{\circ}V_T-5/8$
 $L_F Rs L_F N_L\frac{5}{8}N^{\circ}$ $\frac{1}{3}-3/8$ $\in-\frac{1}{8}F_R\frac{5}{8}\frac{1}{3}L_F\frac{5}{8}L_F$ $\frac{1}{3}$ $H_T\frac{1}{3}N_L\in\frac{5}{8}-N_L L_F$ $L_F V_T L_F\frac{1}{8}\frac{5}{8}H_T N_L\in\frac{2}{3}\in\%00\in N_L Rs$
 N_L1 $\frac{1}{3}\frac{1}{8}F_F V_T\in F_R\in-\otimes$ $\in-\frac{7}{8}\frac{5}{8}\frac{1}{8}N_L\in1V_T L_F$ $\frac{3}{8}\in L_F\frac{5}{8}\frac{1}{3}L_F\frac{5}{8}L_F P_t$ $\bullet1F_R\frac{5}{8}1\oplus\frac{5}{8}F_R\Omega$
 $\in N^{\circ}H_T\frac{1}{3}\in F_R N^{\circ}\frac{5}{8}-N_L$ $\in-$ $\frac{2}{3}\frac{13}{8}Rs$ $\frac{7}{8}V_T-\frac{1}{8}N_L\in1-L_F$ $\frac{5}{8}-\otimes\frac{1}{3}-\frac{1}{8}\frac{5}{8}L_F$ $N_L\otimes\frac{5}{8}$ $\frac{1}{8}\otimes\frac{1}{3}-\frac{1}{8}\frac{5}{8}L_F$ $\frac{17}{8}$
 $\otimes\frac{5}{8}N_L N_L\in-\otimes$ $1N_L\otimes\frac{5}{8}F_R$ $\frac{3}{8}\in L_F\frac{5}{8}\frac{1}{3}L_F\frac{5}{8}L_F\Omega$ $L_F V_T\frac{1}{8}\otimes$ $\frac{1}{3}L_F$ $-ffl\kappa$ $\frac{1}{3}-3/8$ $\frac{3}{8}\in\frac{1}{3}\frac{2}{3}\frac{5}{8}N_L\frac{5}{8}L_F P_t$

$ff\otimes\frac{5}{8}$ $F_R\frac{5}{8}F_F V_T\in F_R\frac{5}{8}N^{\circ}\frac{5}{8}-N_L$ $\frac{17}{8}$ $\otimes\in\otimes\otimes$ $\frac{1}{8}\frac{1}{3}H_T\in N_L\frac{1}{3}\%00$ $\frac{7}{8}1F_R$ $N_L\otimes\frac{5}{8}$
 $H_T F_R\frac{13}{8}V_T\frac{1}{8}N_L\in1-$ $\frac{17}{8}$ $"\blacksquare\ddagger L_F$ $\in L_F$ $\frac{2}{3}\frac{5}{8}\frac{1}{8}\frac{1}{3}V_T L_F\frac{5}{8}$ $N_L\otimes\frac{5}{8}$ $H_T F_R\frac{11}{8}\frac{5}{8}L_F L_F$ $-5/8\frac{5}{8}\frac{3}{8}L_F$
 $\frac{5}{8}\mathbb{N}N_L F_R\frac{5}{8}N^{\circ}\frac{5}{8}\%00Rs$ $L_F Rs L_F N_L\frac{5}{8}N^{\circ}\frac{1}{3}N_L\in\frac{1}{8}$ $H_T F_R1N_L\frac{11}{8}\frac{1}{3}\%00L_F\Omega$ $\mathbb{W}\otimes\in\frac{1}{8}\otimes$ $F_R\frac{5}{8}L_F V_T\%00N_L L_F$ $\in-$
 $N_L\otimes\frac{5}{8}$ $1V_T N_L L_F1V_T F_R\frac{1}{8}\in-\otimes$ $\frac{17}{8}$ $\oplus\frac{1}{3}F_R\in1V_T L_F$ $"\blacksquare\ddagger L_F P_t$ $\ddagger-$ $\frac{1}{3}\frac{3}{8}\frac{3}{8}\in N_L\in1-\Omega$
 $H_T\otimes\frac{1}{3}F_R N^{\circ}\frac{1}{3}\frac{1}{8}\frac{5}{8}V_T N_L\in\frac{1}{8}\frac{1}{3}\%00$ $\frac{1}{8}1N^{\circ}H_T\frac{1}{3}-\in\frac{5}{8}L_F$ $\frac{2}{3}\frac{5}{8}-5/8\frac{7}{8}\in N_L$ $\frac{7}{8}F_R1N^{\circ}$ $"\blacksquare\ddagger$

$H_T C_R^{13/8} V_T^{1/8} N_L \in 1 - 1 V_T N_L F^1 V_T C_R^{1/8} \in - \otimes \quad 1/3 F \in N_L \quad 5/8 F_R^{1/3/8} \in 1/8^{1/3} N_L^{5/8} F \quad N_L^{\otimes 5/8} \quad -5/8^{5/8/3/8} \quad 7/8^1 C_R$
 $5/8 N^1 H_T^{5/8} - F \in \oplus^{5/8} \quad N^{\otimes 1/3} - V_T^{7/8^{1/3/8}} N_L V_T C_R \in - \otimes \quad V_T - \in N_L \quad \in - F N_L^{1/3} \otimes \otimes \otimes 1/3 N_L \in 1 - 1/3 - 3/8$
 $\otimes \otimes 1/3^{2/3} C_R \quad 7/8^1 C_R^{1/8^{5/8}} P_t \quad \text{ff} \otimes V_T F \in N_L^{\otimes 5/8} \quad -5/8^{5/8/3/8} \quad 7/8^1 C_R \quad 1/8^1 F N_L \quad F^{1/3} \oplus \in - \otimes F \quad 2/3^{11} F N_L F$
 $1 V_T N_L F^1 V_T C_R^{1/8} \in - \otimes P_t \quad - N_L C_R^{1/3} N_L^{5/8} \otimes \in 1/8 \quad 1 V_T N_L F^1 V_T C_R^{1/8} \in - \otimes \quad 2/3 R_s \quad 1/8^1 N^{\otimes} H_T^{1/3} - \in 5/8 F$
 $1/3 \otimes \otimes \otimes 1 W F \quad N_L^{\otimes 5/8} N^{\otimes} \quad N_L^1 \quad 7/8^{11/8} V_T F \quad 1 - 1/8^1 C_R^{5/8} \quad 1/8^1 N^{\otimes} H_T^{5/8} N_L^{5/8} - 1/8 \in 5/8 F \in W \otimes \in 1/8^{\otimes}$
 $C_R^{5/8} F V_T \otimes \otimes N_L F \in - \in - 1/8 C_R^{5/8^{1/3}} F^{5/8/3/8} \quad H_T C_R^{13/8} V_T^{1/8} N_L \in \oplus \in N_L R_s P_t$

$\dagger \text{“} \text{“} \dagger F \quad \text{; } \otimes \in \otimes \otimes \otimes R_s \quad H_T^1 N_L^{5/8} - N_L \quad 1/3^{1/8} N_L \in \oplus^{5/8} \quad H_T \otimes 1/3 C_R N^{\otimes 1/3^{1/8^{5/8}}} V_T N_L \in 1/8^{1/3} \otimes \otimes$
 $\in - \otimes C_R^{5/8^{3/8}} \in 5/8 - N_L F; \quad \in - 3/8 \in 1/8^{1/3} N_L^{5/8} \quad 1/3 \quad 3/8 C_R^{1/3} N^{\otimes 1/3} N_L \in 1/8 \quad F \otimes \in 7/8 N_L \quad \in - \quad \otimes 1 W$
 $H_T \otimes 1/3 C_R N^{\otimes 1/3^{1/8^{5/8}}} V_T N_L \in 1/8^{1/3} \otimes \otimes \quad 1/8^1 N^{\otimes} H_T^{1/3} - \in 5/8 F \quad V_T F^{5/8} \quad F N^{\otimes 1/3} \otimes \otimes \otimes \otimes \quad N^{\otimes 1/3} \otimes \otimes 5/8^{1/8} V_T \otimes \otimes 5/8 F \quad N_L^1$
 $17/8^{7/8^{5/8}} C_R \quad -5/8 W \quad N^{\otimes 5/8^{3/8}} \in 1/8 \in -5/8 F P_t \quad \text{“} F \quad 1/3 \quad C_R^{5/8} F V_T \otimes \otimes N_L \quad 17/8 \quad N_L^{\otimes 5/8} \quad 1/8 \otimes 1/3 - \otimes^{5/8} \quad N_L^1$
 $\dagger \text{“} \text{“} \dagger F \in 1/3 \quad H_T \in H_T^{5/8} \otimes \otimes \in -5/8 \quad 17/8 \quad N^{\otimes 1} C_R^{5/8} \quad 5/8^{7/8^{5/8^{1/8}}} N_L \in \oplus^{5/8} \quad 3/8 C_R V_T \otimes F \quad W \in N_L^{\otimes} \quad \otimes \otimes 1 W^{5/8} C_R$
 $3/8^1 F^{5/8} F \quad \otimes 1/3 F \quad 5/8 N^{\otimes 5/8} C_R \otimes^{5/8^{3/8}} P_t \quad \dagger \text{“} \text{“} \dagger F \S \quad 1/3^{3/8} \oplus 1/3 - N_L^{1/3} \otimes^{5/8} F \in -1/8 \otimes \otimes V_T^{3/8} \in - \otimes \quad N_L^{\otimes 5/8}$
 $C_R^{5/8} F V_T \in C_R^{5/8} N^{\otimes 5/8} - N_L \quad 7/8^1 C_R \quad 1/3 \quad \otimes \otimes 1 W^{5/8} C_R \quad N_L^{\otimes 5/8} C_R^{1/3} H_T^{5/8} V_T N_L \in 1/8 \quad 3/8^1 F^{5/8} \in 1/8^{1/3} H_T^{1/3^{1/8}} \in N_L R_s$
 $N_L^1 \quad 2/3 \in -3/8 \quad N_L^1 \quad F H_T^{5/8^{1/8}} \in 7/8 \in 1/8 \quad C_R^{5/8^{1/8^{5/8}}} H_T N_L^1 C_R F \in 1/3 - 3/8 \quad \otimes \otimes \otimes \quad 5/8^{7/8^{5/8}} \in 1/8 \in 5/8 - 1/8 R_s \in$
 $1/8^{1/3} - 2/3^{5/8} \quad 1/3 N_L N_L C_R \in 2/3 V_T N_L^{5/8^{3/8}} \quad N_L^1 \quad N_L^{\otimes 5/8} \in C_R \quad C_R \in F \in - \otimes \quad 3/8^{5/8} N^{\otimes 1/3} - 3/8 \quad 1/3 N^{\otimes 1} - \otimes$
 $H_T C_R^{13/8} V_T^{1/8^{5/8}} C_R F \quad 1/3 - 3/8 \quad 1/8 V_T F N_L^1 N^{\otimes 5/8} C_R F P_t \quad \text{ff} \otimes^{5/8} \quad \text{“} \dagger \quad N^{\otimes 1/3} C_R \otimes^{5/8} N_L \quad \otimes 1/3 F \quad 1/3 \otimes \otimes W^{1/3} R_s F$
 $2/3^{5/8^{5/8}} - 3/8^1 N^{\otimes} \in -1/3 N_L^{5/8^{3/8}} \quad 2/3 R_s \quad F N^{\otimes 1/3} \otimes \otimes \otimes \otimes \quad N^{\otimes 1/3} \otimes \otimes 5/8^{1/8} V_T \otimes \otimes 5/8 F P_t \quad \text{“} \dagger$
 $N^{\otimes 1/3} - V_T^{7/8^{1/3^{1/8}}} N_L V_T C_R^{5/8} C_R F \quad 1/3 C_R^{5/8} \quad 1/3^{3/8} H_T N_L \in - \otimes \quad \dagger \text{“} \text{“} \dagger F \quad N_L^1 \quad 3/8 \in 7/8^{7/8^{5/8}} C_R^{5/8} - N_L \in 1/3 N_L^{5/8}$
 $N_L^{\otimes 5/8} N^{\otimes} F^{5/8} \otimes \otimes \oplus^{5/8} F \quad 7/8 C_R^1 N^{\otimes} \quad N_L^{\otimes 5/8} \quad 1/8^1 N^{\otimes} H_T^{5/8} N_L \in N_L \in 1 - 1/3 F \quad N_L^{\otimes 5/8} \quad \otimes^{5/8} - 5/8 C_R \in 1/8 \quad \text{“} \dagger$
 $\in - 3/8 V_T F N_L C_R R_s \quad 2/3^{5/8^{1/8}} N^{\otimes 5/8} F \quad \in - 1/8 C_R^{5/8^{1/3}} F \in - \otimes \otimes \otimes R_s \quad 1/8^1 N^{\otimes} H_T^{5/8} N_L \in N_L \in \oplus^{5/8} P_t$

In addition, APIs are used as Antibody Drug Conjugates (ADCs). ADCs are important and effective treatment modalities used in combination with biologically active drugs and monoclonal antibodies for cancer. APIs effectively target cancer cells while causing minimum exposure of drugs to healthy tissues. Thus, the development of cancer-specific APIs is expected to boost the API market growth.

Type of Manufacturer Insights

The captive API segment accounted for the largest revenue share of 51.5% in 2022. It is anticipated to grow at a significant rate in the upcoming years owing to the easy availability of raw materials and extensive investments by major players to develop high-end manufacturing facilities. Furthermore, recent developments and initiatives by key players suggest that they are highly focused on in-house manufacturing over outsourcing.

○1_{CR} €-L_FN_L1/3-1/8⁵8€ €- ○1⁵8N²3/5_{CR} 1/2²⁰Ω€ ○1⁵8_{CR}N_L€L_F 1/3-1_{VT}-1/8⁵3/8 N_L0⁵8 1/3₁8_FV_T€L_F€N_L€1- 17/8 -5/8⁰00⁰07/8₁CR-V_TCR⁵8_¥1/3 ○CR1/3-1/8⁵8_¥2/3₁3_LF⁵8³8 -●●¥ 7/8₁CR H_TCR¹³8₁8₁€-○ N²10⁰00⁵8₁8₁V_T00⁵8_LF €-¥0¹V_TL_F⁵8€ W0€1/80 W1/3_LF 5/8₁3_{CR}00€5/8_{CR} 1/8₁-N_LCR¹3/8₁8₁5/8³8 N_L1 -5/8⁰00⁰07/8₁CR-V_TCR⁵8_{Pt} ff0⁵8_LF⁵8 €-€N_L€1/3₁8₁€5/8_LF V_T-3/8⁵8_{CR}N_L1/3₁8₁5/8³8 -2/3_{Rs} %5/8_{Rs} H_T00¹3_{Rs}⁵8_{CR}L_F 1/3_{CR}⁵8 1/3-N_L€1/8€H_T1/3₁8₁5/8³8 N_L1 2/3¹¹L_FN_L L_F⁵80N²⁵8-N_L 0_{CR}¹W_NL0_{Pt}

●1/3⁰1_{CR} 1/8₁N²H_T1/3-€5/8_LF 1/3_{CR}⁵8 %00¹¹€-○ N_L1 %00⁵85/8_{CR}1/30⁵8 N_L0⁵8€CR H_TCR¹³8₁8₁N_L€1- 1/8₁3₁H_T1/3²3€00€N_L€5/8_LF €- “L_F€1/3- 1/8₁V_T-N_LCR€5/8_LF €- 1/3- 1/3₁N_L5/8N²H_TN_L N_L1 H_TCR¹0€3/8⁵8 “■L_F N_L1 1_N0⁵8_{CR} 3/8_{CR}V_T0N²1/3₁8₁5/8_{CR}L_FPt “H_T1/3₁CRN_L 7/8_{CR}1N² N²1/3⁰1_{CR} H_T00¹3_{Rs}⁵8_{CR}L_F □1⁵8_{CR}-N²⁵8-N_L 17/8 ‡-3/8€1/3 0₁3_LF 1/3⁰0_LF¹ H_T00¹3₁-5/8³8 N_L1 H_TCR¹0€3/8⁵8 €N²H_T5/8₁8₁V_TL_F N_L1 3/8₁N²⁵8_LFN_L€1/8 “■ N²1/3-V_T7/8₁3₁8₁N_LV_TCR€-0_{Pt} ○1_{CR} €-L_FN_L1/3-1/8⁵8€ €- ●1/3_{CR}1/80 1/2²¹2²€ N_L0⁵8 0¹5/8_{CR}-N²⁵8-N_L 17/8 ‡-3/8€1/3 1/3-1_{VT}-1/8⁵3/8 1/3 ΩPt0 2/3€%00⁰0€1- H_T1/3₁8₁5/8₁3₁8₁5/8³8 7/8₁CR N_L0⁵8 2/3₁8₁00₁ 3/8_{CR}V_T0 €-3/8₁V_TL_FN_LCR⁵8€ W0€1/80 W€%00⁰0 0€5/8 1/3 2/3¹¹L_FN_L N_L1 3/8₁N²⁵8_LFN_L€1/8 H_TCR¹³8₁8₁N_L€1- 1/3-3/8 5/8N²H_T1_{CR}N_LL_FPt

ff1_H 2/3€1_H0¹3_{CR}N²1/3₁8₁5/8₁8₁V_TN_L€1/8₁3₁00 H_T00¹3_{Rs}⁵8_{CR}L_F 1/3_{CR}⁵8 CR⁵8_LFH_T1-L_F€2/3⁰0₅8 7/8₁CR L_FV_T2/3₁8₁5/8₁8₁N_L€1/3₁00 0_{CR}¹W_NL0 €- N_L0⁵8 1_{VT}N_LL_F1_{VT}CR¹8€-○ L_F⁵80N²⁵8-N_LPt ○V_TCRN_L0⁵8_{CR}N²1_{CR}⁵8€ N_L0⁵8 %00¹W⁵8_{CR} 1/8₁L_FN_L 17/8 N²1/3-V_T7/8₁3₁8₁N_LV_TCR€-○ €- 1/8₁V_T-N_LCR€5/8_LF L_FV_T1/80 1/3_LF ‡-3/8€1/3 1/3-3/8 -0€-1/3 N²1/3₁8₁5/8₁8₁N_L0⁵8N² 1/3 H_T1_HT_{VT}00¹3_{CR} 1/80¹€1/8⁵8 7/8₁CR H_T00¹3_{Rs}⁵8_{CR}L_F %00¹¹€-○ N_L1 1_{VT}N_LL_F1_{VT}CR¹8₁5/8₁8₁N_L0⁵8€CR “■H_TCR¹³8₁8₁N_L€1-Pt ■V_TN_LL_F1_{VT}CR¹8€-○ N²1/3-V_T7/8₁3₁8₁N_LV_TCR€-○ N_L1 3/8₁8₁5/80⁵800¹H_T€-○ 1/8₁V_T-N_LCR€5/8_LF €L_F 1/3 1/8₁L_FN_L¥5/8₁8₁7/8₁8₁5/8₁8₁N_L€5/8 N²⁵8₁3₁8₁L_FV_TCR⁵8 N_L0¹3₁N_L 1/3⁰0⁰00¹W_LF N_L0⁵8_LF⁵8 1/8₁N²H_T1/3-€5/8_LF N_L1 0¹3€- 0€0⁰5/8_{CR} H_TCR¹⁷8€N_LL_F€ N_L0_{VT}L_F 1/3₁8₁5/8⁰0⁵8_{CR}1/3₁N_L€-○ L_F⁵80N²⁵8-N_L 0_{CR}¹W_NL0_{Pt}

Type Insights

$\pm - 1 \oplus \frac{1}{3} N_L \in \oplus \frac{5}{8}$ “ $\blacksquare \pm$ $\ominus \frac{5}{8} \ominus \frac{0}{100} \frac{3}{8} N_L \ominus \frac{5}{8} \ominus \frac{0}{100} \frac{1}{3} C_R \ominus \frac{5}{8} L_F N_L L_F \ominus \frac{1}{3} C_R \frac{5}{8} \frac{17}{8} \odot P_t \otimes \star \in -$
 $\frac{1}{2} \frac{21}{2} \frac{1}{2} P_t$ $\text{ff} \ominus L_F \otimes C_R \text{ff} N_L \otimes \in L_F \frac{1}{3} N_L N_L C_R \in \frac{2}{3} V_T N_L \frac{5}{8} \frac{3}{8} N_L \frac{1}{3} \in - \frac{1}{8} C_R \frac{5}{8} \frac{1}{3} L_F \in - \otimes \square \text{ff}$
 $\in - \in N_L \in \frac{1}{3} N_L \in \oplus \frac{5}{8} L_F \frac{7}{8} C_R - 1 \oplus \frac{5}{8} \ominus \frac{0}{100} \frac{3}{8} C_R V_T \otimes \frac{3}{8} \frac{5}{8} \oplus \frac{5}{8} \ominus \frac{0}{100} \frac{1}{3} H_T N \frac{5}{8} - N_L \frac{1}{3} - \frac{3}{8}$
 $\frac{7}{8} \frac{1}{3} \oplus \frac{1}{3} C_R \frac{1}{3} \frac{2}{3} \frac{0}{100} \frac{5}{8} \otimes \frac{1}{3} \oplus \frac{5}{8} C_R - N \frac{5}{8} - N_L C_R \frac{5}{8} \otimes V_T \ominus \frac{0}{100} \frac{1}{3} N_L \in 1 - L_F P_t$ “ $L_F \frac{1}{3} C_R \frac{5}{8} L_F V_T \ominus \frac{0}{100} N_L \frac{17}{8}$
 $\frac{5}{8} N_L \frac{5}{8} - L_F \in \oplus \frac{5}{8} C_R \frac{5}{8} L_F \frac{5}{8} \frac{1}{3} C_R \frac{1}{8} \otimes \in - N_L \otimes L_F \frac{7}{8} \in \frac{5}{8} \ominus \frac{0}{100} \frac{3}{8} \otimes L_F \frac{5}{8} \oplus \frac{5}{8} C_R \frac{1}{3} \ominus \frac{0}{100}$
 $\in - - 1 \oplus \frac{1}{3} N_L \in \oplus \frac{5}{8} H_T C_R \frac{13}{8} V_T \frac{1}{8} N_L L_F \frac{1}{3} C_R \frac{5}{8} - 1 \text{ff} \in - \frac{3}{8} \frac{5}{8} \oplus \frac{5}{8} \ominus \frac{0}{100} \frac{1}{3} H_T N \frac{5}{8} - N_L \frac{1}{3} - \frac{3}{8} \frac{1}{3} C_R \frac{5}{8}$
 $\frac{5}{8} N_L H_T \frac{5}{8} \frac{1}{8} N_L \frac{5}{8} \frac{3}{8} N_L \frac{1}{3} \ominus \frac{0}{100} \frac{1}{3} V_T - \frac{1}{8} \otimes \in - N_L \ominus \frac{5}{8} \frac{7}{8} C_R \frac{5}{8} \frac{1}{8} \frac{1}{3} L_F N_L H_T \frac{5}{8} C_R \in \frac{13}{8} P_t \ominus \frac{5}{8} \text{ff}$
 $\frac{5}{8} - N_L C_R \frac{1}{3} - N_L L_F \in - N_L \otimes L_F L_F \frac{5}{8} \otimes N \frac{5}{8} - N_L \frac{1}{3} C_R \frac{5}{8} \frac{5}{8} N_L H_T \frac{5}{8} \frac{1}{8} N_L \frac{5}{8} \frac{3}{8} N_L \frac{1}{3} \frac{3}{8} C_R \in \oplus \frac{5}{8}$
 $N \frac{21}{3} C_R C_u \frac{5}{8} N_L \otimes C_R \text{ff} N_L \otimes P_t$

$\in C_R \in L_F \frac{5}{8} \in - \frac{3}{8} \frac{5}{8} N \frac{21}{3} - \frac{3}{8} \frac{7}{8} C_R N_L \frac{1}{3} C_R \ominus \frac{5}{8} N_L \frac{5}{8} \frac{3}{8} N_L \ominus \frac{5}{8} C_R \frac{1}{3} H_T \in \frac{5}{8} L_F \text{ff} \in N_L \otimes \otimes \otimes$
 $H_T \frac{1}{3} N_L \frac{5}{8} - \frac{1}{8} R_s$ “ $\blacksquare \pm \frac{1}{8} N \ominus H_T \frac{1}{3} V_T - \frac{3}{8} L_F \otimes L_F V_T \frac{1}{8} \otimes \frac{1}{3} L_F \text{ff} \blacksquare \pm \otimes \in L_F \frac{1}{3} - N_L \in \frac{1}{8} \in H_T \frac{1}{3} N_L \frac{5}{8} \frac{3}{8} N_L \frac{1}{3}$
 $\in - \frac{1}{8} C_R \frac{5}{8} \frac{1}{3} L_F \frac{5}{8} N_L \ominus \frac{5}{8} \frac{3}{8} \frac{5}{8} N \frac{21}{3} - \frac{3}{8} \frac{7}{8} C_R H_T \frac{5}{8} C_R L_F \frac{1}{3} - \frac{1}{3} \ominus \frac{0}{100} \in \text{MD} \frac{5}{8} \frac{3}{8} N \frac{25}{8} \frac{3}{8} \in \frac{1}{8} \in - \frac{5}{8} L_F P_t$
 $\ominus \frac{1}{3} C_R \in - L_F N_L \frac{1}{3} - \frac{1}{8} \frac{5}{8} \otimes$ “ $\leftarrow L_F \ominus \frac{0}{100} \frac{5}{8} \oplus \frac{5}{8} C_R \frac{1}{3} \otimes \frac{5}{8} N_L \ominus \frac{5}{8} L_F H_T \frac{5}{8} \frac{1}{8} \in \frac{7}{8} \in \frac{1}{8} \in N_L R_s \frac{17}{8}$
 $\frac{1}{3} - N_L \in \frac{2}{3} \frac{13}{8} \in \frac{5}{8} L_F \frac{7}{8} C_R \frac{1}{8} \frac{1}{3} - \frac{1}{8} \frac{5}{8} C_R \frac{1}{8} \frac{5}{8} \ominus \frac{0}{100} \frac{0}{100} L_F P_t \text{ff} \ominus \frac{5}{8} L_F \frac{5}{8} \frac{1}{8} \frac{5}{8} \ominus \frac{0}{100} \frac{0}{100} L_F V_T L_F \frac{5}{8}$
 $\ominus \frac{0}{100} \in - \ominus \frac{0}{100} \frac{5}{8} C_R N_L \frac{5}{8} \frac{1}{8} \otimes - \frac{1}{100} \frac{1}{100} R_s N_L \frac{1}{3} \frac{1}{3} N_L N_L \frac{1}{3} \frac{1}{8} \otimes N_L \ominus \frac{5}{8} N \frac{21}{3} L_F \frac{5}{8} \ominus \frac{0}{100} \oplus \frac{5}{8} L_F N_L \frac{1}{3} N_L \ominus \frac{5}{8}$
 $\frac{1}{3} - N_L \in \frac{2}{3} \frac{13}{8} R_s P_t \text{ff} \ominus \frac{5}{8} L_F \frac{5}{8} \frac{1}{3} \frac{3}{8} \oplus \frac{1}{3} - \frac{1}{8} \frac{5}{8} \frac{3}{8} \frac{7}{8} \frac{5}{8} \frac{1}{3} N_L V_T C_R \frac{5}{8} L_F \frac{17}{8}$ “ $\leftarrow L_F \frac{1}{3} C_R \frac{5}{8}$
 $\frac{1}{3} - N_L \in \frac{1}{8} \in H_T \frac{1}{3} N_L \frac{5}{8} \frac{3}{8} N_L \frac{1}{3} \frac{3}{8} C_R \in \oplus \frac{5}{8} N_L \ominus \frac{5}{8} N \frac{21}{3} C_R C_u \frac{5}{8} N_L \otimes \text{ff} \in N_L \otimes N \frac{21}{3} L_F N_L$
 $H_T \ominus \frac{1}{3} C_R N \frac{21}{3} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \ominus \frac{0}{100} \frac{1}{8} N \ominus H_T \frac{1}{3} - \in \frac{5}{8} L_F H_T V_T C_R L_F V_T \in - \otimes L_F V_T \frac{1}{8} \otimes$
 $\frac{3}{8} \frac{5}{8} \oplus \frac{5}{8} \ominus \frac{0}{100} \frac{1}{3} H_T N \frac{25}{8} - N_L H_T C_R \frac{1}{3} \otimes C_R \frac{1}{3} N \frac{21}{3} L_F P_t$

$\text{ff} \ominus \frac{5}{8} H_T \frac{1}{3} N_L \frac{5}{8} - N_L \frac{5}{8} N_L H_T \in C_R R_s \frac{17}{8} \frac{2}{3} C_R \frac{1}{3} - \frac{3}{8} \frac{5}{8} \frac{3}{8} N \frac{21}{3} \ominus \frac{0}{100} \frac{5}{8} \frac{1}{8} V_T \ominus \frac{0}{100} \frac{5}{8} L_F \in L_F \frac{1}{3}$
 $\ominus \frac{0}{100} R_s \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L \frac{1}{3} C_R N_L \ominus \frac{1}{3} N_L \frac{1}{8} \frac{1}{3} - \frac{2}{3} \frac{5}{8} \frac{1}{3} N_L N_L C_R \in \frac{2}{3} V_T N_L \frac{5}{8} \frac{3}{8} N_L \frac{1}{3} N_L \ominus \frac{5}{8} \ominus \frac{0}{100} V_T \frac{1}{8} C_R \frac{1}{3} N_L \in \oplus \frac{5}{8}$
 $\otimes C_R \text{ff} N_L \otimes \frac{17}{8} \otimes \frac{5}{8} - \frac{5}{8} C_R \in \frac{1}{8}$ “ $\blacksquare \pm \frac{3}{8} C_R V_T \otimes L_F P_t \text{ff} \ominus \frac{5}{8} \otimes \frac{5}{8} - \frac{5}{8} C_R \in \frac{1}{8} \frac{3}{8} C_R V_T \otimes N \frac{21}{3} C_R C_u \frac{5}{8} N_L \in L_F$
 $\frac{1}{3} - N_L \in \frac{1}{8} \in H_T \frac{1}{3} N_L \frac{5}{8} \frac{3}{8} N_L \frac{1}{3} \frac{5}{8} N \ominus \in \frac{2}{3} \in N_L \frac{1}{3} \otimes \otimes \otimes \otimes C_R \text{ff} N_L \otimes C_R \frac{1}{3} N_L \frac{5}{8} \in - \frac{1}{8} V_T - N_L C_R \in \frac{5}{8} L_F$
 $L_F V_T \frac{1}{8} \otimes \frac{1}{3} L_F - C_R \frac{1}{3} \text{MD} \ominus \frac{0}{100} \frac{1}{3} - \frac{3}{8} \pm - \frac{3}{8} \in \frac{1}{3} \otimes 1 \text{ff} \in - \otimes N_L \frac{1}{3} \otimes \otimes \otimes V_T - N \frac{25}{8} N_L$
 $\frac{1}{8} \ominus \frac{0}{100} \in - \in \frac{1}{8} \frac{1}{3} \ominus \frac{0}{100} - \frac{5}{8} \frac{5}{8} \frac{3}{8} L_F \frac{1}{3} - \frac{3}{8} \frac{1}{3} \frac{1}{8} \frac{1}{8} \frac{5}{8} H_T N_L \frac{1}{3} - \frac{1}{8} \frac{5}{8} \frac{17}{8} \blacksquare \text{ff} - \frac{3}{8} C_R V_T \otimes L_F P_t$

Application Insights

ff^{05/8} 1/8^{1/3} C_R^{3/8} ∈ 1 ⊕ 1/3 L^{1/8} V_T^{001/3} C_R 3/8 ∈ L^{5/81/3} L^{5/8} L^{5/8} ⊗ N^{05/8} - N_L 1/3^{1/81/8} V_T - N_L^{5/83/8} 7/8¹ C_R N_L^{05/8} 000^{1/3} C_R^{05/8} L^{5/8} N_L C_R^{5/8} ⊕ 5/8 - V_T^{5/8} L^{01/3} C_R^{5/8} 17/8 1/2^{1/2} P_T² C_{*} ∈ - 1/2^{1/2} 1/2^{1/2} P_T ff⁰ ∈ L^{5/8} ∈ L^{5/8} 1/3 N_L L_R ∈ 2/3 V_T N_L^{5/83/8} N_L¹ N_L^{05/8} ∈ - 1/8 C_R^{5/81/3} L^{5/8} ∈ - ⊗ H_T C_R^{5/8} ⊕ 1/3 00^{5/8} - 1/8^{5/8} 17/8 N_L^{1/3} C_R^{05/8} N_L 3/8 ∈ L^{5/81/3} L^{5/8} L^{5/8} W¹ C_R^{0003/8} W¹ ∈ 3/8^{5/8} P_T ffl^{1/3} C_R ∈ 1 V_T L^{5/8} 1 C_R^{01/3} ∈ - MD^{1/3} N_L ∈ 1 - L^{5/8} L^{5/8} V_T^{1/8} ⊗ 1/3 L^{5/8} N_L^{05/8} fl¹ C_R^{0003/8} †^{5/81/3} C_R N_L O^{5/83/85/8} C_R^{1/3} N_L ∈ 1 - L^{5/8} N_L^{05/8} fl¹ C_R^{0003/8} - N_L C_R^{105/8} ■ C_R^{01/3} ∈ - MD^{1/3} N_L ∈ 1 - L^{5/8} 1/3 - 3/8 N_L^{05/8} - N_L C_R^{105/8} “L^{5/8} L^{11/8} ∈ 1/3 N_L ∈ 1 - 1/3 C_R^{5/8} W¹ C_R^{05/8} ∈ - ⊗ N_L¹ W^{1/3} C_R^{3/8} ∈ - 1/8 C_R^{5/81/3} L^{5/8} ∈ - ⊗ 1/3 W^{1/3} C_R^{5/8} - 5/8 L^{5/8} L^{5/8} 1/3^{2/3} V_T N_L 1/8^{1/3} C_R^{3/8} ∈ 1 ⊕ 1/3 L^{1/8} V_T^{001/3} C_R 3/8 ∈ L^{5/81/3} L^{5/8} L^{5/8} P_T □¹ ⊕ 5/8 C_R - N^{05/8} - N_L ∈ - ∈ N_L ∈ 1/3 N_L ∈ ⊕ 5/8 L^{5/8} L^{5/8} V_T^{1/8} ⊗ 1/3 L^{5/8} N_L^{05/8} o^{1/3} N_L ∈ 1 - 1/3 00 - ⊗ 10^{005/8} L^{5/8} N_L^{5/8} C_R¹⁰⁰⁰ 3/8 V_T^{1/81/3} N_L ∈ 1 - ■ C_R¹⁰⁰ C_R^{1/3} N⁰ 1/3 C_R^{5/8} 1/3 ∈ N^{05/83/8} 1/3 N_L ∈ N⁰ H_T C_R¹ ⊕ ∈ - ⊗ 1/3 W^{1/3} C_R^{5/8} - 5/8 L^{5/8} L^{5/8} C_R^{5/8001/3} N_L^{5/83/8} N_L¹ 000 ∈ H_T ∈ 3/8 1/3 - 3/8 1/8^{010005/8} L^{5/8} N_L^{5/8} C_R¹⁰⁰⁰ Y^{5/80001/3} N_L^{5/83/8} 3/8 ∈ L^{5/81/3} L^{5/8} L^{5/8} P_T † ∈ ⊗ H_T C_R^{5/8} ⊕ 1/3 00^{5/8} - 1/8^{5/8} 1/3 - 3/8 ∈ - 1/8 C_R^{5/81/3} L^{5/8} ∈ - ⊗ 1/3 W^{1/3} C_R^{5/8} - 5/8 L^{5/8} L^{5/8} 1/3^{2/3} V_T N_L 1/8^{1/3} C_R^{3/8} ∈ 1 ⊕ 1/3 L^{1/8} V_T^{001/3} C_R 3/8 ∈ L^{5/81/3} L^{5/8} L^{5/8} 1/3 C_R^{5/8} 1/3 - N_L ∈ 1/8 ∈ H_T^{1/3} N_L^{5/83/8} N_L¹ 3/8 C_R ∈ ⊕ 5/8 N_L^{05/8} L^{5/8} ⊗ N^{05/8} - N_L 3/8 V_T C_R ∈ - ⊗ N_L^{05/8} 7/8¹ C_R^{5/81/81/3} L^{5/8} H_T^{5/8} C_R ∈ 13/8 L^{5/8} N_L⁰ V_T L^{5/8} 3/8 C_R ∈ ⊕ ∈ - ⊗ 3/8^{5/8} N^{01/3} - 3/8 7/8¹ C_R “■ † L^{5/8} 7/8¹ C_R 1/8^{1/3} C_R^{3/8} ∈ 1000¹⁰ R_S 3/8 C_R V_T⁰ L^{5/8} P_T

ff^{05/8} 1 - 1/8¹⁰⁰⁰¹⁰ R_S L^{5/8} ⊗ N^{05/8} - N_L ∈ L^{5/8} 1/3 - N_L ∈ 1/8 ∈ H_T^{1/3} N_L^{5/83/8} N_L¹ W¹ ∈ N_L - 5/8 L^{5/8} L^{5/8} ∈ ⊗ - ∈ 7/8 ∈ 1/8^{1/3} - N_L ⊗ C_R¹ W¹ N_L⁰ 17/8 ⊗ P_Tⁿ_{*} 3/8 V_T C_R ∈ - ⊗ N_L^{05/8} 7/8¹ C_R^{5/81/81/3} L^{5/8} N_L H_T^{5/8} C_R ∈ 13/8 P_T O^{1/31/8} N_L¹ C_R L^{5/8} V_T^{1/8} ⊗ 1/3 L^{5/8} 1/8^{01/3} - ⊗ ∈ - ⊗ 000 ∈ 7/8^{5/8} L^{5/8} N_L^{0005/8} L^{5/8} 1/3 - 3/8 N_L^{05/8} ⊗ C_R¹ W¹ ∈ - ⊗ H_T C_R^{5/8} ⊕ 1/3 00^{5/8} - 1/8^{5/8} 17/8 1/8^{1/3} - 1/8^{5/8} C_R 1/3 C_R^{5/8} 3/8 C_R ∈ ⊕ ∈ - ⊗ N_L^{05/8} N^{01/3} C_R^{05/8} N_L P_T ff^{05/8} ∈ - 1/8 C_R^{5/81/3} L^{5/8} ∈ - ⊗ 1/3^{3/8} H_T N_L ∈ 1 - 17/8 1/3 L^{5/83/85/8} - N_L^{1/3} C_R R_S 000 ∈ 7/8^{5/8} L^{5/8} N_L^{0005/8} ∈ L^{5/8} 3/8 C_R ∈ ⊕ ∈ - ⊗ N_L^{05/8} H_T C_R^{5/8} ⊕ 1/3 00^{5/8} - 1/8^{5/8} 17/8 ⊕ 1/3 C_R ∈ 1 V_T L^{5/8} N^{05/8} N_L^{1/32/3} 1000 ∈ 1/8 3/8 ∈ L^{5/81} C_R^{3/85/8} C_R L^{5/8} P_T †¹ C_R N⁰¹ - 1/3 00 ∈ N^{02/31/3} 000^{1/3} - 1/8^{5/8} ∈ L^{5/8} 1/3 ⊗ C_R¹ W¹ ∈ - ⊗ 1/8¹ - 1/8^{5/8} C_R - ∈ - N⁰¹ L^{5/8} N_L 1/8¹ V_T - N_L C_R ∈ 5/8 L^{5/8} P_T ff^{05/8} L^{5/83/8} ∈ L^{5/81} C_R^{3/85/8} C_R L^{5/8} ∈ - 1/8 000 V_T^{3/85/8} N_L⁰ R_S C_R¹ ∈ 3/8 1/3 - 3/8 L^{5/8} N_L ⊗¹ C_R N⁰¹ - 5/8 ∈ N^{02/31/3} 000^{1/3} - 1/8^{5/8} P_T R_S^{5/8} ⊕¹ N_L⁰ R_S C_R¹ N_L ∈ - 5/8 ∈ L^{5/8} 1/3 H_T¹ H_T V_T^{001/3} C_R “■ † V_T L^{5/83/8} N_L¹ N_L C_R^{5/81/3} N_L ⊗¹ R_S H_T¹ N_L⁰ R_S C_R¹ ∈ 3/8 ∈ L^{5/8} P_T †¹ C_R N⁰¹ - 1/3 00 N_L^{05/8} C_R^{1/3} H_T R_S ∈ L^{5/8} 17/8 ⊕ 1/3 C_R ∈ 1 V_T L^{5/8} N_L R_S H_T^{5/8} L^{5/8} 3/4 7/8¹ C_R H_T¹ L^{5/8} N^{05/8} - 1 H_T^{1/3} V_T L^{5/81/3} 00 W¹ N^{05/8} - L^{5/8} 7/8¹ C_R N^{05/8} - 1 - 1/8^{1/3} - 1/8^{5/8} C_R N_L C_R^{5/81/3} N_L N^{05/8} - N_L L^{5/8} 1/3 - 3/8 7/8¹ C_R 1/8⁰ ∈ 000^{3/8} C_R^{5/8} - N_L¹ 5/8 - 1/3^{2/3} 00^{5/8} H_T C_R¹ H_T^{5/8} C_R ⊗¹ C_R¹ W¹ N_L⁰ P_T “ C_R ∈ L^{5/8} ∈ - ⊗¹ C_R N⁰¹ - 5/8 Y^{3/85/8} H_T^{5/8} - 3/8^{5/8} - N_L 1/3 ⊗ ∈ - ⊗ H_T C_R^{12/3} 00^{5/8} N⁰ L^{5/8} ∈ L^{5/8} 1/3 000 L^{5/8} N_L H_T^{5/81/8} N_L^{5/83/8} N_L¹ 3/8 C_R ∈ ⊕ 5/8 N_L^{05/8} N^{01/3} C_R^{05/8} N_L P_T

■ $N_L^{05/8} R$ $3/8 \in L_F^{5/8 1/3} L_F^{5/8} L_F$ $L_F V_T^{1/8} \odot$ $1/3 L_F$ $3/8 \in 1/3 2/3 5/8 N_L \in 1/8$ $R^{5/8} N_L \in -1 H_T^{1/3} N_L \odot R_S$ $1/3 - 3/8$
 $N^{01/3 1/8} V_T^{00 1/3} R$ $3/8 5/8 \odot 5/8 - 5/8 R^{1/3} N_L \in 1 -$ $1/3 R^{5/8}$ $1/3 00 L_F^1$ $\odot R^1 W \in - \odot$ $\in -$
 $H_T R^{5/8} \oplus 1/3 00 5/8 - 1/8 5/8 \Omega$ $\in N^{01} H_T^{5/8 00 00} \in - \odot$ $N_L^{05/8}$ $3/8 5/8 N^{01/3 - 3/8}$ $7/8 L_F$ $\odot \in \odot \odot 00 R_S$
 $5/8 7/8 \in 1/8 \in 5/8 - N_L$ $1/3 - 3/8$ $1/8 L_F N_L \nabla 5/8 7/8 5/8 1/8 N_L \in \oplus 5/8$ $N^{05/8 3/8} \in 1/8 1/3 N_L \in 1 - L_F P_t$ $\in 1/3 2/3 5/8 N_L \in 1/8$
 $R^{5/8} N_L \in -1 H_T^{1/3} N_L \odot R_S$ $\in L_F$ $5/8 N^{01} H_T^{5/8 1/8} N_L^{5/8 3/8}$ N_L^1 $\in N^{01} H_T^{1/3 1/8} N_L$ $1 \oplus 5/8 R$ $\odot \alpha^3$ $N^{05/8 00 00} \in 1 -$
 $H_T^{5/8 1} H_T^{00 5/8}$ $2/3 R_S$ $1/2 \alpha^1 4^3 P_t$ $ff \odot \in L_F$ $\in L_F$ $5/8 N^{01} H_T^{5/8 1/8} N_L^{5/8 3/8}$ N_L^1 $2/3 11 L_F N_L$ $3/8 5/8 N^{01/3 - 3/8}$ $7/8 L_F$
 $2/3 1 N_L \odot$ $\odot 5/8 - 5/8 R \in 1/8$ $N^{05/8 3/8} \in 1/8 1/3 N_L \in 1 - L_F$ $1/3 - 3/8$ $\text{“} \nabla \nabla L_F P_t$

Type of Synthesis Insights

$ff \odot 5/8$ $L_F R_S - N_L^{05/8} N_L \in 1/8$ $\text{“} \nabla \nabla L_F^{5/8} \odot N^{05/8} - N_L$ $1/3 1/8 1/8 V_T - N_L^{5/8 3/8}$ $7/8 L_F$ $N_L^{05/8}$
 $00 1/3 R^{05/8} L_F N_L$ $R^{5/8} \oplus 5/8 - V_T^{5/8}$ $L_F \odot 1/3 R^{5/8}$ $17/8$ $\odot 1/2 P_t^{\alpha}$ $\in -$ $1/2 \alpha^1 2^0 P_t$ $ff \odot \in L_F$ $\in L_F$
 $1/3 N_L N_L R \in 2/3 V_T N_L^{5/8 3/8}$ N_L^1 $N_L^{05/8}$ $\odot \in \odot \odot 5/8 R$ $1/3 \oplus 1/3 \in 00 1/3 2/3 \in 00 \in N_L R_S$ $17/8$ $R^{1/3} W$
 $N^{01/3} N_L^{5/8} R \in 1/3 00 L_F$ $1/3 - 3/8$ $5/8 1/3 L_F \in 5/8 R$ $H_T R^{1/3} N_L^{11/8 10/00} L_F$ $7/8 L_F$ $N_L^{05/8}$ $L_F R_S - N_L^{05/8} L_F \in L_F$ $17/8$
 $N_L^{05/8} L_F^{5/8}$ $N^{01} 00 5/8 1/8 V_T^{00 5/8} L_F P_t$ $\bullet 1/3 - R_S$ $L_F R_S - N_L^{05/8} N_L \in 1/8$ $N^{01} 00 5/8 1/8 V_T^{00 5/8} L_F$ $1/3 R^{5/8}$
 $1/3 00 L_F^1$ $5/8 N^{01} H_T^{5/8 1/8} N_L^{5/8 3/8}$ N_L^1 $\odot 1$ $17/8 7/8 \nabla H_T^{1/3} N_L^{5/8} - N_L$ $\in -$ $N_L^{05/8}$ $1/8 1 N^{05/8} \in - \odot$ $R_S^{5/8 1/3} R L_F \Omega$
 $W \odot \in 1/8 \odot$ $\in L_F$ $1/3 - N_L \in 1/8 \in H_T^{1/3} N_L^{5/8 3/8}$ N_L^1 $2/3 11 L_F N_L$ $\odot R^1 W N_L \odot P_t$

$ff \odot 5/8$ $2/3 \in 1 N_L^{5/8 1/8} \odot$ $L_F^{5/8} \odot N^{05/8} - N_L$ $\in L_F$ $1/3 - N_L \in 1/8 \in H_T^{1/3} N_L^{5/8 3/8}$ N_L^1 $W \in N_L - 5/8 L_F L_F$
 $L_F \in \odot - \in 7/8 \in 1/8 1/3 - N_L$ $\odot R^1 W N_L \odot$ $17/8$ $\odot P_t^{\alpha}$ $3/8 V_T R \in - \odot$ $N_L^{05/8}$ $7/8 L_F^{5/8 1/8 1/3} L_F N_L$
 $H_T^{5/8} R \in 13/8 P_t$ $ff \odot \in L_F$ $L_F^{5/8} \odot N^{05/8} - N_L$ $\in L_F$ $3/8 R \in \oplus 5/8 -$ $2/3 R_S$ $7/8 1/3 1/8 N_L^1 R L_F$ $L_F V_T^{1/8} \odot$ $1/3 L_F$
 $\in - 1/8 R^{5/8 1/3} L_F \in - \odot$ $3/8 5/8 N^{01/3 - 3/8}$ $7/8 L_F$ $2/3 \in 1 H_T \odot 1/3 R N^{01/3 1/8 5/8} V_T N_L \in 1/8 1/3 00 L_F$ $1/3 - 3/8$ $N_L^{05/8}$
 $\odot \in \odot \odot 5/8 R$ $5/8 7/8 7/8 \in 1/8 \in 5/8 - 1/8 R_S$ $17/8$ $N_L^{05/8} L_F^{5/8}$ $N^{01} 00 5/8 1/8 V_T^{00 5/8} L_F P_t$ $\odot V_T R N_L^{05/8} R N^{01} R^{5/8} \Omega$
 $N_L^{05/8}$ $\odot R^1 W N_L \odot$ $17/8$ $N_L^{05/8}$ $2/3 \in 1 N_L^{5/8 1/8} \odot$ $L_F^{5/8} \odot N^{05/8} - N_L$ $1/8 1/3 -$ $2/3 5/8$ $1/3 N_L N_L R \in 2/3 V_T N_L^{5/8 3/8}$ N_L^1
 $\odot \in \odot \odot$ $\in - \oplus 5/8 L_F N_L^{05/8} - N_L L_F$ $\in -$ $N_L^{05/8}$ $2/3 \in 1 N_L^{5/8 1/8} \odot - 100 1^0 R_S$ $1/3 - 3/8$
 $2/3 \in 1 H_T \odot 1/3 R N^{01/3 1/8 5/8} V_T N_L \in 1/8 1/3 00$ $L_F^{5/8 1/8} N_L^1 R L_F P_t$ $ff \odot \in L_F$ $1/3 00 00 1^0 W L_F$ $N_L^{05/8}$
 $\in - - 1 \oplus 1/3 N_L \in 1 -$ $17/8$ $- 5/8 W$ $N^{01} 00 5/8 1/8 V_T^{00 5/8} L_F$ $N_L \odot 1/3 N_L$ $1/3 \in 3/8$ $\in -$ $N_L^{05/8}$
 $N_L R^{5/8 1/3} N_L^{05/8} - N_L$ $17/8$ $3/8 \in L_F^{5/8 1/3} L_F^{5/8} L_F \Omega$ $L_F V_T^{1/8} \odot$ $1/3 L_F$ $1/8 1/3 - 1/8 5/8 R P_t$ $ff \odot 5/8$ $\odot \in \odot \odot$
 $R^{5/8} \oplus 5/8 - V_T^{5/8}$ $17/8$ $2/3 \in 1 N_L^{5/8 1/8} \odot \nabla R^{5/8 00 1/3} N_L^{5/8 3/8}$ $\text{“} \nabla \nabla N^{01/3} c_u^{5/8} L_F$ $N_L^{05/8}$ $N^{01/3} R c_u^{5/8} N_L$
 $\odot \in \odot \odot 00 R_S$ $H_T R^{17/8} \in N_L^{1/3 2/3 00 5/8} \Omega$ $1/3 N_L N_L R^{1/3 1/8} N_L \in - \odot$ $N^{01/3} \% 1 R$ $H_T^{00 1/3} R_S^{5/8} R L_F P_t$ $\odot 1 R$
 $\in - L_F N_L^{1/3 - 1/8 5/8} \Omega$ $\nabla R^{100 00 5/8} V_T c_u \in -$ $j^{1/3} 00 3/8 5/8 L_F^{00 5/8} V_T c_u \in - \zeta$ $2/3 R_S$ $- 00 \in - \in \odot 5/8 - \Omega$ $\nabla - 1/8 P_t$
 $\in L_F$ $1/3$ $2/3 \in 100 1^0 \in 1/8 1/3 00$ $N_L^{05/8} R^{1/3} H_T R_S$ $7/8 L_F$ $N^{05/8} N_L^{1/3} L_F N_L^{1/3} N_L \in 1/8$ $R^{5/8} - 1/3 00$ $1/8 5/8 00 00$
 $1/8 1/3 R^{1/8} \in - 1 N^{01/3} P_t$

North America accounted for the largest revenue share of 38.80% in 2022 and is expected to maintain its lead over the forecast period. It is due to the rising incidence of cancer and other lifestyle-induced diseases, which stimulates R&D, thereby boosting the market.

Asia Pacific is anticipated to exhibit the fastest CAGR of 7.1% during the forecast period. The presence of economies such as China and India that the world relies on for the production of APIs at a lower cost is an advantage for the region. Increasing healthcare expenditure in the region is anticipated to fuel the market growth.

Europe is expected to witness significant growth during the forecast period. An increase in research funding and the local presence of key market players in this region is expected to drive the market. The number of biopharmaceutical companies is growing in Europe owing to increasing investments. For instance, in 2018, USD 20 billion was raised as an investment by the biopharma industry, which increased by 28% to USD 27.5 billion in 2019. Many key global players conduct their biopharmaceutical R&D in Europe.

Regional Insights

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Key Companies & Market Share Insights

The market for active pharmaceutical ingredients operates with high complexity. A blockbuster drug patent expiration, increasing outsourcing activities due to high manufacturing costs, and stringent regulations on the production of APIs are expected to maintain the competitive rivalry at a high level during the forecast period.

Many key players are focusing on launching new products to maintain their position in the market. $\text{O}^1\text{C}_R \in -\text{L}_F\text{N}_L^{1/3} - 1/8^{5/8}\text{E} \in -$ “ $\text{V}_T \otimes \text{V}_T \text{L}_F\text{N}_L^{1/2} \text{a}^{1/2} \text{e} \text{ff}^{5/8} \oplus 1/3$ $\blacksquare \otimes 1/3 \text{C}_R \text{N}^{2/3} 1/8^{5/8} \text{V}_T \text{N}_L \in 1/8^{1/3} 0/00 \quad 1/3 - 3/8 \quad \bullet \times \in - 5/8 0/00 0/00 \quad \text{C}_R^{5/8} 1/8^{5/8} \in \oplus 5/8^{3/8} \quad 1/3 \text{H}_T \text{H}_T \text{C}_R^{1/3} \oplus 1/3 0/00$ $7/8 \text{C}_R^{1/3} \text{N}^2 \quad \text{N}_L \otimes 5/8 \quad \text{ff} \text{P}_T - \text{O}, “ \quad 7/8^1 \text{C}_R \quad 1/3 \quad - 5/8 \text{W} \quad 3/8 \text{C}_R \text{V}_T \otimes \quad 1/3 \text{H}_T \text{H}_T 0/00 \in 1/8^{1/3} \text{N}_L \in 1 - \quad \text{N}_L^1 \quad \text{N}_L \text{C}_R^{5/8} 1/3 \text{N}_L$ $\text{L}_F^{1/8} \otimes \text{MD}^1 \text{H}_T \otimes \text{C}_R^{5/8} - \in 1/3 \text{P}_T \quad \bullet^1 \text{C}_R^{5/8} \oplus 5/8 \text{C}_R \text{E} \quad 0/00^{5/8} \otimes 1/3 0/00 \quad \in \text{L}_F \text{L}_F \text{V}_T^{5/8} \text{L}_F \quad 1/3 \text{C}_R^{5/8} \quad \text{L}_F 0/00^1 \text{W} \in - \otimes$ $3/8^1 \text{W} - \quad \text{N}_L \otimes 5/8 \quad 5/8 \text{L}_F \text{N}_L^{1/3} 2/3 0/00 \in \text{L}_F \otimes \text{N}^{2/8} - \text{N}_L \quad 17/8 \quad - 5/8 \text{W} \quad “ \text{H} \quad 7/8^{1/3} 1/8 \in 0/00 \in \text{N}_L \in 5/8 \text{L}_F \text{P}_T \quad \text{O}^1 \text{C}_R$ $\in - \text{L}_F \text{N}_L^{1/3} - 1/8^{5/8}\text{E} \in - \quad 1/2 \text{a}^{1/2} \text{a} \text{E} \quad \text{C}_R \text{P}_T \quad \text{a}^{5/8} 3/8^{3/8} \text{Rs} \text{S}_T \text{L}_F \quad \text{R}_X^{1/3} 2/3^1 \text{C}_R^{1/3} \text{N}_L^1 \text{C}_R \in 5/8 \text{L}_F \quad 1/3 - 3/8 \quad , 0/00 \in$ $\text{R}_X \in 0/00 \text{Rs} \quad 1/3 - 3/8 \quad - 1 \text{N}^2 \text{H}_T^{1/3} - \text{Rs} \quad 7/8^{1/3} 1/8^{5/8} 3/8 \quad \text{H}_T \text{C}_R^{12/3} 0/00^{5/8} \text{N}^2 \text{L}_F \quad \text{W} \in \text{N}_L \otimes \quad \text{N}_L \otimes 5/8 \quad \text{ff} \text{P}_T - \text{P}_T \quad \text{O}, “$ $7/8^1 \text{C}_R \quad \text{N}_L \otimes 5/8 \in \text{C}_R \quad “ \text{H} \quad \text{H}_T 0/00^{1/3} - \text{N}_L \text{L}_F \text{P}_T$

$\text{ff} \otimes 5/8 \quad \text{H}_T \text{C}_R^{5/8} \text{L}_F^{5/8} - 1/8^{5/8} \quad 17/8 \quad \text{H}_T \text{C}_R^{1/3} \text{N}^2 \in - 5/8 - \text{N}_L \quad \text{H}_T 0/00^{1/3} \text{Rs}^{5/8} \text{C}_R \text{L}_F \quad \in - \quad \text{N}_L \otimes \text{L}_F$ $\text{N}^{2/3} \text{C}_R \text{C}_U^{5/8} \text{N}_L \quad \text{L}_F \text{H}_T^{1/3} 1/8^{5/8} \quad \text{L}_F \in \otimes - \in 7/8 \in 1/8^{1/3} - \text{N}_L 0/00 \text{Rs} \quad 3/8 \in \text{N}^2 \in - \text{L}_F \otimes 5/8 \text{L}_F \quad \text{N}_L \otimes 5/8$ $1 \text{H}_T \text{H}_T^1 \text{C}_R \text{N}_L \text{V}_T - \in \text{N}_L \in 5/8 \text{L}_F \quad 7/8^1 \text{C}_R \quad 1/3 \quad - 5/8 \text{W} \quad 5/8 - \text{N}_L \text{C}_R \text{Rs} \quad \in - \text{N}_L^1 \quad \text{N}_L \otimes 5/8 \quad \text{N}^{2/3} \text{C}_R \text{C}_U^{5/8} \text{N}_L \text{E} \quad 1/3 \text{L}_F \quad \in \text{N}_L$ $\in \text{L}_F \quad 3/8 \in 7/8^{7/8} \in 1/8 \text{V}_T 0/00 \text{N}_L \quad \text{N}_L^1 \quad \text{N}^{2/3} \text{N}_L^{1/8} \otimes \quad \text{N}_L \otimes 5/8 \quad \otimes \in \otimes \otimes \quad 1/8^{1/3} \text{H}_T \in \text{N}_L^{1/3} 0/00$ $\text{C}_R^{5/8} \text{F}_F \text{V}_T \in \text{C}_R^{5/8} \text{N}^{2/8} - \text{N}_L \text{L}_F \text{P}_T \quad - 1 \text{N}^{2/8} \quad \text{H}_T \text{C}_R^{1/3} \text{N}^2 \in - 5/8 - \text{N}_L \quad \text{H}_T 0/00^{1/3} \text{Rs}^{5/8} \text{C}_R \text{L}_F \quad \in - \quad \text{N}_L \otimes 5/8 \quad \otimes 0/00^{12/3} 1/3 0/00$ $1/3^{1/8} \text{N}_L \in \oplus 5/8 \quad \text{H}_T \otimes 1/3 \text{C}_R \text{N}^{2/3} 1/8^{5/8} \text{V}_T \text{N}_L \in 1/8^{1/3} 0/00 \quad \in - \otimes \text{C}_R^{5/8} 3/8 \in 5/8 - \text{N}_L \text{L}_F \quad \text{N}^{2/3} \text{C}_R \text{C}_U^{5/8} \text{N}_L$ $\in - 1/8 0/00 \text{V}_T^{3/8} 5/8^{3/4}$

- $\bullet^{5/8} \text{C}_R^{1/8} \text{C}_U \quad \text{H} \quad - 1 \text{P}_T \text{E} \quad \text{H} - 1/8 \text{P}_T$
- “ $2/3^{2/3} \text{ff} \text{I} \in 5/8 \text{E} \quad \text{H} - 1/8 \text{P}_T$
- $-\text{C}_R \in \text{L}_F \text{N}_L^{1/3} 0/00 \text{Y} \bullet \text{Rs}^{5/8} \text{C}_R \text{L}_F \quad - \text{F}_F \text{V}_T \in 2/3^{2/3} \quad - 1 \text{N}^2 \text{H}_T^{1/3} - \text{Rs}$
- $- 15/8 \otimes \text{C}_R \in - \otimes 5/8 \text{C}_R \text{H} - \otimes 5/8 0/00 \otimes 5/8 \in \text{N}^2 \quad \text{H} - \text{N}_L^{5/8} \text{C}_R - 1/3 \text{N}_L \in 1 - 1/3 0/00 \quad \square \text{N}^{2/3} \text{H}$
- $-\in \text{H}_T 0/00^{1/3} \text{E} \quad \text{H} - 1/8 \text{P}_T$
- $\text{ff}^{5/8} \oplus 1/3 \quad \blacksquare \otimes 1/3 \text{C}_R \text{N}^{2/3} 1/8^{5/8} \text{V}_T \text{N}_L \in 1/8^{1/3} 0/00 \quad \text{H} - 3/8 \text{V}_T \text{L}_F \text{N}_L \text{C}_R \in 5/8 \text{L}_F \quad \text{R}_X \text{N}_L^{3/8} \text{P}_T$

- “%002/35/8N²¹/3_R0005/8 —1_RH_T1_R1/3_N€1—
- ffi€1/3_N€_R€_L€ ‡—1/8P_t
- “V_T€_R12/3€—3/81■©1/3_RN²¹/3
- —V_T— ■©1/3_RN²¹/31/85/8 V_TN_L€1/81/3%00 ‡—3/8 V_T€_RN_L€_R€5/8_L€ R_N3/8P_t
- <€_RP_t □5/83/83/8R_S’_L€ R_N1/32/31_R1/3_N1_R€_R€5/8_L€ R_N3/8P_t

Active Pharmaceutical Ingredients Market Scope

Report Attribute	Details
Market size value in 2023	ffi— 1/21/4®P _t ©® billion
□5/8⊕5/8—V _T 5/8 7/81 _R 5/81/81/3 _L € _N €— 1/2 ²¹ 1/4 ^a	ffi— 1/4 ²¹ 1/2P _t α© 2/3€%00%00€1—
□€ _R 1W _N ® □1/3 _N 5/8	—“□□ 17/8 2P _t α ^a * 7/8€ _R 1N ² 1/2 ²¹ 1/21/4 _N 1 1/2 ²¹ 1/4 ^a
—1/3 _L 5/8 R _S 5/81/3 _R 7/81 _R 5/8 _L € _N €N ²¹ /3 _N €1—	1/2 ²¹ 1/21/2
†€ _L € _R 1 _R €1/81/3%00 3/81/3 _N 1/3	1/2 ²⁰ α ¥ 1/2 ²¹ 1/2 ^o
○1 _R 5/81/81/3 _L € _N H _T 5/8€ _R €13/8	1/2 ²¹ 1/21/4 ¥ 1/2 ²¹ 1/4 ^a
□V _T 1/3—N _L € _N 1/3 _N €⊕5/8 V _T —€ _N € _L €	□5/8⊕5/8—V _T 5/8 €— ffi— 2/3€%00%00€1— 1/3—3/8 —“□□ 7/8€ _R 1N ² 1/2 ²¹ 1/21/4 _N 1 1/2 ²¹ 1/4 ^a
□5/8H _T 1 _R N _L 1/81⊕5/8€ _R 1/3⊕5/8	□5/8⊕5/8—V _T 5/8 7/81 _R 5/81/81/3 _L € _N € 1/81N ² H _T 1/3—R _S € _R 1/3—%u€—⊕£ 1/81N ² H _T 5/8N _L € _N €⊕5/8 %001/3—3/8 _L € _R 1/81/3H _T 5/8€ ⊕€ _R 1W _N ® 7/81/31/8 _N 1 _R € _L € 1/3—3/8 _N € _R 5/8—3/8 _L €
—5/8⊕N ²⁵ /8—N _L € _L € _R 1/81⊕5/8€ _R 5/83/8	ffR _S H _T 5/8 17/8 _L € _R S—N _L ⊕5/8 _L € _L € _R _N € _R S H _T 5/8 17/8 N ²¹ /3—V _T 7/81/31/8 _N V _T € _R 5/8€ _R _N € _R S H _T 5/8€ 1/3H _T H _T %00€1/81/3 _N €1—£ € _R 5/8⊕€1—
□5/8⊕€1—1/3%00 _L € _R 1/81H _T 5/8	○1 _R N _L ® “N ²⁵ /8€ _R €1/81/33 >V _T € _R 1H _T 5/83 “ _L €€1/3 ■1/31/8€7/8€1/83 R _N 1/3 _N €— “N ²⁵ /8€ _R €1/81/33 ●,”
—1V _T —N _L € _R R _S _L € _R 1/81H _T 5/8	ffiP _t —P _t 3 —1/3—1/33/81/33 ffiP _t SMP _t 3 □5/8€ _R N ²¹ /3—R _S 3 ○€ _R 1/3—1/85/83 ‡ _N 1/3%00R _S 3 —H _T 1/3€—3 □V _T € _L €€1/33 ‡V _T —⊕1/3€ _R R _S € —⊕€—1/33 ‡—3/8€1/33 TM1/3H _T 1/3—3 —1V _T N _L ® SM1 _R 5/81/33 “V _T € _R N _L € _R 1/3%00€1/33 —€ _R 1/3MD€%003 “€ _R ⊕5/8—N _L €—1/33 ●5/8N _L €1/813 —1V _T N _L ® “7/8€ _R €1/81/33 ffi“3 —1/3V _T 3/8€ “€ _R 1/32/3€1/3
SM5/8R _S 1/81N ² H _T 1/3—€5/8 _L € _R H _T € _R 17/8€%005/83/8	●5/8€ _R 1/8%u ¶ —1P _t € ‡—1/8P _t 3 “2/32/3ffi€5/8€ ‡—1/8P _t 3 —€ _R € _L € _N 1%00¥●R _S 5/8€ _R € _L € —€ _R V _T €2/32/3 —1N ² H _T 1/3—R _S 3 —15/8⊕€ _R €—⊕5/8€ _R €—⊕5/8%00⊕5/8€N ² ‡—N _L 5/8€ _R —1/3 _N €1—1/3%00

	$\square N^{2/3} \dagger^3 \text{ ff}^{5/8} \oplus^{1/3} \blacksquare^{1/3} \text{C}_R N^{2/3} 1/8^{5/8} \text{V}_T \text{N}_L \in 1/8^{1/3} \%_0$ $\ddagger - 3/8 \text{V}_T \text{F}_N \text{C}_R \in 5/8 \text{F}_R \text{N}_L^{3/8} \text{P}_t^3 - \in \text{H}_T \%_0 1/3 \text{E} \ddagger - 1/8 \text{P}_t^3$ $"\%_0 2/3^{5/8} N^{2/3} \text{C}_R \%_0 5/8 - 1 \text{C}_R \text{H}_T 1 \text{C}_R 1/3 \text{N}_L \in 1 - 3 \text{ffl} \in 1/3 \text{N}_L \text{C}_R \in \text{F}_R \ddagger - 1/8 \text{P}_t^3$ $"\text{V}_T \text{C}_R 12/3 \in - 3/8^{1/3} \blacksquare^{1/3} \text{C}_R N^{2/3} 1/3^3 - \text{V}_T - \blacksquare^{1/3} \text{C}_R N^{2/3} 1/8^{5/8} \text{V}_T \text{N}_L \in 1/8^{1/3} \%_0$ $\ddagger - 3/8 \text{V}_T \text{F}_N \text{C}_R \in 5/8 \text{F}_R \text{N}_L^{3/8} \text{P}_t^3 \text{C}_R \text{P}_t \text{ } \square^{5/8} 3/8^{3/8} \text{R}_S \text{F}_R$ $\text{R}_1^{3/3} 1 \text{C}_R 1/3 \text{N}_L 1 \text{C}_R \in 5/8 \text{F}_R \text{N}_L^{3/8} \text{P}_t$
$- \text{V}_T \text{F}_N \text{N}_L 1 \text{N}^2 \in \text{MD} 1/3 \text{N}_L \in 1 -$ $\text{F}_R 1/8^{1/3} \text{H}_T 5/8$	$\bigcirc \text{C}_R^{5/8} 5/8 \text{C}_R^{5/8} \text{H}_T 1 \text{C}_R \text{N}_L 1/8 \text{V}_T \text{F}_N \text{N}_L 1 \text{N}^2 \in \text{MD} 1/3 \text{N}_L \in 1 -$ $\text{i}^{5/8} \text{F}_R \text{V}_T \in \oplus^{1/3} \%_0 5/8 - \text{N}_L \text{N}_L 1 \text{V}_T \text{H}_T \text{N}_L 1 \text{ } \odot^{1/3} - 1/3 \%_0 \text{R}_S \text{F}_R \text{N}_L \text{F}_R \text{S}$ $\text{W}^{1/3} \text{C}_R \text{u} \in - \odot^{3/8} 1/3 \text{R}_S \text{F}_R \text{Z} \text{W} \in \text{N}_L \odot \text{H}_T \text{V}_T \text{C}_R 1/8 \odot 1/3 \text{F}_R 5/8 \text{P}_t "3/8^{3/8} \in \text{N}_L \in 1 -$ $1 \text{C}_R 1/3 \%_0 \text{N}_L^{5/8} \text{F}_R 1/3 \text{N}_L \in 1 - \text{N}_L 1/8^{1/3} \text{V}_T - \text{N}_L \text{C}_R \text{R}_S \text{E} \text{C}_R^{5/8} \odot \in 1 - 1/3 \%_0 \text{H}$ $\text{F}_R^{5/8} \odot \text{N}^{2/5} 5/8 - \text{N}_L \text{F}_R 1/8^{1/3} \text{H}_T 5/8 \text{P}_t$
$\blacksquare \text{C}_R \in 1/8 \in - \odot^{1/3} - 3/8$ $\text{H}_T \text{V}_T \text{C}_R 1/8 \odot 1/3 \text{F}_R^{5/8}$ $1 \text{H}_T \text{N}_L \in 1 - \text{F}_R$	$"\oplus^{1/3} \in \%_0 17/8 1/8 \text{V}_T \text{F}_N \text{N}_L 1 \text{N}^2 \in \text{MD}^{5/8} 3/8 \text{H}_T \text{V}_T \text{C}_R 1/8 \odot 1/3 \text{F}_R^{5/8} 1 \text{H}_T \text{N}_L \in 1 - \text{F}_R$ $\text{N}_L 1 \text{N}^{2/5} 5/8 \text{N}_L \text{R}_S 1 \text{V}_T \text{C}_R 5/8 \text{H}_T 1/3 1/8 \text{N}_L \text{C}_R^{5/8} \text{F}_R^{5/8} 1/3 \text{C}_R 1/8 \odot$ $- 5/8^{5/8} 3/8 \text{F}_R \text{P}_t \text{N} \text{H}_T \%_0 1 \text{C}_R^{5/8} \text{H}_T \text{V}_T \text{C}_R 1/8 \odot 1/3 \text{F}_R^{5/8} 1 \text{H}_T \text{N}_L \in 1 - \text{F}_R$

Global Active Pharmaceutical Ingredients Market Segmentation

$\text{ffl} \in \text{F}_R \text{C}_R^{5/8} \text{H}_T 1 \text{C}_R \text{N}_L 7/8 1 \text{C}_R^{5/8} 1/8^{1/3} \text{F}_R \text{N}_L \text{F}_R \text{C}_R^{5/8} \oplus^{5/8} - \text{V}_T^{5/8} \odot \text{C}_R 1 \text{W} \text{N}_L \odot^{1/3} \text{N}_L \text{N}_L^{2/5}$
 $\%_0 12/3 1/3 \%_0 \text{E} \text{C}_R^{5/8} \odot \in 1 - 1/3 \%_0 \text{E} 1/3 - 3/8 1/8^{1/3} \text{V}_T - \text{N}_L \text{C}_R \text{R}_S \%_0 5/8 \oplus^{5/8} \%_0 \text{F}_R 1/3 - 3/8 \text{H}_T \text{C}_R 1 \oplus \in 3/8^{5/8} \text{F}_R$
 $1/3 - 1/3 - 1/3 \%_0 \text{R}_S \text{F}_R \in \text{F}_R 17/8 \text{N}_L^{2/5} \%_0 1/3 \text{N}_L^{5/8} \text{F}_R \text{N}_L \in - 3/8 \text{V}_T \text{F}_N \text{C}_R \text{R}_S \text{N}_L \text{C}_R^{5/8} - 3/8 \text{F}_R 1/3 - 3/8$
 $1 \text{H}_T \text{H}_T 1 \text{C}_R \text{N}_L \text{V}_T - \in \text{N}_L \in 5/8 \text{F}_R \in - 5/8^{1/3} 1/8 \odot 17/8 \text{N}_L^{2/5} \text{F}_R \text{V}_T 2/3 \text{F}_R^{5/8} \odot \text{N}^{2/5} 5/8 - \text{N}_L \text{F}_R 7/8 \text{C}_R 1 \text{N}^2 1/2^{2/2} \text{N}_L 1$
 $1/2^{2/4} \text{P}_t \bigcirc 1 \text{C}_R \text{N}_L \odot \in \text{F}_R \text{F}_R \text{N}_L \text{V}_T 3/8 \text{R}_S \text{E} \square \text{C}_R 1/3 - 3/8 \text{ffl} \in 5/8 \text{W} \odot^{5/8} \text{F}_R^{5/8} 1/3 \text{C}_R 1/8 \odot \odot^{1/3} \text{F}_R$
 $\text{F}_R^{5/8} \odot \text{N}^{2/5} 5/8 - \text{N}_L^{5/8} 3/8 \text{N}_L^{2/5} \odot \%_0 12/3 1/3 \%_0 1/3 1/8 \text{N}_L \in \oplus^{5/8} \text{H}_T \odot^{1/3} \text{C}_R N^{2/3} 1/8^{5/8} \text{V}_T \text{N}_L \in 1/8^{1/3} \%_0$
 $\in - \odot \text{C}_R^{5/8} 3/8 \in 5/8 - \text{N}_L \text{F}_R \text{N}^{2/3} \text{C}_R \text{u}^{5/8} \text{N}_L \text{C}_R^{5/8} \text{H}_T 1 \text{C}_R \text{N}_L 2/3 1/3 \text{F}_R^{5/8} 3/8 1 - \text{N}_L^{2/5} \text{N}_L \text{R}_S \text{H}_T^{5/8} 17/8$
 $\text{F}_R \text{R}_S - \text{N}_L^{2/5} 5/8 \text{F}_R \in \text{F}_R \text{E} \text{N}_L \text{R}_S \text{H}_T^{5/8} 17/8 \text{N}^{2/3} - \text{V}_T 7/8 1/3 1/8 \text{N}_L \text{V}_T \text{C}_R^{5/8} \text{F}_R \text{E} \text{N}_L \text{R}_S \text{H}_T^{5/8} \text{E}$
 $1/3 \text{H}_T \text{H}_T \%_0 \in 1/8^{1/3} \text{N}_L \in 1 - \text{E} 1/3 - 3/8 \text{C}_R^{5/8} \odot \in 1 - 3/4$

Type of Synthesis Outlook

- $- \in 1 \text{N}_L^{5/8} 1/8 \odot$
 - $- \in 1 \text{N}_L^{5/8} 1/8 \odot " \blacksquare \ddagger \text{F}_R \bullet^{1/3} \text{C}_R \%_0^{5/8} \text{N}_L \text{E} - \text{R}_S \text{ffR}_S \text{H}_T^{5/8}$
 - $\square^{5/8} - 5/8 \text{C}_R \in 1/8 " \blacksquare \ddagger \text{F}_R$
 - $\ddagger - - 1 \oplus^{1/3} \text{N}_L \in \oplus^{5/8} " \blacksquare \ddagger \text{F}_R$
 - $- \in 1 \text{N}_L^{5/8} 1/8 \odot " \blacksquare \ddagger \text{F}_R \bullet^{1/3} \text{C}_R \%_0^{5/8} \text{N}_L \text{E} - \text{R}_S \blacksquare \text{C}_R^{1/3} 3/8 \text{V}_T 1/8 \text{N}_L$
 - $\bullet^{1/3} - 11/8 \%_0 1 - 1/3 \%_0 " - \text{N}_L \in 2/3^{1/3} 3/8 \in 5/8 \text{F}_R$

- $\uparrow 1^{\circ} R N^{01-5/8} L_F$
- $-R_S N_L^{1\%} \in -5/8 L_F$
- $\square^{5/8} 1/8 1 N^{02/3} \in -1/3 - N_L \quad \blacksquare C_R 1 N_L^{5/8} \in -L_F$
- $ff^{05/8} C_R 1/3 H_T^{5/8} V_T N_L \in 1/8 \quad \rightarrow -M D R_S N^{05/8} L_F$
- $ffl 1/3 1/8 1/8 \in -5/8 L_F$
- $-0_{00} 113/8 \quad \bigcirc 1/3 1/8 N_L 1^{\circ} C_R L_F$
- $-R_S - N_L^{05/8} N_L \in 1/8$
 - $-R_S - N_L^{05/8} N_L \in 1/8 \quad \text{"}\blacksquare L_F \quad \bullet 1/3 C_R^{05/8} N_L \in -R_S \quad ff R_S H_T^{5/8}$
 - $\square^{5/8} -5/8 C_R \in 1/8 \quad \text{"}\blacksquare L_F$
 - $\ddagger - -1 \oplus 1/3 N_L \in \oplus^{5/8} \quad \text{"}\blacksquare L_F$

Type of Manufacturer Outlook

- $-1/3 H_T N_L \in \oplus^{5/8} \quad \text{"}\blacksquare L_F$
- $\bullet^{5/8} C_R 1/8 \ominus 1/3 - N_L \quad \text{"}\blacksquare L_F$
 - $\bullet^{5/8} C_R 1/8 \ominus 1/3 - N_L \quad \text{"}\blacksquare L_F \quad \bullet 1/3 C_R^{05/8} N_L \in -R_S \quad ff R_S H_T^{5/8}$
 - $\square^{5/8} -5/8 C_R \in 1/8 \quad \text{"}\blacksquare L_F$
 - $\ddagger - -1 \oplus 1/3 N_L \in \oplus^{5/8} \quad \text{"}\blacksquare L_F$
 - $\bullet^{5/8} C_R 1/8 \ominus 1/3 - N_L \quad \text{"}\blacksquare L_F \quad \bullet 1/3 C_R^{05/8} N_L \in -R_S \quad ff R_S H_T^{5/8} \quad 17/8 \quad -R_S - N_L^{05/8} L_F \in L_F$
 - $-\in N_L^{5/8} 1/8 \ominus$
 - $-R_S - N_L^{05/8} N_L \in 1/8$
- $ff R_S H_T^{5/8} \quad \blacksquare V_T N_L^{000} 11\%$
- $\square^{5/8} -5/8 C_R \in 1/8 \quad \text{"}\blacksquare L_F$
- $\ddagger - -1 \oplus 1/3 N_L \in \oplus^{5/8} \quad \text{"}\blacksquare L_F$
 - $ff R_S H_T^{5/8} \quad 17/8 \quad \langle C_R V_T \ominus$
- $\blacksquare C_R^{5/8} L_F 1/8 C_R \in H_T N_L \in 1 - \langle C_R V_T \ominus L_F$
- $\blacksquare \oplus^{5/8} C_R \nmid N_L^{05/8} \nmid 1/8 1 V_T - N_L^{5/8} C_R \quad \langle C_R V_T \ominus L_F$

Application Outlook

- $-\frac{1}{3}F_R \frac{3}{8} \in 1 \oplus \frac{1}{3}L_F \frac{1}{8} V_T \frac{0}{100} \frac{1}{3} F_R \in L_F \frac{5}{8} \frac{1}{3} L_F \frac{5}{8} L_F$
- $\blacksquare -\frac{1}{8} \frac{1}{100} 1 \otimes R_s$
- $-\ominus -\frac{1}{3} - \frac{3}{8} \ominus \frac{5}{8} V_T F_R \frac{1}{100} 1 \otimes R_s$
- $\blacksquare F_R N_L \otimes 1 H_T \frac{5}{8} \frac{3}{8} \in \frac{1}{8}$
- $\succ -\frac{3}{8} \frac{1}{18} F_R \in -\frac{1}{100} 1 \otimes R_s$
- $\blacksquare V_T \frac{0}{100} N^{\otimes 1} - \frac{1}{100} 1 \otimes R_s$
- $\square \frac{1}{3} L_F N_L F_R \frac{15}{8} - N_L \frac{5}{8} F_R \frac{1}{100} 1 \otimes R_s$
- $\ominus \frac{5}{8} H_T \otimes F_R \frac{1}{100} 1 \otimes R_s$
- $\blacksquare H_T \otimes N_L \otimes \frac{1}{3} \frac{0}{100} N^{\otimes 1} \frac{1}{100} 1 \otimes R_s$
- $\blacksquare N_L \otimes \frac{5}{8} F_R L_F$

Regional Outlook

- $\ominus 1 F_R N_L \otimes "N^{\otimes 5} F_R \in \frac{1}{8} \frac{1}{3}$
 - $ff i P_t - P_t$
 - $-\frac{1}{3} - \frac{1}{3} \frac{3}{8} \frac{1}{3}$
- $\succ V_T F_R 1 H_T \frac{5}{8}$
 - $ff i P_t^{SMP_t}$
 - $\square \frac{5}{8} F_R N^{\otimes 1} \frac{1}{3} - R_s$
 - $\bigcirc F_R \frac{1}{3} - \frac{1}{8} \frac{5}{8}$
 - $\mp N_L \frac{1}{3} \frac{0}{100} R_s$
 - $-H_T \frac{1}{3} \in -$
 - $\square V_T L_F L_F \in \frac{1}{3}$
 - $\dagger V_T - \otimes \frac{1}{3} F_R R_s$

- “ $L_F \in 1/3$ ■ $1/3^{1/8} \in 7/8 \in 1/8$
 - $TM_{1/3}^{H_T} 1/3 -$
 - $- \odot \in -1/3$
 - $\ddagger - 3/8 \in 1/3$
 - $-1^V T N_L \odot SM^1 C_R^{5/8} 1/3$
 - “ $V_T L_F N_L C_R 1/3 \% \in 1/3$
- $R_{1/3} N_L \in -$ “ $N^{95/8} C_R \in 1/8^{1/3}$
 - $- C_R 1/3^{MD} \in \%$
 - $\bullet^{5/8} N \in 1/8^1$
 - “ $C_R \odot^{5/8} - N_L \in -1/3$
- $\bullet \in 3/8^{3/8} \% \odot^{5/8} \rangle^{1/3} L_F N_L \nmid$ “ $7/8 C_R \in 1/8^{1/3}$
 - $-1^V T N_L \odot$ “ $7/8 C_R \in 1/8^{1/3}$
 - $ffi“\rangle$
 - $-1/3^V T^{3/8} \in$ “ $C_R 1/3^{2/3} \in 1/3$
 - $\rangle \odot R_S^{H_T} N_L$
 - $\ddagger L_F C_R 1/3^{5/8} \%$

API in India

The Indian Bulk drug industry or the Active Pharmaceutical Industry is dominated by Chinese players. Companies such as Sun Pharma, Aurobindo Pharma, Laurus Labs, Divis, Jubilant Lifesciences, Biocon are leaders in APIs when one sees the domestic manufacturing for the APIs. However, the quantity is extremely small and only meets about 10–25% of their requirement.

ff^{5/8} “■‡ N^{21/3}R^{5/8}N_L ∈_L F_VT_R⊙∈−[⊙] 3/8V_T^{5/8} N_L¹ N_L^{⊙5/8} ∈−1/8F_R^{5/8}1/3F^{5/8}3/8 3/8^{5/8}N^{21/3}−3/8 7/81F_R H_T⊙1/3F_RN^{21/3}1/8^{5/8}V_TN_L∈1/81/3[⊙] 3/8F_VT_⊙L_F⊙ W[⊙]∈1/8[⊙] ∈− N_LV_TF_R− ∈_L 3/8F_R∈[⊙]5/8− 2/3Rs N_L^{⊙5/8} 1/3⊙∈−[⊙] H_T1H_TV_T⊙^{1/3}N_L∈1−_L F_R∈_LF_R∈−[⊙] H_TF_R^{5/8}⊙1/3[⊙]⊙^{5/8}−1/8^{5/8} 17/8 1/8[⊙]F_R1−∈1/8 3/8∈_LF_V^{5/8}1/3F^{5/8}L_F F_VT_{1/8}[⊙] 1/3L_F 1/81/3−1/8^{5/8}F_R⊙ 3/8∈1/32/3^{5/8}N_L^{5/8}L_F⊙ 1/81/3F_R3/8∈1[⊙]1/3L_F1/8V_T⊙^{1/3}F_R⊙ −5/8V_TF_R1[⊙]⊙^{1/8}1/3[⊙] 1/3−3/8 ∈−7/8^{5/8}1/8N_L∈1V_TL_F 3/8∈_LF_V^{5/8}1/3L_F^{5/8}L_FP_t ‡−3/8∈1/3 1/3−3/8 −[⊙]∈−1/3 1/3F_R^{5/8} N_L^{⊙5/8} N^{21/3}⊙¹F_R F_VT_HT_⊙⊙^{5/8}F_RL_F 17/8 “■‡L_F N_L¹ ⊙1F_RN_L[⊙] “N^{25/8}F_R∈1/81/3 3/8V_T^{5/8} N_L¹ N_L^{⊙5/8}∈_R ⊙¹W[⊙] H_TF_R13/8V_T1/8N_L∈1− 1/81/3H_T1/31/8∈N_L∈^{5/8}L_F⊙ ⊙^{1/3}2/3¹F_R 1/81L_FN_LL_F 1/3−3/8 N_L^{⊙5/8} H_TF_R^{5/8}L_F^{5/8}−1/8^{5/8} 17/8 1/3 ⊙^{1/3}⊙¹F_R^{⊙5/8} −V_TN^{22/3}5/8F_R 17/8 ⊙^{1/3}⊙^{12/3}1/3[⊙] 1/3−3/8 3/81N^{25/8}L_FN_L∈1/8 H_T⊙^{1/3}Rs^{5/8}F_RL_FP_t ‡− 1F_R3/8^{5/8}F_R N_L¹ 1/8V_TN_L 3/81W[⊙]− 1− 5/8N¹H_T^{5/8}−L_F^{5/8}L_F 1/3−3/8 ∈−1/8F_R^{5/8}1/3L_F^{5/8} H_TF_R17/8∈N_LL_F⊙ 1/81N²H_T1/3−∈^{5/8}L_F ⊙1/3[⊙]5/8 2/3^{5/8}⊙V_T− 1V_TN_LL_F1V_TF_R1/8∈−[⊙] N_L^{⊙5/8} 1/8F_R^{5/8}1/3N_L∈1− 17/8 “■‡L_F N_L¹ N_L^{⊙5/8} 3/8^{5/8}⊙^{5/8}⊙¹H_T∈−[⊙] 1/81V_T−N_LF_R∈^{5/8}L_F ∈− “L_F∈1/3_L ⊙^{1/3}⊙^{5/8}1/33/8∈−[⊙] N_L¹ ⊙F_R1W[⊙]N_L[⊙] ∈− N_L^{⊙5/8} “L_F∈1/3− N^{21/3}F_R⊙^{5/8}N_LP_t ff^{5/8} L_F1/37/8^{5/8}N_LRs 17/8 N^{25/8}3/8∈1/81/3N_L∈1− “■‡L_F 1/3F_R^{5/8} L_FV_T2/3[⊙]5/81/8N_L N_L¹ L_FN_LF_R∈−[⊙]5/8−N_L F_R^{5/8}⊙V_T⊙^{1/3}N_L∈1−L_F 1/3−3/8 1[⊙]5/8F_RL_F∈[⊙]⊙N_L 7/8F_R1N[⊙] N_L^{⊙5/8} 1/81V_T−N_LF_RRs N_L^{⊙5/8}Rs 1/3F_R^{5/8} L_F⊙∈H_TH_T^{5/8}3/8 N_L¹P_t ff^{5/8}⊙1/3 ⊙^{1/3}F_RN^{21/3}1/8^{5/8}V_TN_L∈1/81/3[⊙]L_F R_∈N[⊙]∈N_L^{5/8}3/8_L −V_T− ■[⊙]1/3F_RN^{21/3}1/8^{5/8}V_TN_L∈1/81/3[⊙]L_F ‡−3/8V_TL_FN_LF_R∈^{5/8}L_F R_∈N[⊙]∈N_L^{5/8}3/8_L ′F_RP_t ⊙^{5/8}3/8^{3/8}Rs′L_F R_{1/3}2/3¹F_R1/3N_L1F_R∈^{5/8}L_F R_N^{3/8}P_t⊙ 1/3−3/8 “V_TF_R12/3∈−3/8¹ 1/3F_R^{5/8} L_F1N^{25/8} ⊙^{5/8}Rs H_T⊙^{1/3}Rs^{5/8}F_RL_F ∈− N_L^{⊙5/8} N^{21/3}F_R⊙^{5/8}N_LP_t

■[⊙]1/3F_RN^{21/3} 1/81N²H_T1/3−∈^{5/8}L_F ∈−N_L^{5/8}F_R^{5/8}L_FN_L^{5/8}3/8 ∈− N^{21/3}−V_T7/81/31/8N_LV_TF_R∈−[⊙] “■‡L_F W[⊙]∈N_L[⊙] L_FV_TH_TH_T1F_RN_L 7/8F_R1N[⊙] ⊙1[⊙]5/8F_R−N^{25/8}−N_L’

■W[⊙]− F_R^{5/8}H_T1F_RN_L L_F1/3RsL_F 2^a* 17/8 1/8F_R∈N_L∈1/81/3[⊙] 1/31/8N_L∈[⊙]5/8 H_T⊙1/3F_RN^{21/3}1/8^{5/8}V_TN_L∈1/81/3[⊙] ∈−[⊙]F_R^{5/8}3/8∈^{5/8}−N_LL_F 1/3F_R^{5/8} ∈N²H_T1F_RN_L^{5/8}3/8P_t ⊙F_R1N[⊙] 2/3V_T⊙^{1/3}⊙^{1/3}3/8F_RV_T⊙ H_T1/3F_R⊙L_F N_L¹ 1/31/8N_L∈[⊙]5/8 H_T⊙1/3F_RN^{21/3}1/8^{5/8}V_TN_L∈1/81/3[⊙] ∈−[⊙]F_R^{5/8}3/8∈^{5/8}−N_L j“■‡ 1/8[⊙]⊙V_TL_FN_L^{5/8}F_RL_F⊙ N_L^{⊙5/8} H_T⊙1/3F_RN^{21/3} ∈−3/8V_TL_FN_LF_RRs ⊙1/3L_F 2/3^{5/8}5/8− ⊙^{5/8}1/3F_R∈−[⊙] 17/8 L_FV_T1/8[⊙] ∈3/8^{5/8}1/3L_F 2/3^{5/8}∈−[⊙] 7/8[⊙]⊙^{11/3}N_L^{5/8}3/8 7/81F_R N^{21/3}−Rs Rs^{5/8}1/3F_RL_F −1W[⊙]P_t −V_TN_L N_L^{⊙5/8} −5/8N_L N_L⊙F_R^{5/8}5/8 N_L¹ 7/8∈[⊙]5/8 Rs^{5/8}1/3F_RL_F 1/81V_T⊙^{1/3}3/8 ∈−3/8^{5/8}5/8^{3/8} L_F^{5/8}5/8 1/3− ∈N²H_T1F_R1[⊙]5/8N^{25/8}−N_L 1− N_L^{⊙5/8} H_TF_R13/8V_T1/8N_L∈1− 17/8 “■‡L_F ∈7/8 N_L^{⊙5/8} −5/8−N_LF_R^{5/8} ∈N²H_T⊙^{1/3}⊙^{5/8}N^{25/8}−N_LL_F ∈N_LL_F H_T1[⊙]⊙^{1/8}∈^{5/8}L_F⊙ L_F1/3RsL_F −V_T⊙^{1/3}Rs −[⊙]5/8N_LN_LRs⊙ ■W[⊙]− ‡−3/8∈1/3 ■1/3F_RN_L−5/8F_R ¥ ‡^{5/8}1/3[⊙]N_L[⊙] ‡−3/8V_TL_FN_LF_R∈^{5/8}L_FP_t

“ff^{05/8} C_R^{5/8} ∈ L_F ^{05/8} - V_T ∈ -^{5/8} ∈ - N_L^{5/8} C_R^{5/8} L_F N_L ^{2/3} ^{5/8} ∈ - ⁰ L_F ⁰¹ W - ^{2/3} R_S H_T ^{01/3} C_R N^{21/3}
1/8¹ N⁰¹ H_T ^{1/3} - ∈ ^{5/8} L_F H_T ¹ ∈ L_F ^{5/8} ^{3/8} N_L ¹ ⁰¹ ∈ - N_L ¹ ^{2/3} ^{1/3} ^{1/8} C_R ^{1/3} C_R ^{3/8} ∈ - N_L ^{5/8} ⁰ C_R ^{1/3} N_L ∈ - 1 - 1”
- ^{05/8} N_L N_L R_S N_L ¹⁰⁰ ^{3/8} - V_T L_F ∈ - ^{5/8} L_F L_F R_S ∈ - ^{5/8} 1 H_T N_L ∈ N⁰ ∈ L_F N_L ∈ ^{1/8} N_L ^{01/3} N_L N_L ^{05/8} ^{1/8} N⁰ ∈ - ⁰
R_S ^{5/8} ^{1/3} C_R L_F W¹ V_T ⁰⁰ ^{3/8} L_F ^{5/8} ^{5/8} N²¹ C_R ^{5/8} “■ L_F ^{7/8} ¹ C_R ^{1/8} C_R ∈ N_L ∈ ^{1/8} ^{1/3} ⁰⁰ N²⁵ ^{5/8} ^{3/8} ∈ ^{1/8} ∈ - ^{5/8} L_F
^{2/3} ^{5/8} ∈ - ⁰ N²¹ ^{1/3} ^{3/8} ^{5/8} ∈ - ■ L_F ∈ ^{1/3} P_T “□ ⁰ ^{5/8} C_R - N²⁵ ^{5/8} - N_L ∈ - N_L ^{5/8} C_R ⁰ ^{5/8} - N_L ∈ - 1 - ∈ L_F
C_R ^{5/8} F_T V_T ∈ C_R ^{5/8} ^{3/8} ^{7/8} ¹ C_R ⁰⁰ ^{1/3} - ^{3/8} 1 H_T W⁵ ^{5/8} C_R ^{1/3} - ^{3/8} 1 N_L ^{05/8} C_R L_F ^{01/3} C_R ^{5/8} ^{3/8}
V_T N_L ∈ ⁰⁰ ∈ N_L ∈ ^{5/8} L_F L_F V_T ^{1/8} ⁰ ^{1/3} L_F ^{5/8} ^{7/8} ^{7/8} ⁰⁰ V_T ^{5/8} - N_L N_L C_R ^{5/8} ^{1/3} N_L N²⁵ ^{5/8} - N_L 1” ^{05/8} L_F ^{1/3} ∈ ^{3/8} 1
H_T ¹ ∈ - N_L ∈ - ⁰ N_L ¹ ^{7/8} ∈ - ^{1/3} - ^{1/8} ∈ ^{1/3} ⁰⁰ L_F V_T ^{2/3} L_F ∈ ^{3/8} ∈ ^{5/8} L_F 1 H_T C_R ∈ ^{1/8} ∈ - ⁰ L_F V_T H_T H_T ¹ C_R N_L ^{1/3} - ^{3/8}
1 N_L ^{05/8} C_R L_F ¹⁰⁰ V_T N_L ∈ - 1 - 1 V_T N_L ⁰⁰ ∈ - ^{5/8} ^{3/8} ^{2/3} R_S ■ W - ∈ - ^{1/3} C_R ^{5/8} H_T ¹ C_R N_L ¹ -
C_R ^{5/8} ⁰ ⁰ ⁰ ∈ - ⁰ N_L ^{05/8} “■ L_F ∈ - ^{3/8} V_T L_F N_L C_R R_S ∈ - N_L ∈ N²⁵ ^{5/8} L_F ^{17/8} - 1 ⁰ ^{3/8} ⁰ ⁰ P_T

ff^{05/8} C_R ^{5/8} H_T ¹ C_R N_L W¹ ^{1/3} L_F ^{3/8} ¹ - ^{5/8} ∈ - ● ^{1/3} C_R ^{1/8} ⁰ ⁰ “H_T C_R ∈ ⁰⁰ 1 L_F ^{1/3} R_S L_F - ^{05/8} N_L N_L R_S 1
W^{05/8} - N_L ^{05/8} - 1 ⁰ ^{3/8} ^{5/8} ^{7/8} ^{5/8} ^{1/8} N_L W¹ ^{1/3} L_F ^{5/8} ^{5/8} - 1 - N_L ^{05/8} L_F V_T H_T H_T ⁰⁰ R_S ^{1/3} - ^{3/8}
H_T C_R ∈ ^{1/8} ^{5/8} ^{17/8} “■ L_F P_T “- V_T N_L ^{1/3} ^{7/8} N_L ^{5/8} C_R N_L ^{05/8} R_S ^{1/3} ^{3/8} ^{1/3} ⁰ ∈ - ^{1/8} ∈ ^{3/8} ^{5/8} - N_L
^{01/3} H_T H_T ^{5/8} - ^{5/8} ^{3/8} j W ∈ N_L ⁰ - ⁰ ∈ - ^{1/3} 1 N_L ^{05/8} - ^{5/8} ^{5/8} ^{3/8} N_L ¹ ^{01/3} ⁰ ^{5/8} ^{1/3} ⁰⁰ ^{1/8} ^{1/3} ⁰⁰ ^{2/3} ^{1/3} L_F ^{5/8}
^{7/8} ¹ C_R “■ L_F ^{01/3} L_F ^{2/3} ^{5/8} ^{1/8} N²⁵ ^{5/8} N⁰ V_T ^{1/8} ⁰ N²¹ C_R ^{5/8} ∈ N⁰ H_T ¹ C_R N_L ^{1/3} - N_L 1” ^{05/8} L_F ^{1/3} ∈ ^{3/8} P_T

5/8 H_T 5/8 - 3/8 5/8 - N_L 1 - - ⁰ ∈ - ^{1/3}

ff^{05/8} C_R ^{5/8} H_T ¹ C_R N_L L_F ^{1/3} R_S L_F ^{3/4} “■ N_L ^{05/8} ^{1/8} V_T C_R C_R ^{5/8} - N_L ^{1/8} ¹ - N_L ^{5/8} N_L 1 N_L 1 ∈ ^{7/8} N_L ^{05/8}
L_F ∈ N_L V_T ^{1/3} N_L ∈ - ^{1/3} ⁰⁰ C_R ^{1/3} ⁰ ^{1/3} N_L ^{5/8} L_F 1 N_L ^{1/8} ^{1/3} - H_T ¹ N_L ^{5/8} - N_L ∈ ^{1/3} ⁰⁰ ⁰⁰ R_S ⁰⁰ ^{5/8} ^{1/3} ^{3/8} N_L ¹
H_T C_R ∈ ^{1/8} ^{5/8} ⁰ ¹⁰⁰ ^{1/3} N_L ∈ ⁰⁰ ∈ N_L R_S 1 N⁰ H_T ^{1/3} ^{1/8} N_L ^{5/8} N⁰ H_T ¹ C_R N_L L_F ^{7/8} ¹ C_R N²¹ L_F N_L H_T ^{01/3} C_R N^{21/3}
^{1/8} ¹ N⁰¹ H_T ^{1/3} - ∈ ^{5/8} L_F 1/3 - ^{3/8} V_T ⁰⁰ N_L ∈ N²¹ ^{1/3} N_L ^{5/8} ⁰⁰ R_S C_R ^{5/8} L_F V_T ⁰⁰ N_L ∈ - ^{5/8} L_F L_F ^{5/8} - N_L ∈ ^{1/3} ⁰⁰
N²⁵ ^{5/8} ^{3/8} ∈ ^{1/8} ∈ - ^{5/8} L_F ^{2/3} ^{5/8} ^{1/8} ¹ N⁰ ∈ - ⁰ V_T - ^{1/3} ^{7/8} ^{7/8} ¹ C_R ^{3/8} ^{1/3} ^{2/3} ⁰⁰ ^{5/8} ^{1/3} - ^{3/8} ∈ - ^{1/3} ^{1/8} ^{1/8} ^{5/8} L_F L_F ∈ ^{2/3} ⁰⁰ ^{5/8}
N_L ¹ H_T ^{5/8} ¹ H_T ⁰⁰ ^{5/8} P_T ■ V_T C_R ^{1/3} - ^{1/3} ⁰⁰ R_S L_F ∈ L_F ^{2/3} ^{1/3} L_F ^{5/8} ^{3/8} 1 - ^{1/8} C_R ∈ N_L ∈ ^{1/8} ^{1/3} ⁰⁰ “■ L_F
L_F ⁰¹ W L_F N_L ^{01/3} N_L ²¹ H_T ^{5/8} C_R ^{1/8} ^{5/8} - N_L ^{17/8} N_L ^{05/8} ^{1/8} C_R ∈ N_L ∈ ^{1/8} ^{1/3} ⁰⁰ “■ L_F ^{1/3} C_R ^{5/8} ^{2/3} ^{5/8} ∈ - ⁰
∈ N⁰ H_T ¹ C_R N_L ^{5/8} ^{3/8} ^{1/3} - ^{3/8} ^{1/3} ⁰⁰ N²¹ L_F N_L ^{1/3} ⁰⁰ ⁰⁰ N_L ^{05/8} ∈ N⁰ H_T ¹ C_R N_L L_F ^{1/3} C_R ^{5/8} ^{7/8} C_R ¹ N⁰
- ⁰ ∈ - ^{1/3} P_T”

ff^{5/8} -^{5/8}-N_L C_R^{5/8} 0^{1/3} L_F ∈ -^{1/8}^{5/8} 1⁸1^N^{25/8} 1^VT_N W ∈ N_L 1/3 H_T1000 ∈ 1/8Rs N_L¹
L_FV_TH_TH_T1_CR_N N_L^{5/8} H_TC_R1^{3/8}V_T1⁸N_L ∈ 1 - 17/8 “■ L_F ∈ W ∈ 1/8 1^VT_N000^{3/8} L_FV_TH_TH_T1_CR_N
3/8 C_RV_T 1⁸1^N^{25/8}1³- ∈ 5/8 L_F 000¹¹1¹ ∈ - 1^N N²¹1³1⁴5/8 N_L^{5/8}N² 7/8¹C_R N_L^{5/8} 1/8¹3¹H_TN_L ∈ ⊕^{5/8}
000¹¹1⁸1³000 N²¹1³C_R1⁴5/8 N_L 1³-3/8 5/8¹H_T1_CR_NL_F ∈ - 5/8 N_LN_LRs L_F1³ ∈ 3/8 P_t ‡ - 3/8 ∈ 1/3 0¹3³8
N_L^{5/8} L_F1⁴ ∈ 000000 L_F 7/8¹C_R ∈ N_L 2/3¹T_N 2/3⁵1⁸1³V_TL_F^{5/8} 17/8 1/3 H_T1000 ∈ 1/8Rs
7/8¹C_R1³N²⁵8 W¹1_CR_N N_L0¹3¹N_L W¹1_L - 1^N L_FV_TH_TH_T1_CR_N ∈ ⊕⁵8 5/8 L_F1³ ∈ 3/8 7/8¹C_RN_LV_T-5/8 L_F
1/80¹3- 5/83/8 P_t

‘R¹L_FN_L - 1^N²⁵8 N_L ∈ N_L ∈ ⊕⁵8 , 3/8⁵8’

“ L_F ∈ L_F ∈ - 7/8 ∈ 1/8¹3- N_L N_L¹ - 1^N5/8 N_L0¹3¹N_L N_L^{5/8} H_T5/8 C_R1⁸5/8- N_L1³0⁵8 17/8
“■ L_F ∈ N²⁵8 H_T1_CR_NL_F 7/8¹C_R1^N - 0 ∈ - 1/3 0¹3¹L_F L_FH_T ∈ 1/8⁵3/8 7/8¹C_R1^N 1/3¹C_R1^VT-3/8 2 H_T5/8 C_R
1/8⁵8- N_L ∈ - 2222 N_L¹ 1/3¹C_R1^VT-3/8 2 H_T5/8 C_R 1/8⁵8- N_L ∈ - 1/2222 H_TC_R ∈ N²¹1³C_R ∈ 000Rs
2/3¹3¹8¹4⁵8³8 2/3Rs 000¹3¹C_R0⁵8 L_F1⁸1³000⁵8 N²¹1³- V_T7/8¹3¹8 N_LV_TC_R ∈ - 0 ∈ - 1/8⁵8- N_L ∈ ⊕⁵8 L_F
1/3-3/8 L_FN_L1³N_L5/83/8 C_R ∈ ⊕⁵8- L_FV_T2/3 L_F ∈ 3/8 ∈ 5/8 L_F 17/87/8⁵8 C_R5/8³8 ∈ - - 0 ∈ - 1/3 N_L¹
H_TC_R1^N²¹N_L5/8 5/8¹H_T1_CR_NL_F ∈ ” N_L^{5/8} C_R5/8 H_T1_CR_N L_F1³ ∈ 3/8 P_t

‡ - 3/8 ∈ 1/3- “■ L_F N²¹1³- V_T7/8¹3¹8 N_LV_TC_R5/8 C_RL_F 000¹L_FN_L N_L^{5/8} ∈ C_R 1/8¹N²⁵8 N_L ∈ N_L ∈ ⊕⁵8
5/8³8⁵8 “ ∈ - N_L^{5/8} N²¹1³- V_T7/8¹3¹8 N_LV_TC_R5/8 17/8 “■ L_F 1/3 N_L N_L^{5/8} 000¹W⁵8 C_R 5/8-3/8 17/8
N_L^{5/8} L_FH_T5/8¹8 N_LC_RV_TN² 1/3-3/8 7/8⁵8 C_RN²⁵8- N_L1³N_L ∈ 1- N_L5/8¹8 1000¹0 ∈ 5/8 L_F N_L¹
1/8¹V_T- N_LC_R ∈ 5/8 L_F 000 ∈ 1/3 0 ∈ - 1/3 000¹3¹C_R0⁵8000Rs 1- 1/3¹8¹8¹V_T- N_L 17/8 7/8¹3¹8 N_L1_CR_L
000 ∈ 1/8 L_FN_LC_R ∈ 1/8 N_L5/8 C_R ∈ N²⁵8 H_T000⁵8 N²⁵8- N_L1³N_L ∈ 1- 17/8 H_T100000 V_TN_L ∈ 1- 1/8¹- N_LC_R1000
- 1_CR_N0¹L_F ∈ 000⁵8¹3³8 ∈ - 0 N_L¹ 0 ∈ 000⁵8 C_R 1/8¹L_FN_LL_F 17/8 N²¹1³- V_T7/8¹3¹8 N_LV_TC_R ∈ - 0 “■ L_F ∈ -
‡ - 3/8 ∈ 1/3 0 ∈ L_FL_FV_T5/8 L_F ∈ - ∈ - N_L5/8 C_RH_TC_R5/8 N_L1³N_L ∈ 1- 17/8 N_L^{5/8} C_RV_T 1_CR_N ∈ 1/8⁵8
- 1- N_LC_R1000 ■ C_R3/8⁵8 C_R j: ■ - ■ j: 1/2221/4 1- 7/8 ∈ - 1/3- 1/8 ∈ 1/3000 ∈ - 1/8⁵8- N_L ∈ ⊕⁵8 L_F
000 ∈ 1/8 000¹W⁵8 C_R N_L1³N_L 1/8⁵8¹3¹H_T5/8 C_R V_TN_L ∈ 000 ∈ N_L ∈ 5/8 L_F 1/3-3/8 000¹3¹-3/8
L_FV_T2/3 L_F ∈ 3/8Rs N_L¹ 000¹W⁵8 C_R 1/8¹3¹H_T5/8¹ C_R5/8 F_VT ∈ C_R5/8 N²⁵8- N_L 000¹3¹8¹ 17/8
000¹3¹C_R0⁵8 L_F1⁸1³000⁵8 N²⁵80¹3¹ H_T1³C_R1_L ∈ N_L¹ N²¹1³- V_T7/8¹3¹8 N_LV_TC_R5/8 2/3¹T_N000¹ 3/8 C_RV_T 1_CR_N
C_R5/8 H_T1_CR_NL_F ∈ 1/8¹000000¹3¹H_TL_F5/8 17/8 N_L^{5/8} 7/8⁵8 C_RN²⁵8- N_L1³N_L ∈ 1- ∈ - 3/8 V_TL_FN_LC_RRs ∈ -
‡ - 3/8 ∈ 1/3 0 N_L^{5/8} C_R5/8 H_T1_CR_NL_Pt

API Manufacturers in India

ff“■‡

ff“■‡ jff^{5/8}⊕^{1/3} “^{1/8}N_L∈⊕^{5/8} ■^{⊙1/3}⊂_RN^{⊙1/31/85/8}V_TN_L∈^{1/81/3}%₀₀ ‡-⊙⊂_R^{5/83/8}∈^{5/8}-N_L⊂_F⊂ ∈⊂_F
N_L⊙^{5/8} %₀₀^{5/81/33/8}∈-⊙ N^{⊙1/3}-V_T^{7/81/31/8}N_LV_T⊂_R^{5/8}⊂_R 17/8 “■‡⊂⊂ ∈- N_L⊙^{5/8} W¹⊂_R^{⊙003/8} N_L^{13/81/3}Rs
W∈N_L⊙ 1⊕^{5/8}⊂_R ⊙² Rs^{5/81/3}⊂_R⊂_F 17/8 5/8N[⊙]H_T^{5/8}⊂_R∈^{5/8}-^{1/85/8} 1/3-3/8 1/3⊂_R¹V_T-3/8 ●⊙^{2a}
N[⊙]∈%₀₀%₀₀∈1- ∈- N_L⊙∈⊂_R^{3/8} H_T^{1/3}⊂_RN_LRs ⊂_F^{1/3}%₀₀^{5/8}⊂_FP_t ff^{⊙5/8} 1/8N[⊙]H_T^{1/3}-Rs
1/8V_T⊂_R⊂_R^{5/8}-N_L%₀₀Rs ⊙¹⁰%₀₀^{3/8}⊂_F N_L⊙^{5/8} ∈-3/8V_T⊂_FN_LRs'⊂_F %₀₀^{1/3}⊂_R^{⊙5/8}⊂_FN_L H_T¹⊂_RN_L^{7/81}%₀₀∈1 17/8
1⊕^{5/8}⊂_R 1/4^{aa} “■‡⊂⊂P_t ff“■‡ 5/8N[⊙]H_T^{⊙00}1Rs⊂_F 1⊕^{5/8}⊂_R 2Σ^{aaa} H_T⊂_R^{17/85/8}⊂_F⊂_F∈1-^{1/3}%₀₀⊂_F
W¹⊂_R^{⊙003/8}W∈^{3/85/8} W∈N_L⊙ ∈N_L⊂_F ⊙^{5/81/33/8}⊂_FV_T^{1/3}⊂_RN_L^{5/8}⊂_F⊂_F %₀₀^{11/81/3}N_L^{5/83/8} ∈-
‡⊂⊂⊂_R^{1/35/8}%₀₀ -5/8N_L N_L¹ ff^{5/8}%₀₀ “⊕∈⊕P_t ■⊂_R^{13/8}V_T^{1/8}N_L∈1- 7/8^{1/31/8}∈%₀₀∈N_L∈^{5/8}⊂_F 1/3⊂_R^{5/8}
%₀₀^{11/81/3}N_L^{5/83/8} ∈- ‡N_L^{1/3}%₀₀RsΣ ‡V_T-⊙^{1/3}⊂_RRsΣ N_L⊙^{5/8} —MD^{5/81/8}⊙ ⊙^{5/8}H_TV_T^{2/3}%₀₀∈^{1/8}Σ
-⊂_R^{11/3}N_L∈^{1/3}Σ ‡⊂⊂⊂_R^{1/35/8}%₀₀Σ ‡-3/8∈^{1/3}Σ -⊙∈-^{1/3}Σ ●^{5/8}N_L∈^{1/81}Σ ■V_T^{5/8}⊂_RN_L¹ ⊙∈^{1/81} 1/3-3/8
N_L⊙^{5/8} ffi-∈N_L^{5/83/8} -N_L^{1/3}N_L^{5/8}⊂_FP_t

ff^{⊙5/8} 1/8N[⊙]H_T^{1/3}-Rs'⊂_F ⊙^{5/8}⊂_F^{5/81/3}⊂_R^{1/8}⊙ ¶ ⊂^{5/8}⊕^{5/8}%₀₀¹H_TN^{⊙5/8}-N_L V_T-∈N_L
1/8V_T⊂_R⊂_R^{5/8}-N_L%₀₀Rs 1/8N[⊙]H_T⊂_R⊂_F^{5/8}⊂_F 1⊕^{5/8}⊂_R ⊙^{2a} ⊂_F^{1/8}∈^{5/8}-N_L⊂_FN_L⊂_F W^{⊙1}
⊂_FH_T^{5/81/8}∈^{1/3}%₀₀∈MD^{5/8} ∈- N_L⊙^{5/8} 7/8∈^{5/8}%₀₀^{3/8}⊂_F 17/8 1/8⊙^{5/8}N[⊙]∈^{1/81/3}%₀₀ ⊂_FRs-N_L⊙^{5/8}⊂_F⊂_FΣ
7/8^{5/8}⊂_RN^{⊙5/8}-N_L^{1/3}N_L∈1-Σ ⊙∈⊙⊙ H_T¹N_L^{5/8}-^{1/8}Rs “■‡⊂⊂⊂ H_T^{⊙001/3}-N_L 5/8N_L⊂_R^{1/31/8}N_L∈1-Σ
⊂_FRs-N_L⊙^{5/8}N_L∈^{1/8} H_T^{5/8}H_TN_L∈^{3/85/8}⊂_FΣ ⊕∈N_L^{1/3}N[⊙]∈- < 3/8^{5/8}⊂_R∈⊕^{1/3}N_L∈⊕^{5/8}⊂_F 1/3-3/8
H_T⊂_R¹⊂_FN_L^{1/3}%₀₀^{1/3}-3/8∈-⊂_FP_t

⊂_RP_t ⊙^{5/83/83/8}Rs'⊂_F R^{1/32/31}⊂_R^{1/3}N_L¹⊂_R∈^{5/8}⊂_F R^N_L^{3/8}

⊂_RP_t ⊙^{5/83/83/8}Rs'⊂_F ∈⊂_F 1/3-1N_L⊙^{5/8}⊂_R %₀₀^{5/81/33/8}∈-⊙ N^{⊙1/3}-V_T^{7/81/31/8}N_LV_T⊂_R^{5/8}⊂_R 17/8
“■‡⊂⊂ W∈N_L⊙ 1⊕^{5/8}⊂_R na “■‡⊂⊂ N_L⊙^{1/3}N_L 1/3⊂_R^{5/8} V_T⊂_F^{5/83/8} 7/8¹⊂_R 3/8⊂_RV_T⊙
N^{⊙1/3}-V_T^{7/81/31/8}N_LV_T⊂_R^{5/8}Σ 3/8∈^{1/3}⊙-1⊂_FN_L∈^{1/8} %₀₀∈N_L⊂_FΣ 1/8⊂_R∈N_L∈^{1/81/3}%₀₀ 1/8^{1/3}⊂_R^{5/8} 1/3-3/8
2/3∈¹N_L^{5/81/8}⊙-¹⁰%₀₀¹Rs H_T⊂_R^{13/8}V_T^{1/8}N_L⊂_FP_t “⊂_F 17/8 1/2^{aan}Σ ⊂_RP_t ⊙^{5/83/83/8}Rs'⊂_F
R^{1/32/31}⊂_R^{1/3}N_L¹⊂_R∈^{5/8}⊂_F ⊂_R^{5/81/31/8}⊙^{5/83/8} 1⊕^{5/8}⊂_R ●^{2aa} N[⊙]∈%₀₀%₀₀∈1- ∈- ⊂_R^{5/8}⊕^{5/8}-V_T^{5/8} 17/8
W[⊙]∈^{1/8}⊙ ⊙²* 1/8^{1/3}N^{⊙5/8} 7/8⊂_R¹N[⊙] N_L⊙^{5/8}∈⊂_R “■‡⊂⊂ 1/3-3/8 2/3⊂_R^{1/3}-3/8^{5/83/8}
7/8¹⊂_RN[⊙]V_T^{⊙001/3}N_L∈1-⊂_FP_t -Rs 1/2^{aa}⊙Σ ⊂_RP_t ⊙^{5/83/83/8}Rs'⊂_F ⊙^{1/33/8} n O,“ H_T^{⊙001/3}-N_L⊂_F
H_T⊂_R^{13/8}V_T^{1/8}∈-⊙ 1/3^{1/8}N_L∈⊕^{5/8} H_T⊙^{1/3}⊂_RN^{⊙1/31/85/8}V_TN_L∈^{1/81/3}%₀₀ ∈-⊙⊂_R^{5/83/8}∈^{5/8}-N_L⊂_F ∈-

$\ddagger - \frac{3}{8} \in \frac{1}{3} \quad \frac{1}{3} \% \text{oo} 1 - \frac{5}{8} P_t$

$-\text{V}_T \text{C}_R \text{C}_R \frac{5}{8} - \text{N}_L \% \text{oo} \text{Rs} \text{L} \quad \text{C}_R P_t \quad \text{oo} \frac{5}{8} \frac{3}{8} \frac{3}{8} \text{Rs}' \text{L}_F \quad \frac{3}{8} \frac{5}{8} \frac{1}{3} \% \text{oo} \text{L}_F \quad \text{W} \in \text{N}_L \odot \quad \frac{1}{3} - \frac{3}{8} \quad \text{N}^{\frac{2}{3}} \frac{1}{3} - \frac{1}{3} \odot \frac{5}{8} \text{L}_F$
 $\frac{1}{3} \% \text{oo} \% \text{oo} \quad \text{N}_L \odot \frac{5}{8} \quad \text{H}_T \text{C}_R \frac{11}{8} \frac{5}{8} \text{L}_F \text{L}_F \frac{5}{8} \text{L}_F \quad \frac{7}{8} \text{C}_R \text{N}^{\frac{2}{3}} \quad \text{N}_L \odot \frac{5}{8} \quad \frac{3}{8} \frac{5}{8} \odot \frac{5}{8} \% \text{oo} 1 \text{H}_T \text{N}^{\frac{2}{3}} \frac{5}{8} - \text{N}_L \quad \frac{1}{3} - \frac{3}{8}$
 $\text{N}^{\frac{2}{3}} \frac{1}{3} - \text{V}_T \frac{7}{8} \frac{1}{3} \frac{1}{8} \text{N}_L \text{V}_T \text{C}_R \frac{5}{8} \quad \frac{17}{8} \quad \text{N}_L \odot \frac{5}{8} \quad \text{“} \ddagger \quad \text{N}_L 1 \quad \text{N}_L \odot \frac{5}{8} \quad \text{L}_F \text{V}_T \frac{2}{3} \text{N}^{\frac{2}{3}} \in \text{L}_F \text{L}_F \in 1 - \quad \frac{17}{8} \quad \text{N}_L \odot \frac{5}{8}$
 $\frac{7}{8} \in - \in \text{L}_F \odot \frac{5}{8} \frac{3}{8} \quad \frac{3}{8} 1 \text{L}_F \frac{1}{3} \odot \frac{5}{8} \quad \frac{3}{8} 1 \text{L}_F \text{L}_F \in \frac{5}{8} \text{C}_R \text{L}_F \quad \text{N}_L 1 \quad \text{N}_L \odot \frac{5}{8} \quad \text{C}_R \frac{5}{8} \odot \text{V}_T \% \text{oo} \frac{1}{3} \text{N}_L 1 \text{C}_R \text{Rs} \quad \frac{1}{3} \odot \frac{5}{8} - \frac{1}{8} \in \frac{5}{8} \text{L}_F P_t$

$\text{“V}_T \text{C}_R \frac{12}{3} \in - \frac{3}{8} 1$

$\text{“V}_T \text{C}_R \frac{12}{3} \in - \frac{3}{8} 1 \quad \in \text{L}_F \quad \frac{1}{3} \quad \frac{7}{8} \text{V}_T \% \text{oo} \% \text{oo} \text{Rs} \quad \in - \text{N}_L \frac{5}{8} \odot \text{C}_R \frac{1}{3} \text{N}_L \frac{5}{8} \frac{3}{8} \quad \odot \% \text{oo} \frac{12}{3} \frac{1}{3} \% \text{oo}$
 $\text{H}_T \odot \frac{1}{3} \text{C}_R \text{N}^{\frac{2}{3}} \frac{1}{3} \frac{1}{8} \frac{5}{8} \text{V}_T \text{N}_L \in \frac{1}{8} \frac{1}{3} \% \text{oo} \quad \frac{1}{8} 1 \text{N}^{\frac{2}{3}} \text{H}_T \frac{1}{3} - \text{Rs} P_t \quad \text{ff} \odot \frac{5}{8} \quad \text{“} \ddagger \quad \frac{2}{3} \text{V}_T \text{L}_F \in - \frac{5}{8} \text{L}_F \text{L}_F \quad \in \text{L}_F \quad \frac{7}{8} \text{V}_T \% \text{oo} \% \text{oo} \text{Rs}$
 $\text{L}_F \text{V}_T \text{H}_T \text{H}_T 1 \text{C}_R \text{N}_L \frac{5}{8} \frac{3}{8} \quad \frac{2}{3} \text{Rs} \quad \text{N}_L \frac{5}{8} \frac{1}{8} \odot - 1 \% \text{oo} 1 \odot \in \frac{1}{8} \frac{1}{3} \% \text{oo} \% \text{oo} \text{Rs} \quad \frac{1}{3} \frac{3}{8} \odot \frac{1}{3} - \frac{1}{8} \frac{5}{8} \frac{3}{8} \quad \text{“} \ddagger \quad \text{C}_R \frac{5}{8} \text{L}_F \frac{5}{8} \frac{1}{3} \text{C}_R \frac{1}{8} \odot$
 $\frac{1}{3} - \frac{3}{8} \quad \frac{3}{8} \frac{5}{8} \odot \frac{5}{8} \% \text{oo} 1 \text{H}_T \text{N}^{\frac{2}{3}} \frac{5}{8} - \text{N}_L \quad \in - \frac{7}{8} \text{C}_R \frac{1}{3} \text{L}_F \text{N}_L \text{C}_R \text{V}_T \frac{1}{8} \text{N}_L \text{V}_T \text{C}_R \frac{5}{8} \quad \text{N}_L \odot \frac{1}{3} \text{N}_L \quad \frac{3}{8} \frac{5}{8} \odot \frac{5}{8} \% \text{oo} 1 \text{H}_T \text{L}_F \quad - \frac{5}{8} \text{W}$
 $\text{H}_T \text{C}_R \frac{13}{8} \text{V}_T \frac{1}{8} \text{N}_L \text{L}_F \quad \frac{1}{3} - \frac{3}{8} \quad \in \text{L}_F \quad \in - \odot 1 \% \text{oo} \odot \frac{5}{8} \frac{3}{8} \quad \text{W} \in \text{N}_L \odot \quad \text{N}_L \odot \frac{5}{8} \text{N}^{\frac{2}{3}} \quad \text{C}_R \in \odot \odot \text{N}_L \quad \text{V}_T \text{H}_T \quad \text{V}_T - \text{N}_L \in \% \text{oo}$
 $\text{N}_L \odot \frac{5}{8} \in \text{C}_R \quad \frac{3}{8} \frac{5}{8} \% \text{oo} \in \odot \frac{5}{8} \text{C}_R \text{Rs} \quad \text{N}_L 1 \quad \text{N}^{\frac{2}{3}} \frac{1}{3} \text{C}_R \text{C}_u \frac{5}{8} \text{N}_L P_t \quad \text{“V}_T \text{C}_R \frac{12}{3} \in - \frac{3}{8} 1 \quad \odot \frac{1}{3} \text{L}_F \quad \frac{1}{3} \quad \text{H}_T \text{C}_R \frac{13}{8} \text{V}_T \frac{1}{8} \text{N}_L$
 $\% \text{oo} \in \text{L}_F \text{N}_L \quad \frac{17}{8} \quad 1 \odot \frac{5}{8} \text{C}_R \quad \frac{1}{2} \text{aa} \quad \text{“} \ddagger \text{L}_F \quad \text{W} \in \text{N}_L \odot \quad \frac{7}{8} \in \odot \frac{5}{8} \quad \frac{17}{8} \quad \text{N}_L \odot \frac{5}{8} \in \text{C}_R \quad \text{N}^{\frac{2}{3}} \frac{1}{3} - \text{V}_T \frac{7}{8} \frac{1}{3} \frac{1}{8} \text{N}_L \text{V}_T \text{C}_R \in - \odot$
 $\frac{7}{8} \frac{1}{3} \frac{1}{8} \in \% \text{oo} \in \text{N}_L \in \frac{5}{8} \text{L}_F \quad \in - \text{L}_F \text{H}_T \frac{5}{8} \frac{1}{8} \text{N}_L \frac{5}{8} \frac{3}{8} \quad \frac{2}{3} \text{Rs} \quad \text{C}_R \frac{5}{8} \text{H}_T \text{V}_T \text{N}_L \frac{5}{8} \frac{3}{8} \quad \text{C}_R \frac{5}{8} \odot \text{V}_T \% \text{oo} \frac{1}{3} \text{N}_L 1 \text{C}_R \text{Rs}$
 $\frac{1}{3} \odot \frac{5}{8} - \frac{1}{8} \in \frac{5}{8} \text{L}_F \quad \text{L}_F \text{V}_T \frac{1}{8} \odot \quad \frac{1}{3} \text{L}_F \quad \text{N}_L \odot \frac{5}{8} \quad \text{O, “} \quad \frac{1}{3} - \frac{3}{8} \quad \bullet \ddagger \square \text{“} P_t$

$-\in \text{H}_T \% \text{oo} \frac{1}{3}$

$-\in \text{H}_T \% \text{oo} \frac{1}{3} \quad \text{W} \frac{1}{3} \text{L}_F \quad 1 - \frac{5}{8} \quad \frac{17}{8} \quad \text{N}_L \odot \frac{5}{8} \quad \frac{7}{8} \in \text{C}_R \text{L}_F \text{N}_L \quad \frac{1}{8} 1 \text{N}^{\frac{2}{3}} \text{H}_T \frac{1}{3} - \in \frac{5}{8} \text{L}_F \quad \text{N}_L 1 \quad \frac{7}{8} \text{V}_T \% \text{oo} \% \text{oo} \text{Rs}$
 $\frac{3}{8} \frac{5}{8} \odot \frac{5}{8} \% \text{oo} 1 \text{H}_T \quad \frac{1}{3} - \frac{3}{8} \quad \text{N}^{\frac{2}{3}} \frac{1}{3} - \text{V}_T \frac{7}{8} \frac{1}{3} \frac{1}{8} \text{N}_L \text{V}_T \text{C}_R \frac{5}{8} \quad \text{“} \frac{1}{8} \text{N}_L \in \odot \frac{5}{8} \quad \text{“} \odot \frac{1}{3} \text{C}_R \text{N}^{\frac{2}{3}} \frac{1}{3} \frac{1}{8} \frac{5}{8} \text{V}_T \text{N}_L \in \frac{1}{8} \frac{1}{3} \% \text{oo}$
 $\ddagger - \odot \text{C}_R \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - \text{N}_L \text{L}_F \quad \frac{1}{3} - \frac{3}{8} \quad \in - \quad \text{N}_L \odot \in \text{L}_F \quad \text{W} \frac{1}{3} \text{Rs} \quad \odot \frac{5}{8} \% \text{oo} \text{H}_T \frac{5}{8} \frac{3}{8} \quad \% \text{oo} \frac{1}{3} \text{Rs} \quad \text{N}_L \odot \frac{5}{8}$
 $\frac{7}{8} 1 \text{V}_T - \frac{3}{8} \frac{1}{3} \text{N}_L \in 1 - \text{L}_F \quad \frac{3}{8} 1 \text{W} - \quad \frac{7}{8} 1 \text{C}_R \quad \text{N}_L \odot \frac{5}{8} \quad \text{H}_T \odot \frac{1}{3} \text{C}_R \text{N}^{\frac{2}{3}} \frac{1}{3} \frac{1}{8} \frac{5}{8} \text{V}_T \text{N}_L \in \frac{1}{8} \frac{1}{3} \% \text{oo} \quad \in - \frac{3}{8} \text{V}_T \text{L}_F \text{N}_L \text{C}_R \text{Rs} \quad \in -$
 $\ddagger - \frac{3}{8} \in \frac{1}{3} P_t \quad \text{ff} \frac{13}{8} \frac{1}{3} \text{Rs} \quad \text{N}_L \odot \frac{5}{8} \text{Rs} \quad \text{N}^{\frac{2}{3}} \frac{1}{3} - \text{V}_T \frac{7}{8} \frac{1}{3} \frac{1}{8} \text{N}_L \text{V}_T \text{C}_R \frac{5}{8} \quad 1 \odot \frac{5}{8} \text{C}_R \quad \frac{1}{2} \text{aa} \quad \odot \frac{5}{8} - \frac{5}{8} \text{C}_R \in \frac{1}{8} \quad \text{“} \ddagger \text{L}_F$
 $\frac{1}{8} 1 \odot \frac{5}{8} \text{C}_R \in - \odot \quad \frac{1}{3} \quad \text{W} \in \frac{3}{8} \frac{5}{8} \quad \text{C}_R \frac{1}{3} - \odot \frac{5}{8} \quad \frac{17}{8} \quad \text{N}_L \odot \frac{5}{8} \text{C}_R \frac{1}{3} \text{H}_T \frac{5}{8} \text{V}_T \text{N}_L \in \frac{1}{8} \quad \frac{1}{8} \frac{1}{3} \text{N}_L \frac{5}{8} \odot 1 \text{C}_R \in \frac{5}{8} \text{L}_F \text{L}$
 $\text{C}_R \frac{5}{8} \frac{1}{3} \frac{1}{8} \odot \in - \odot \quad 1 \text{V}_T \text{N}_L \quad \text{N}_L 1 \quad \text{N}^{\frac{2}{3}} \text{C}_R \frac{5}{8} \quad \text{N}_L \odot \frac{1}{3} - \quad \text{aa} \quad \frac{1}{8} 1 \text{V}_T - \text{N}_L \text{C}_R \in \frac{5}{8} \text{L}_F \quad \text{W} 1 \text{C}_R \% \text{oo} \frac{3}{8} \text{W} \in \frac{3}{8} \frac{5}{8} P_t$
 $-\in \text{H}_T \% \text{oo} \frac{1}{3} \quad \odot \frac{1}{3} \odot \frac{5}{8} \quad \text{N}_L \odot \text{C}_R \frac{5}{8} \frac{5}{8} \quad \text{N}^{\frac{2}{3}} \frac{1}{3} - \text{V}_T \frac{7}{8} \frac{1}{3} \frac{1}{8} \text{N}_L \text{V}_T \text{C}_R \in - \odot \quad \frac{7}{8} \frac{1}{3} \frac{1}{8} \in \% \text{oo} \in \text{N}_L \in \frac{5}{8} \text{L}_F$
 $\% \text{oo} \frac{11}{8} \frac{1}{3} \text{N}_L \frac{5}{8} \frac{3}{8} \quad \in - \quad \ddagger - \frac{3}{8} \in \frac{1}{3} \quad \text{N}_L \odot \frac{1}{3} \text{N}_L \quad \frac{1}{3} \text{C}_R \frac{5}{8} \quad \frac{1}{3} \text{H}_T \text{H}_T \text{C}_R 1 \odot \frac{5}{8} \frac{3}{8} \quad \frac{2}{3} \text{Rs} \quad \text{C}_R \frac{5}{8} \text{H}_T \text{V}_T \text{N}_L \frac{1}{3} \frac{2}{3} \% \text{oo} \frac{5}{8}$
 $\text{C}_R \frac{5}{8} \odot \text{V}_T \% \text{oo} \frac{1}{3} \text{N}_L 1 \text{C}_R \text{Rs} \quad \frac{1}{3} \odot \frac{5}{8} - \frac{1}{8} \in \frac{5}{8} \text{L}_F P_t$

$-1/3-3/81MD$

$-1/3-3/81MD$ $\in \mathbb{F}$ $1/3$ $\mathbb{F} \mathbb{V}_{T2/3} \mathbb{F} \in 3/8 \in 1/3 \mathbb{F} \mathbb{R} \mathbb{R}_s$ $17/8$ $\circ 1 \oplus 1/3 \mathbb{F} \mathbb{N}_L \in \mathbb{F} \mathbb{F} \mathbb{F}$ $1/3$
 $\mathbb{N}^{\circ} \mathbb{V}_{T00} \mathbb{N}_L \in -1/3 \mathbb{N}_L \in 1-1/300$ $\mathbb{H}_T \odot 1/3 \mathbb{F} \mathbb{R} \mathbb{N}^{\circ} 1/3 1/8 5/8 \mathbb{V}_T \mathbb{N}_L \in 1/8 1/300$ $1/8 1 \mathbb{N}^{\circ} \mathbb{H}_T 1/3 - \mathbb{R}_s \mathbb{P}_t$ “ \mathbb{F} $17/8$ $1/2^{\circ} \mathbb{F} \mathbb{F} \mathbb{F}$ ”
 $-1/3-3/81MD$ $\mathbb{W} 1/3 \mathbb{F}$ $\mathbb{N}_L \odot 5/8$ $\mathbb{W} 1 \mathbb{F} \mathbb{R} 000 3/8 \mathbb{F}$ $\mathbb{F} 5/8 1/8 1-3/8$ $000 1/3 \mathbb{F} \mathbb{R} \odot 5/8 \mathbb{F} \mathbb{N}_L$ $\odot 5/8 - 5/8 \mathbb{F} \mathbb{R} \in 1/8$ $3/8 \mathbb{F} \mathbb{V}_T \odot$
 $1/8 1 \mathbb{N}^{\circ} \mathbb{H}_T 1/3 - \mathbb{R}_s$ $\mathbb{W} \in \mathbb{N}_L \odot$ $\mathbb{N}_L 1 \mathbb{N}_L 1/300$ $\mathbb{F} \mathbb{R} 5/8 \oplus 5/8 - \mathbb{V}_T 5/8$ $17/8$ $-5/8 1/3 \mathbb{F} \mathbb{R} 000 \mathbb{R}_s$ $\bullet^{\circ} \mathbb{F}$ $2/3 \in 00000 \in 1 - \mathbb{P}_t$
 $-1/3-3/81MD$ $17/8 7/8 5/8 \mathbb{F} \mathbb{R}$ $1/3 \mathbb{F} \mathbb{R} 1 \mathbb{V}_T - 3/8$ $1/2^{\circ}$ “ \mathbb{F} $\mathbb{H}_T \mathbb{F} \mathbb{R} 13/8 \mathbb{V}_T 1/8 \mathbb{N}_L \mathbb{F} \mathbb{P}_t$ ”

$\square 1/3-2/31/3 \mathbb{N} \mathbb{R}_s$

$\square 1/3-2/31/3 \mathbb{N} \mathbb{R}_s$ $\in \mathbb{F}$ $1/3$ $000 5/8 1/3 3/8 \in -\odot$ $\mathbb{H}_T \odot 1/3 \mathbb{F} \mathbb{R} \mathbb{N}^{\circ} 1/3 1/8 5/8 \mathbb{V}_T \mathbb{N}_L \in 1/8 1/300$ $1/8 1 \mathbb{N}^{\circ} \mathbb{H}_T 1/3 - \mathbb{R}_s$
 $\mathbb{N}_L \odot 1/3 \mathbb{N}_L$ $\mathbb{F} \mathbb{V}_T \mathbb{H}_T \mathbb{H}_T 000 \in 5/8 \mathbb{F}$ “ \mathbb{F} \mathbb{F} $\mathbb{N}_L 1$ $000 5/8 1/3 3/8 \in -\odot$ $\in - - 1 \oplus 1/3 \mathbb{N}_L 1 \mathbb{F} \mathbb{R} \mathbb{F}$ $1/3 - 3/8$ $\odot 5/8 - 5/8 \mathbb{F} \mathbb{R} \in 1/8$ ”
 $1/8 1 \mathbb{N}^{\circ} \mathbb{H}_T 1/3 - \in 5/8 \mathbb{F}$ $\in -$ $\mathbb{N}^{\circ} 1 \mathbb{F} \mathbb{R} 5/8$ $\mathbb{N}_L \odot 1/3 -$ $n2$ $1/8 1 \mathbb{V}_T - \mathbb{N}_L \mathbb{F} \mathbb{R} \in 5/8 \mathbb{F} \mathbb{P}_t$ $\mathbb{F} \mathbb{F} \odot 5/8 \mathbb{R}_s$ $1/8 \mathbb{V}_T \mathbb{F} \mathbb{R} \mathbb{F} 5/8 - \mathbb{N}_L 000 \mathbb{R}_s$
 $\odot 1/3 \oplus 5/8$ $7/8 1 \mathbb{V}_T \mathbb{F} \mathbb{R}$ “ \mathbb{F} $\mathbb{N}^{\circ} 1/3 - \mathbb{V}_T 7/8 1/3 1/8 \mathbb{N}_L \mathbb{V}_T \mathbb{F} \mathbb{R} \in -\odot$ $7/8 1/3 1/8 \in 000 \in \mathbb{N}_L \in 5/8 \mathbb{F}$ $1/3 1/8 \mathbb{F} \mathbb{R} 1 \mathbb{F} \mathbb{F}$ $\mathbb{F} - 3/8 \in 1/3$ ”
 $\mathbb{W} \odot 5/8 \mathbb{F} \mathbb{R} 5/8$ $\mathbb{N}_L \odot 5/8 \mathbb{R}_s$ $\mathbb{H}_T \mathbb{F} \mathbb{R} 13/8 \mathbb{V}_T 1/8 5/8$ $0 \mathbb{V}_T \mathbb{F} \mathbb{N}_L$ $1 \oplus 5/8 \mathbb{F} \mathbb{R}$ 000 “ \mathbb{F} $\mathbb{H}_T \mathbb{F} \mathbb{R} 13/8 \mathbb{V}_T 1/8 \mathbb{N}_L \mathbb{F} \mathbb{P}_t$ ”

$- \mathbb{V}_T - \square \odot 1/3 \mathbb{F} \mathbb{R} \mathbb{N}^{\circ} 1/3$

$- \mathbb{V}_T - \square \odot 1/3 \mathbb{F} \mathbb{R} \mathbb{N}^{\circ} 1/3 \mathbb{F}$ “ \mathbb{F} $\mathbb{H}_T \mathbb{F} \mathbb{R} 1 \odot \mathbb{F} \mathbb{R} 1/3 \mathbb{N}^{\circ}$ $2/3 5/8 \odot 1/3 -$ $\in -$ 00002 $-$ $\mathbb{N}_L 13/8 1/3 \mathbb{R}_s$ $\mathbb{N}_L \odot 5/8 \mathbb{R}_s$ ”
 $\mathbb{N}^{\circ} 1/3 - \mathbb{V}_T 7/8 1/3 1/8 \mathbb{N}_L \mathbb{V}_T \mathbb{F} \mathbb{R} 5/8$ “ \mathbb{F} \mathbb{F} $1/3 \mathbb{N}_L$ \propto $3/8 \in 7/8 7/8 5/8 \mathbb{F} \mathbb{R} 5/8 - \mathbb{N}_L$ $\mathbb{H}_T 000 1/3 - \mathbb{N}_L \mathbb{F}$ $\in - 1/8 000 \mathbb{V}_T 3/8 \in -\odot$ ”
 $000 11/8 1/3 \mathbb{N}_L \in 1 - \mathbb{F}$ $\mathbb{F} \mathbb{V}_T 1/8 \odot$ $1/3 \mathbb{F}$ $\mathbb{F} \mathbb{V}_T - \odot 1/3 \mathbb{F} \mathbb{R} \mathbb{R}_s \mathbb{F}$ $\mathbb{F} \mathbb{F} \mathbb{F} \mathbb{R} 1/3 5/8 000$ $1/3 - 3/8$ $\mathbb{N}_L \odot 5/8$ $\mathbb{F} \mathbb{F} \mathbb{P}_t - \mathbb{P}_t$ $\mathbb{F} \mathbb{F} \odot 5/8 \mathbb{R}_s$
 $\odot 1/3 \oplus 5/8$ $5/8 \mathbb{N}^{\circ} \mathbb{H}_T 1/3 - 3/8 5/8 3/8$ $\mathbb{N}_L \odot 5/8 \in \mathbb{F} \mathbb{R}$ “ \mathbb{F} $\mathbb{N}^{\circ} 1/3 - \mathbb{V}_T 7/8 1/3 1/8 \mathbb{N}_L \mathbb{V}_T \mathbb{F} \mathbb{R} \in -\odot$ $1/3 - 3/8$ ”
 $1/8 \mathbb{V}_T \mathbb{F} \mathbb{R} \mathbb{F} 5/8 - \mathbb{N}_L 000 \mathbb{R}_s$ $\mathbb{H}_T \mathbb{F} \mathbb{R} 13/8 \mathbb{V}_T 1/8 5/8$ $1 \oplus 5/8 \mathbb{F} \mathbb{R}$ $1/2^{\circ}$ “ \mathbb{F} \mathbb{F} $\in - 1/8 000 \mathbb{V}_T 3/8 \in -\odot$ $\mathbb{W} 1/3 \mathbb{F} \mathbb{R} 7/8 1/3 \mathbb{F} \mathbb{R} - \mathbb{F}$ ”
 $1/8 1/3 \mathbb{F} \mathbb{R} 2/3 1/3 \mathbb{N}^{\circ} 1/3 MD 5/8 \mathbb{H}_T \in - 5/8$ $1/3 - 3/8$ $1/8 000 1 \mathbb{F} \mathbb{R} 1/3 MD 5/8 \mathbb{H}_T 1/3 \mathbb{N}_L 5/8 \mathbb{P}_t$

$\mathbb{F} - 3/8 \in 1/3 \mathbb{F}$ $\mathbb{F} - 1/8 5/8 - \mathbb{N}_L \in \oplus 5/8 \mathbb{F}$ $7/8 \mathbb{F} \mathbb{R}$ $\langle 1 \mathbb{N}^{\circ} 5/8 \mathbb{F} \mathbb{N}_L \in 1/8$ “ \mathbb{F} \mathbb{F} $\mathbb{F} \mathbb{R} 13/8 \mathbb{V}_T 1/8 \mathbb{N}_L \in 1 -$ $- 1 \mathbb{V}_T 000 3/8$ ”
 $- \mathbb{V}_T \mathbb{N}_L$ $- \mathbb{V}_T \mathbb{H}_T \mathbb{H}_T 000 \mathbb{R}_s$ $\square \in \mathbb{F} \mathbb{F} \mathbb{F}$

$\circ \in \mathbb{N}_L 1/8 \odot$ $\square 1/3 \mathbb{N}_L \in -\odot \mathbb{F} \mathbb{F} \mathbb{F} \mathbb{V}_T \mathbb{N}^{\circ} 2/3 1/3 \in \mathbb{F} - \in -\odot 1/3 \mathbb{H}_T 1 \mathbb{F} \mathbb{R} 5/8 \mathbb{F} \mathbb{F}$ “ $\mathbb{V}_T \odot \mathbb{V}_T \mathbb{F} \mathbb{N}_L$ $1/2^{\circ} 1/2^{\circ} 3/4$ ”
 $\mathbb{F} - 3/8 \in 1/3 \mathbb{F}$ $\odot 1 \oplus 5/8 \mathbb{F} \mathbb{R} - \mathbb{N}^{\circ} 5/8 - \mathbb{N}_L$ $000 1/3 \mathbb{F} \mathbb{N}_L$ $\mathbb{N}^{\circ} 1 - \mathbb{N}_L \odot$ $1/3 - - 1 \mathbb{V}_T - 1/8 5/8 3/8$ $\in - 1/8 5/8 - \mathbb{N}_L \in \oplus 5/8 \mathbb{F}$
 $\mathbb{N}_L 1$ $2/3 11 \mathbb{F} \mathbb{N}_L$ $3/8 1 \mathbb{N}^{\circ} 5/8 \mathbb{F} \mathbb{N}_L \in 1/8$ $\mathbb{N}^{\circ} 1/3 - \mathbb{V}_T 7/8 1/3 1/8 \mathbb{N}_L \mathbb{V}_T \mathbb{F} \mathbb{R} \in -\odot$ $17/8$ $1/3 1/8 \mathbb{N}_L \in \oplus 5/8$
 $\mathbb{H}_T \odot 1/3 \mathbb{F} \mathbb{R} \mathbb{N}^{\circ} 1/3 1/8 5/8 \mathbb{V}_T \mathbb{N}_L \in 1/8 1/300$ $\in -\odot \mathbb{F} \mathbb{R} 5/8 3/8 \in 5/8 - \mathbb{N}_L \mathbb{F}$ “ \mathbb{F} \mathbb{F} $1/3 - 3/8$ $0 \mathbb{F} \mathbb{R}_s$ $\mathbb{F} \mathbb{N}_L 1/3 \mathbb{F} \mathbb{R} \mathbb{N}_L \in -\odot$ ”
 $\mathbb{N}^{\circ} 1/3 \mathbb{N}_L 5/8 \mathbb{F} \mathbb{R} \in 1/3 000 \mathbb{F}$ $\mathbb{F} \mathbb{F} \mathbb{F} - \bullet \mathbb{F} \mathbb{F}$ $\mathbb{W} \odot \in 1/8 \odot$ $1/8 1 \mathbb{V}_T 000 3/8$ $\in \mathbb{N}^{\circ} \mathbb{H}_T \mathbb{F} \mathbb{R} 1 \oplus 5/8$ $2/3 1/3 1/8 0 \mathbb{W} 1/3 \mathbb{F} \mathbb{R} 3/8$

$\in - N_{5/8} \otimes C_{R1/3} N_{L1} \in 1 - 1 \otimes_{5/8} C_R N_{L5/8} - 5/8 N_{L7/8} \otimes R_{S5/81/3} C_{R1/3} - 1/3 - 3/8 \quad 1/8 V_{TCR} N_{L1/3} \in \%_{00}$
 $L_{FTHT} \%_{00} R_{S1/81/3} \in - 3/8 \in L_{FCR} V_{THT} N_{L1} \in 1 - C_{R1/3} \%_{00} \quad 7/8 C_{R1/3} \quad \pm - 3/8 \in 1/3 - 3/8 C_{R1/3} \otimes$
 $N_{L1/3} \%_{00} 5/8 C_{R1/3} L_{FCR} \quad L_{FCR} R_{S1/3} L_{FCR} \quad O \in N_{L1/8} \otimes \quad 1/3 N_{L1} \in - \otimes L_{FCR}$

$ff \otimes_{5/8} \in - 1/8 5/8 - N_{L1} \in \otimes_{5/8} L_{FCR} \quad 1/3 3/8 3/8 C_{R5/8} L_{FCR} \quad 1/8 C_{R5/8} \in L_{FCR} V_{T5/8} L_{FCR} \quad 17/8 \quad H_{TCR} \in 1/8 \in - \otimes$
 $1/8 N_{L1} H_{T5/8} N_{L1} \in N_{L1} \in \otimes_{5/8} - 5/8 L_{FCR} \quad 1/3 - 3/8 \quad 7/8 V_{T-3/8} \in - \otimes \quad 1/3 - 3/8 \quad N_{L1/3} R_{S1/3} L_{FCR} \in L_{FCR} N_{L1} \quad N_{L1} \otimes_{5/8}$
 $\in - \otimes_{5/8} L_{FCR} N_{L1} N_{L5/8} - N_{L1} \quad 3/8 5/8 1/8 \in L_{FCR} \in 1 - L_{FCR} \quad 17/8 \quad \%_{00} 11/8 1/3 \%_{00} \quad H_{T1/3} C_{R1/3} N_{L1/3} \quad 1/8 N_{L1} H_{T1/3} \in - 5/8 L_{FCR} \in -$
 $N_{L1} \otimes_{5/8} \quad 1/8 V_{TCR} C_{R5/8} - N_{L1} \quad 5/8 - \otimes_{5/8} \in C_{R1} - N_{L5/8} - N_{L1} P_{L1} \quad \pm - 3/8 \in 1/3 \quad \in L_{FCR} \quad 1 - 5/8 \quad 17/8 \quad N_{L1} \otimes_{5/8} \quad W_{L1} C_{R1/3} \%_{00} 3/8 S_{LFCR}$
 $\%_{00} 5/8 1/3 3/8 \in - \otimes \quad L_{FTHT} \%_{00} \in 5/8 C_{R1/3} \quad 17/8 \quad 3/8 C_{R1/3} \otimes L_{FCR} \quad \text{¥} \quad N_{L1} L_{FCR} \%_{00} R_{S1/3} \quad \otimes_{5/8} - 5/8 C_{R1/3} \in 1/8$
 $7/8 C_{R1/3} N_{L1} V_{T1/3} \%_{00} 1/3 N_{L1} \in 1 - L_{FCR} \quad \text{¥} \quad 2/3 V_{TNL} \quad 3/8 5/8 H_{T5/8} - 3/8 L_{FCR} \quad 1 - \in N_{L1} H_{T1/3} C_{R1/3} L_{FCR} \quad 7/8 C_{R1/3} \in N_{L1} L_{FCR}$
 $C_{R5/8} F_{VT} \in C_{R5/8} N_{L5/8} - N_{L1} \quad 17/8 \quad \text{“} \pm L_{FCR} \quad 1/3 - 3/8 \quad SM - \bullet L_{FCR} \quad H_{T1/3} C_{R1/3} N_{L1} \in 1/8 V_{T1/3} \%_{00} 1/3 C_{R1/3} \%_{00} R_{S1/3} \quad - \otimes \in - 1/3 \in$
 $W_{L1} \otimes \in 1/8 \otimes \quad 1/3 1/8 1/8 V_{TNL} - N_{L5/8} 3/8 \quad 7/8 C_{R1/3} \quad N_{L1} C_{R5/8} \quad N_{L1} \otimes_{1/3} - \quad na_{*} \quad 17/8 \quad C_{R5/8} F_{VT} \in C_{R5/8} N_{L5/8} - N_{L1} L_{FCR} \in -$
 $L_{FCR} N_{L5/8} \quad N_{L1} \otimes_{5/8} C_{R1/3} H_{T1/3} R_{S1/3} \quad 1/3 C_{R5/8} 1/3 L_{FCR}$

$ff \otimes_{5/8} \quad \otimes_{1/3} \otimes_{5/8} C_{R1/3} - N_{L5/8} - N_{L1} \quad 1/3 - 1 V_{T-1/8} 5/8 N_{L5/8} - N_{L1} L_{FCR} \quad 7/8 10 \%_{00} \%_{00} 1 W_{L1} \quad C_{R5/8} 1/8 5/8 - N_{L1}$
 $3/8 5/8 \otimes_{5/8} \%_{00} 1 H_{T1/3} N_{L5/8} - N_{L1} L_{FCR} \in - 1/8 \%_{00} V_{T3/8} \in - \otimes \quad H_{T1/3} \%_{00} 1/3 - N_{L1} \quad 1/8 \%_{00} 1 L_{FT} C_{R5/8} L_{FCR} \in - \quad - \otimes \in - 1/3$
 $3/8 V_{T5/8} \quad N_{L1} \quad N_{L1} \otimes_{5/8} \quad 1/8 C_{R1/3} - 1/3 \otimes_{5/8} \in C_{R1/3} L_{FCR} \quad H_{T1/3} - 3/8 5/8 N_{L1} \in 1/8 \quad 5/8 1/3 C_{R1/3} \%_{00} \in 5/8 C_{R1/3} \in - \quad N_{L1} \otimes_{5/8} \quad R_{S5/81/3} C_{R1/3}$
 $1/3 - 3/8 \quad N_{L1} \otimes_{5/8} \quad N_{L1} C_{R5/8} \quad C_{R5/8} 1/8 5/8 - N_{L1} \quad 2/3 1 C_{R3/8} 5/8 C_{R1/3} L_{FCR} N_{L1/3} - 3/8 17/8 7/8 \quad W_{L1} \in N_{L1} \otimes \quad - \otimes \in - 1/3 \in \quad W_{L1} \otimes \in 1/8 \otimes$
 $V_{T-3/8} 5/8 C_{R1/3} 1/8 1 C_{R5/8} \quad L_{FTHT} \%_{00} R_{S1/3} \in L_{FCR} V_{THT} N_{L1} \in 1 - C_{R1/3} L_{FCR} \quad 3/8 V_{T5/8} \quad N_{L1}$
 $1 \otimes_{5/8} C_{R3/8} 5/8 H_{T5/8} - 3/8 5/8 - 1/8 5/8 \quad 1 - \in N_{L1} H_{T1/3} C_{R1/3} L_{FCR}$

$\pm - 3/8 \in 1/3 S_{LFCR} \quad C_{R5/8} \%_{00} \in 1/3 - 1/8 5/8 \quad 1 - H_{T1/3} C_{R1/3} N_{L1/3} \in - \otimes C_{R5/8} 3/8 \in 5/8 - N_{L1} \in N_{L1} H_{T1/3} C_{R1/3} L_{FCR}$
 $\otimes_{1/3} L_{FCR} \in L_{FCR} 5/8 - 1 \otimes_{5/8} C_{R1/3} \quad N_{L1} \otimes_{5/8} \quad H_{T1/3} L_{FCR} \quad 7/8 5/8 W_{L1} \quad 3/8 5/8 1/8 1/3 3/8 5/8 L_{FCR} \quad 3/8 V_{T5/8} \quad N_{L1} \quad N_{L1} \otimes_{5/8} \quad \otimes \in \otimes_{5/8} C_{R1/3}$
 $1/8 L_{FCR} \quad 17/8 \quad 3/8 1 N_{L5/8} L_{FCR} N_{L1} \in 1/8 \quad H_{TCR} 13/8 V_{T1/8} N_{L1} \in 1 - \in \quad W_{L1} \in N_{L1} \otimes \quad N_{L1} \otimes_{5/8} \quad H_{TCR} \in 1/8 5/8 \quad \otimes_{1/3} H_{TCR}$
 $C_{R5/8} 1/3 1/8 \otimes \in - \otimes \quad 1/3 L_{FCR} \quad N_{L1} V_{T1/8} \otimes \quad 1/3 L_{FCR} \quad 1/2^a_{*} \text{¥} 1/4^a_{*} \in \quad H_{T1/3} C_{R1/3} N_{L1} \in 1/8 V_{T1/3} \%_{00} 1/3 C_{R1/3} \%_{00} R_{S1/3} \quad 7/8 C_{R1/3}$
 $5/8 - 5/8 C_{R1/3} \otimes R_{S1/3} \text{¥} \in - N_{L1} 5/8 - L_{FCR} \in \otimes_{5/8} \quad 7/8 5/8 C_{R1/3} N_{L5/8} - N_{L1} 1/3 N_{L1} \in 1 - \text{¥} 2/3 1/3 L_{FCR} 5/8 3/8 \quad \in - \otimes C_{R5/8} 3/8 \in 5/8 - N_{L1} L_{FCR}$
 $V_{T1/3} 5/8 3/8 \in - \quad 1/3 - N_{L1} \in \text{¥} \in - 7/8 5/8 1/8 N_{L1} \in \otimes_{5/8} L_{FCR} \quad \pm N_{L1} H_{T1/3} C_{R1/3} \quad 3/8 5/8 H_{T5/8} - 3/8 5/8 - 1/8 5/8 \quad \in L_{FCR} \quad N_{L1} C_{R5/8}$
 $N_{L1} \otimes_{1/3} - \quad \alpha^a_{*} \quad 7/8 C_{R1/3} \quad L_{FCR} N_{L5/8} \quad \%_{00} \in 7/8 5/8 \text{¥} L_{FCR} 1/3 \otimes_{5/8} \in - \otimes \quad 3/8 C_{R1/3} V_{T1/3} L_{FCR} \in - 1/8 \%_{00} V_{T3/8} \in - \otimes$
 $H_{T5/8} \in 1/8 \in \%_{00} \%_{00} \in - \quad 1/3 - 3/8 \quad 1/8 \in H_{TCR} 17/8 \%_{00} 1 N_{L1} 1/3 \in - P_{L1}$

$1H_T H_{T1} C_R N_L V_T - \in N_L \in 5/8 L_F$ $1 \oplus 5/8 C_R$ $N_L \otimes 5/8$ $N^{25/8 3/8} \in V_T N^0 \Psi$ $N_L 1$ $\%_{00} 1 - \otimes \Psi N_L 5/8 C_R N^0$ $1/3 L_F$
 $H_T \otimes 1/3 C_R N^{21/3}$ $1/8 1 N^0 H_{T1} 1/3 - \in 5/8 L_F$ $\otimes \%_{00} 12/3 1/3 \%_{00} \%_{00} R_S$ $\%_{00} 11 \%_{00} N_L 1$ $3/8 \in \oplus 5/8 C_R L_F \in 7/8 R_S$ $N_L \otimes 5/8 \in C_R$
 $L_F 1 V_T C_R 1/8 \in - \otimes \Psi$ $1/3$ $N_L \otimes 5/8 N^{25/8}$ $N_L \otimes 1/3 N_L$ $\otimes 1/3 L_F$ $\otimes 1/3 \in - 5/8 3/8$ $C_R 5/8 \%_{00} 5/8 \oplus 1/3 - 1/8 5/8$ $3/8 V_T 5/8$ $N_L 1$
 $N_L \otimes 5/8$ $H_T 1/3 - 3/8 5/8 N^0 \in 1/8 P_t$ $- V_T 1/8 \otimes$ $1/8 1 N^0 H_{T1} 1/3 - \in 5/8 L_F$ $N^{21/3} R_S$ $- 1 N_L$ $- 5/8 5/8 3/8$ $N_L 1$ $N^{21/3} \%_{00} 5/8$
 $\%_{00} 1/3 C_R \otimes 5/8$ $\in - \oplus 5/8 L_F N_L N^{25/8} - N_L L_F$ $N_L 1$ $H_T 1/3 C_R N_L \in 1/8 \in H_T 1/3 N_L 5/8$ $V_T - 3/8 5/8 C_R$ $N_L \otimes 5/8$
 $\in - 1/8 5/8 - N_L \in \oplus 5/8$ $L_F 1/8 \otimes 5/8 N^{25/8} L_F \Sigma$ $\Psi \otimes \in 1/8 \otimes$ $1/8 1 V_T \%_{00} 3/8$ $\%_{00} \in N^0 \in N_L$ $N_L \otimes 5/8$ $\in N^0 H_T 1/3 1/8 N_L$ $1 -$
 $7/8 \in - 1/3 - 1/8 \in 1/3 \%_{00}$ $\%_{00} 5/8 \oplus 5/8 C_R 1/3 \otimes 5/8$ $\Psi \otimes \in \%_{00} 5/8$ $\in N^0 H_T C_R 1 \oplus 5/8 3/8$ $\oplus 5/8 C_R N_L \in 1/8 1/3 \%_{00}$
 $\in - N_L 5/8 \otimes C_R 1/3 N_L \in 1 -$ $L_F V_T H_T H_{T1} C_R N_L L_F$ $N_L \otimes 5/8 \in C_R$ $1/8 C_R 5/8 3/8 \in N_L$ $H_T C_R 17/8 \in \%_{00} 5/8 L_F P_t$

$\ddagger - 3/8 \in 1/3$ $C_R 5/8 1/3 3/8 \in 5/8 L_F$ $\bullet^0 P_t 1/4$ $2/3 \in \%_{00} \%_{00} \in 1 -$ $H_T \otimes 1/3 C_R N^{21/3}$ $\in - 1/8 5/8 - N_L \in \oplus 5/8$
 $L_F 1/8 \otimes 5/8 N^{25/8} 3$ $1/3 \in N^0 L_F$ $N_L 1$ $2/3 5/8$ $\bullet^0 1/2^a$ $2/3 \in \%_{00} \%_{00} \in 1 -$ $\in - 3/8 V_T L_F N_L C_R R_S$

$\circ \oplus 5/8 -$ $1/3 L_F$ $- \otimes \in - 1/3$ $L_F 5/8 N_L N_L \%_{00} 5/8 L_F$ $3/8 1 \Psi -$ $H_T 1 L_F N_L$ $- \blacksquare f f \ddagger, \Psi^0 \alpha \Sigma$ $N_L \otimes 5/8$
 $\ddagger - 3/8 \in 1/3 -$ $H_T \otimes 1/3 C_R N^{21/3} 1/8 5/8 V_T N_L \in 1/8 1/3 \%_{00}$ $\in - 3/8 V_T L_F N_L C_R R_S$ $\in L_F$ $2/3 C_R 1/3 1/8 \in - \otimes$ $\in N_L L_F 5/8 \%_{00} 7/8$
 $7/8 1 C_R$ $1/3$ $C_R 5/8 3/8 V_T 1/8 N_L \in 1 -$ $\in -$ $H_T C_R 17/8 \in N_L$ $N^{21/3} C_R \otimes \in - L_F$ $\in -$ $N_L \otimes 5/8$ $L_F \otimes 1 C_R N_L$ $N_L 5/8 C_R N^0 \Sigma$
 $\otimes \in \oplus 5/8 -$ $N_L \otimes 5/8$ $5/8 N^0 H_T 5/8 1/8 N_L 5/8 3/8$ $C_R \in L_F 5/8$ $\in -$ $N_L \otimes 5/8$ $H_T C_R \in 1/8 5/8 L_F$ $17/8$ $1/3 1/8 N_L \in \oplus 5/8$
 $H_T \otimes 1/3 C_R N^{21/3} 1/8 5/8 V_T N_L \in 1/8 1/3 \%_{00}$ $\in - \otimes C_R 5/8 3/8 \in 5/8 - N_L L_F$ $j^{\text{“}} \blacksquare \ddagger$ $1/3 - 3/8$ $\%_{00} 5/8 R_S$ $L_F N_L 1/3 C_R N_L \in - \otimes$
 $N^{21/3} N_L 5/8 C_R \in 1/3 \%_{00} L_F$ $j^{SM} - \bullet^0 P_t$ $“ \in N^0 \in - \otimes$ $N_L 1$ $C_R 5/8 3/8 V_T 1/8 5/8$ $\in N^0 H_T 1 C_R N_L$ $3/8 5/8 H_T 5/8 - 3/8 5/8 - 1/8 R_S$
 $1/3 - 3/8$ $N_L 1$ $1/3 N_L N_L 1/3 \in -$ $L_F 5/8 \%_{00} 7/8 \Psi C_R 5/8 \%_{00} \in 1/3 - 1/8 5/8$ $1/3 - 3/8$ $3/8 C_R V_T \otimes$ $L_F 5/8 1/8 V_T C_R \in N_L R_S \Sigma$ $N_L \otimes 5/8$
 $\ddagger - 3/8 \in 1/3 -$ $\otimes 1 \oplus 5/8 C_R - N^{25/8} - N_L$ $\otimes 1/3 L_F$ $3/8 5/8 1/8 \in 3/8 5/8 3/8$ $N_L 1$ $H_T C_R 1 \oplus \in 3/8 5/8$ $\in - 1/8 5/8 - N_L \in \oplus 5/8 L_F$
 $N_L 1$ $N_L \otimes 5/8$ $H_T \otimes 1/3 C_R N^{21/3} 1/8 5/8 V_T N_L \in 1/8 1/3 \%_{00}$ $\in - 3/8 V_T L_F N_L C_R R_S \Sigma$ $C_R 5/8 H_T 1 C_R N_L L_F$ $f f \otimes 5/8$ $\blacksquare \otimes 1/3 C_R N^{21/3}$
 $R 5/8 N_L N_L 5/8 C_R L_F$ $\ddagger - 3/8 \in 1/3$ $1/8 1 C_R C_R 5/8 L_F H_T 1 - 3/8 5/8 - N_L P_t$

$\circ \in - 1/3 \%_{00}$ $\otimes V_T \in 3/8 5/8 \%_{00} \in - 5/8 L_F$ $7/8 1 C_R$ $1/3$ $\blacksquare C_R 13/8 V_T 1/8 N_L \in 1 -$ $R \in - \%_{00} 5/8 3/8$
 $\ddagger - 1/8 5/8 - N_L \in \oplus 5/8$ $j^{\text{“}} R \ddagger$ $- 1/8 \otimes 5/8 N^{25/8}$ $1/3 C_R 5/8$ $2/3 5/8 \in - \otimes$ $3/8 5/8 \%_{00} \in 2/3 5/8 C_R 1/3 N_L 5/8 3/8$ $\in -$
 $\otimes 1 \oplus 5/8 C_R - N^{25/8} - N_L$ $1/8 \in C_R 1/8 \%_{00} 5/8 L_F \Sigma$ $\Psi \in N_L \otimes$ $N_L \otimes 5/8$ $\otimes 1 \oplus 5/8 C_R - N^{25/8} - N_L$ $L_F 11 -$ $N_L 1$
 $V_T - \oplus 5/8 \in \%_{00}$ $1/3$ $\bullet^0 P_t 1/4$ $2/3 \in \%_{00} \%_{00} \in 1 -$ $H_T \%_{00} 1/3 -$ $N_L 1$ $2/3 11 L_F N_L$ $3/8 1 N^{25/8} L_F N_L \in 1/8$ $“ \blacksquare \ddagger$ $1/3 - 3/8$
 $j^{SM} - \bullet^0$ $H_T C_R 13/8 V_T 1/8 N_L \in 1 - P_t$

$f f \otimes 5/8$ $L_F 1/8 \otimes 5/8 N^{25/8}$ $\in - \oplus 10 \%_{00} \oplus 5/8 L_F$ $17/8 7/8 5/8 C_R \in - \otimes$ $\blacksquare R \ddagger L_F$ $\Psi^1 C_R N_L \otimes$ $\bullet^0 \alpha^0$
 $N^0 \in \%_{00} \%_{00} \in 1 -$ $N_L 1$ $1/8 1 N^0 H_{T1} 1/3 - \in 5/8 L_F$ $N_L \otimes 1/3 N_L$ $\Psi \in \%_{00} \%_{00}$ $\in - \oplus 5/8 L_F N_L$ $\in -$ $3/8 1 N^{25/8} L_F N_L \in 1/8$
 $N^{21/3} - V_T 7/8 1/3 1/8 N_L V_T C_R \in - \otimes$ $17/8$ $1/8 C_R \in N_L \in 1/8 1/3 \%_{00}$ $j^{SM} - \bullet^0 L_F$ $C_R 5/8 F F V_T \in C_R 5/8 3/8$ $N_L 1$ $H_T C_R 13/8 V_T 1/8 5/8$
 $“ \blacksquare \ddagger L_F P_t$ $“ - 1 N_L \otimes 5/8 C_R$ $\bullet^0 1/4 \alpha^0 1/4$ $N^0 \in \%_{00} \%_{00} \in 1 -$ $\otimes 1/3 L_F$ $2/3 5/8 5/8 -$ $C_R 5/8 L_F 5/8 C_R \oplus 5/8 3/8$ $7/8 1 C_R$
 $1/8 C_R 5/8 1/3 N_L \in - \otimes$ $2/3 V_T \%_{00} \%_{00} \Psi 3/8 C_R V_T \otimes$ $H_T 1/3 C_R \%_{00} L_F$ $\in -$ $\oplus 1/3 C_R \in 1 V_T L_F$ $L_F N_L 1/3 N_L 5/8 L_F P_t$

“— $17/87/8 \in 1/8 \in 1/3\%$ $L_{F1/3} \in 3/8$ • 202 $N^{\circ} \in 0\%000 \in 1 - 17/8$ $N_L \in L_F$ $1/3 N^{21} V_T - N_L$ $\odot 1/3 L_F$
 $2/35/85/8 - C_{R5/8} L_{F5/8} C_{R5/8} 5/83/8$ $7/81 C_R$ $1/21/4$ $1/8 \odot 5/8 N^{\circ} \in 1/81/3\%$ $L_{FRS} - N_L \odot 5/8 L_F \in L_F \forall 2/31/3 L_{F5/8} 3/8$ “ $\ddagger L_F$
 $\in -1/8\%$ $V_{T3/8} \in -\odot$ $\odot R_S H_{T5/8} C_{RN} L_{5/8} - L_F \in 1 - N^{25} 83/8 \in 1/81/3 N_L \in 1 - L_F V_{T1/8} \odot$ $1/3 L_F$ $\%001 L_F 1/3 C_{RN} L_{1/3} -$
 $1/3 - 3/8$ $\oplus 1/3\%$ $L_F 1/3 C_{RN} L_{1/3} - \Sigma$ $1/3 - N_L \in \forall \ddagger \ddagger \ddagger \ddagger$ $3/8 C_R V_{T\odot} L_F$ $L_F V_{T1/8} \odot$ $1/3 L_F$ $\%001 H_T \in -1/3 \oplus \in C_R$ $1/3 - 3/8$
 $C_R \in N_L 1 - 1/3 \oplus \in C_R \Sigma$ $1/3 L_F$ $\forall 5/8\%$ $\%000$ $1/3 L_F$ $1/8 \odot 1\%$ $5/8 L_F N_L 5/8 C_R 1\%$ $\%0001 \forall 5/8 C_R \in -\odot$ $3/8 C_R V_{T\odot} L_F$
 $L_F V_{T1/8} \odot$ $1/3 L_F$ $1/3 N_L 1 C_R \oplus 1/3 L_F N_L 1/3 N_L \in -P_t$

$fi \odot \in \%005/8$ • $^{21/4}$ $N^{\circ} \in 0\%000 \in 1 - \odot 1/3 L_F$ $2/35/85/8 - C_{R5/8} L_{F5/8} C_{R5/8} 5/83/8$ $7/81 C_R$ $1/2^a$
 $2/35/8 - 5/87/8 \in 1/8 \in 1/3 C_{RRS}$ $1/81 N^{21} H_{T1/3} - \in 5/8 L_F$ $\forall \odot 1$ $1/3 C_{R5/8}$ $N_L 1$ $N_L 1/3 \%5/8$ V_{TH_T} $- \in 1/8 \odot 5/8$
 $7/85/8 C_{RN} N^{25} 8 - N_L 1/3 N_L \in 1 - \forall 2/31/3 L_{F5/8} 3/8$ $H_T C_{R13/8} V_{T1/8} N_L$ $1/81/3 N_L 5/8 \odot 1 C_R \in 5/8 L_F$ $L_F V_{T1/8} \odot$ $1/3 L_F$
 $1/8 R_S 1/8\%$ $\in -5/8 L_F$ $V_{TLF5/8} 3/8$ $7/81 C_R$ $3/81 N R_S 1/8 R_S 1/8\%$ $\in -5/8 \Sigma$ $1/3 N^{\circ} \in -1\%$ $\%000 R_S 1/81 L_F \in 3/85/8$ $7/81 C_R$
 $\odot 5/8 - N_L 1/3 N^{\circ} \in 1/8 \in -\Sigma$ $L_F N_L C_{R5/8} H_T N_L 1 N^{\circ} R_S 1/8 \in -\Sigma$ $L_F N_L 5/8 C_{R1} \in 3/8 L_F \Sigma$ $1/3 - N_L \in \forall \ddagger \ddagger -$ $3/8 C_R V_{T\odot} L_F$
 $\%00 \in \%5/8$ $C_R \in 7/81/3 N^{21} H_T \in 1/8 \in -\Sigma$ $\oplus \in N_L 1/3 N^{\circ} \in -L_F$ $1/3 - 3/8$ $\%00 \in -1/81 L_F 1/3 N^{\circ} \in 3/85/8 L_F \Sigma$ V_{TH_T} $N_L 1$
• $^{21/2^2}$ $N^{\circ} \in 0\%000 \in 1 - \odot 1/3 L_F$ $2/35/85/8 - C_{R5/8} L_{F5/8} C_{R5/8} 5/83/8$ $7/81 C_R$ 21 $2/35/8 - 5/87/8 \in 1/8 \in 1/3 C_R \in 5/8 L_F$
 $\forall \odot 1$ $1/3 C_{R5/8}$ $N_L 1$ $N_L 1/3 \%5/8$ V_{TH_T} $H_T C_{R13/8} V_{T1/8} N_L \in 1 - 17/8$ $7/81 V_{TCR}$ $1/8 C_R V_{T1/8} \in 1/3\%$ $SM - \bullet L_F$
 $N^{21} 3/85/8$ $N_L \odot C_{R1} V_{T\odot} \odot$ $1/8 \odot 5/8 N^{\circ} \in 1/81/3\%$ $L_{FRS} - N_L \odot 5/8 L_F \in L_F P_t$

$\odot 5/8 C_{RN} N^{25} 8 - N_L 1/3 N_L \in 1 - 2/31/3 L_{F5/8} 3/8$ $SM - \bullet L_F f 3/8 C_R V_{T\odot}$ $\in -N_L 5/8 C_{RN} N^{25} 83/8 \in 1/3 N_L 5/8 L_F$
 $1/3 - 3/8$ $1/81 C_R C_{R5/8} L_F H_{T1} - 3/8 \in -\odot$ “ $\ddagger L_F$ $\in 3/85/8 - N_L \in 7/8 \in 5/83/8$ $1/3 C_{R5/8}$ $H_{T5/8} - \in 1/8 \in \%00\%$ $\in - \square f$
 $n \forall N^{\circ} \in -1$ $H_{T5/8} - \in 1/8 \in \%00\%001/3 - \in 1/8$ $1/31/8 \in 3/8$ $j^n \forall$ “ \ddagger $1/85/8 H_{T\odot} 1/3\%$ $001 L_F H_{T1} C_R \in -$ $-f$ $\odot \forall$
 $1/3 N^{\circ} \in -1$ $1/85/8 H_{T\odot} 1/3\%$ $001 L_F H_{T1} C_{R1/3} - \in 1/8$ $1/31/8 \in 3/8$ $j \odot \forall “N_L$ “ \ddagger $5/8 C_{RRS} N_L \odot C_{R1} N^{\circ} R_S 1/8 \in -$
 $N_L \odot \in 11/8 R_S 1/3 - 1/3 N_L 5/8 f$ $\ddagger \ddagger \ddagger \ddagger -$ $H_{T1} N_L 1/3 L_F L_F \in V_{TN}^{\circ}$ $1/8\%$ $001/3 \oplus V_{T\odot} 001/3 - 1/3 N_L 5/8 P_t$

$- \odot 5/8 N^{\circ} \in 1/81/3\%$ $L_{FRS} - N_L \odot 5/8 L_F \in L_F$ $2/31/3 L_{F5/8} 3/8$ $SM - \bullet L_F$ $j \forall \in N_L \odot$ $2/31/31/8 \%u \forall 1/3 C_{R3/8}$
 $\in -N_L 5/8 \odot C_{R1/3} N_L \in 1 - \ddagger$ $\in 3/85/8 - N_L \in 7/8 \in 5/83/8$ $1/3 C_{R5/8}$ $3/8 \in 1/8 R_S 1/3 - 3/8 \in 1/3 \in - \in 3/85/8$ $j \leftarrow \S “\ddagger^3$
 $H_{T1/3} C_{R1/3} \forall 1/3 N^{\circ} \in -1 H_{T\odot} 5/8 - 1\%$ 00^3 $1/2 \forall N^{25} 8 N_L \odot R_S \%$ $\%00 \forall 2^{\circ}$ $\in N_L C_{R1} \forall \in -$ $\in 3/81/3 MD1\%$ $005/8$ $j 1/2 \forall \bullet \odot \ddagger \ddagger$
 $\in -1/8\%$ $V_{T3/8} \in -\odot$ $\%00 \in \forall$ $\in 3/81/3 MD1\%$ $005/8 L_F^3$ $\%00 \Sigma$ $\ddagger - \S R_S 1/8\%$ $001 \odot 5/8 \forall 1/3 - 1/8$ $3/8 \in 1/31/81/8 N_L \in 1/8$
 $1/31/8 \in 3/8$ $j -$ “ $\ddagger P_t$

$\pm N^{\circ}H_1C_RN_L$,5/8 $H_T5/8-3/85/8-1/85/8$

$\pm-3/8\in1/3S_LF$ ■ $R\pm$ $L_F1/8^{\circ}5/8N^{\circ}5/8$ $\in-N_L5/8-3/8L_F$ N_L1 $2/311L_FN_L$ $3/81N^{\circ}5/8L_FN_L\in1/8$
 $H_TC_R13/8V_T1/8N_L\in1-$ $17/8$ $2/3V_T00\%$ $3/8C_RV_T\otimes L_F$ $\in-1/800V_T3/8\in-\otimes$ $SM-\bullet\Omega$ $3/8C_RV_T\otimes$
 $\in-N_L5/8C_RN^{\circ}5/83/8\in1/3C_R\in5/8L_F\Omega$ $1/3-3/8$ “■ $\pm L_F$ $7/81C_R$ $1/3-N_L\in2/3\in1N_L\in1/8L_F\Omega$ $L_FN_L5/8C_R1\in3/8L_F\Omega$
 $1/3-N_L\in\forall N_LV_T2/35/8C_R1/8V_T001L_F\in L_F$ $jff-\zeta\Omega$ $1/3-3/8$ $3/8\in1/32/35/8N_L\in1/8$ $N^{\circ}5/83/8\in1/81/3N_L\in1-$
 $1/3N^{\circ}1-\otimes L_FN_L$ $1N_L^{\circ}5/8C_RL_F\Omega$ $\in3/85/8-N_L\in7/8\in5/83/8$ $1/3L_F$ $1/8C_R\in N_L\in1/81/300$ $7/81C_R$
 $N^{\circ}1/3-V_T7/81/31/8N_LV_TC_R\in-\otimes$ $\in-$ $\pm-3/8\in1/3P_t$ $\pm-3/8\in1/3$ $\in L_F$ $3/85/8H_T5/8-3/85/8-N_L$ $1-$ $N_L^{\circ}5/8$
 $\in N^{\circ}H_1C_RN_L$ $17/8$ $N_L^{\circ}5/8L_F5/8$ $2/31/3L_F\in1/8$ $C_R1/3W$ $N^{\circ}1/3N_L5/8C_R\in1/300L_F$ $N_L\otimes1/3N_L$ $1/3C_R5/8$ $V_TL_F5/83/8$
 N_L1 $H_TC_R13/8V_T1/85/8$ $7/8\in-\in L_F\otimes5/83/8$ $3/81L_F1/3\otimes5/8$ $7/81C_RN^{\circ}V_T001/3N_L\in1-L_FP_t$

$ff\otimes5/8$ $ffC_R1/33/85/8$ ■ $C_R1N^{\circ}1N_L\in1-$ $-1V_T-1/8\in00$ $17/8$ $\pm-3/8\in1/3$ $L_FN_L1/3N_L5/8L_F$ $\pm-3/8\in1/3$
 $\in N^{\circ}H_1C_RN_LL_F$ $1/32/31V_TN_L$ \otimes_2^* $17/8$ $\in N_LL_F$ $N_L1N_L1/300$ $C_R5/8F_VTC_R5/8N^{\circ}5/8-N_L$ $17/8$ “■ $\pm L_F$
 $7/8C_R1N^{\circ}$ $-\otimes\in-1/3P_t$ “ $1/81/81C_R3/8\in-\otimes$ N_L1 $L_FN_L1/3N_L\in L_FN_L\in1/8L_F$ $7/8C_R1N^{\circ}$ $N_L^{\circ}5/8$
 $\in C_R5/81/8N_L1C_R1/3N_L5/8$ $\square5/8-5/8C_R1/300$ $17/8$ $-1N^{\circ}N^{\circ}5/8C_R1/8\in1/300$ $\pm-N_L5/80000\in\otimes5/8-1/85/8\Omega$ $n\otimes^*$
 $17/8$ $N_L1N_L1/300$ $\in N^{\circ}H_1C_RN_LL_F$ $17/8$ $2/3V_T00\%$ $3/8C_RV_T\otimes L_F$ $\in-$ $7/8\in L_F1/81/300$ $Rs5/81/3C_R$ $1/2^{\otimes\otimes}\forall^{\otimes\otimes}$
 $1/81/3N^{\circ}5/8$ $7/8C_R1N^{\circ}$ $-\otimes\in-1/3\Omega$ $7/81000001W5/83/8$ $2/3Rs$ $N_L^{\circ}5/8$ $ffi-$ $1/3-3/8$ $\pm N_L1/300RsP_t$

$\pm-3/8\in1/3'L_F$ $3/85/8H_T5/8-3/85/8-1/85/8$ $1-$ $-\otimes\in-1/3$ $7/81C_R$ “■ $\pm L_F$ $1/3-3/8$ $2/3V_T00\%$
 $3/8C_RV_T\otimes L_F$ $1/81/3-$ $2/35/8$ $1/3N_LN_LC_R\in2/3V_TN_L5/83/8$ N_L1 $N_L^{\circ}5/8$ $7/81/31/8N_L$ $N_L\otimes1/3N_L$ $-\otimes\in-5/8L_F5/8$
 $\in N^{\circ}H_1C_RN_LL_F$ $1/3C_R5/8$ $1/2^a\star\forall1/4^a\star$ $1/8^{\circ}5/81/3H_T5/8C_R$ $N_L\otimes1/3-$ $N_L^{\circ}5/8\in C_R$ $\pm-3/8\in1/3-$
 $1/81V_T-N_L5/8C_RH_T1/3C_RN_LL_FP_t$

$ff\otimes C_R1V_T\otimes\otimes$ $1/3$ $C_R5/81/85/8-N_L$ $-1N_L\in7/8\in1/81/3N_L\in1-\Omega$ $N_L^{\circ}5/8$,5/8 $H_T1/3C_RN_LN^{\circ}5/8-N_L$ $17/8$
■ $\otimes1/3C_RN^{\circ}1/31/85/8V_TN_L\in1/81/300L_F$ $j^{\circ}1^{\circ}\zeta$ $C_R1000005/83/8$ $1V_TN_L$ $3/8C_R1/37/8N_L$ $\otimes V_T\in3/85/800\in-5/8L_F$
 $7/81C_R$ $N_L^{\circ}5/8$ ■ $R\pm$ $L_F1/8^{\circ}5/8N^{\circ}5/8P_t$ $ff\otimes5/8$ $\otimes V_T\in3/85/800\in-5/8L_F$ $W5/8C_R5/8$ $H_TC_R5/8H_T1/3C_R5/83/8$ $2/3Rs$
 $1/3$ $N_L5/81/8\otimes-\in1/81/300$ $1/81N^{\circ}N^{\circ}\in N_LN_L5/85/8\Omega$ $\otimes5/81/33/85/83/8$ $2/3Rs$ $TM1\in-N_L$, $C_RV_T\otimes L_F$
 $-1-N_LC_R1000005/8C_R$ $-$, $L_FW1/3C_R1/3$ $\square5/83/83/8RsP_t$

$ff\otimes5/8$ $1/81N^{\circ}N^{\circ}\in N_LN_L5/85/8$ $C_R5/81/81N^{\circ}N^{\circ}5/8-3/85/83/8$ $L_F5/8N_LN_L\in-\otimes$ V_TH_T $1/3$, $C_RV_T\otimes$
 $-5/81/8V_TC_R\in N_LRs$ “ $V_TN_L\otimes1C_R\in N_LRs$ $j^{\circ}-\zeta$ $V_T-3/85/8C_R$ $N_L^{\circ}5/8$, $1^{\circ}\Omega$ $W\otimes\in1/8\otimes$ $\in L_F$ $1\otimes5/8C_RL_F5/85/8-$
 $2/3Rs$ $N_L^{\circ}5/8$ $\bullet\in-\in L_FN_LC_RRs$ $17/8$ $-\otimes5/8N^{\circ}\in1/81/300L_F$ $1/3-3/8$ $O5/8C_RN_L\in00\in MD5/8C_RL_FP_t$

ff^{5/8} “ €_L N_L¹ N^{21/3} %_{5/8} ‡-3/8 €_{1/3} L^{5/8} %₀₀ 7/8 ¥_L V_T 7/8 7/8 €_{1/8} €_{5/8} -N_L 1/3-3/8 1/3 %₀₀ L_F¹ 5/8 %₀₀ H_T €_N 2/3 5/8 1/8 1 N^{25/8} 1/3 %₀₀ 12/3 1/3 %₀₀ %₀₀ 5/8 1/3 3/8 5/8 €_R €- N^{21/3} -V_T 7/8 1/3 1/8 N_L V_T €_R €-^{17/8} “ ‡_L F_£ %_{5/8} R_S L_F N_L 1/3 €_R N_L €-^{17/8} N^{21/3} N_L 5/8 €_R €_{1/3} %₀₀ L_F £ €-N_L 5/8 €_R N^{25/8} 3/8 €_{1/3} N_L 5/8 1/3-3/8 1/8 5/8 N²⁰ €_{1/8} 1/3 %₀₀ L_F 7/8 1 €_R 3/8 1 N^{25/8} L_F N_L €_{1/8} 1/3 L_F W^{5/8} %₀₀ %₀₀ 1/3 L_F 5/8 N²¹ H_T 1 €_R N_L P_t ff^{5/8} 1/3 €_N²⁰ €_L €_N L₁ 5/8 -L_F V_T €_R 5/8 ‡-3/8 €_{1/3} 2/3 5/8 1/8 1 N^{25/8} L_F 1/3 •^{21/2} 2/3 €₀₀ %₀₀ €₁ - €₁ -3/8 V_T L_F N_L €_R R_S €-²⁰ R_S 5/8 1/3 €_R L_F 1/3-3/8 N_L €_R 1/3 -L_F 7/8 1 €_R N²⁰ L_F €_N L_F 5/8 %₀₀ 7/8 €₁ -N_L L₁ 1/3 ©_{V_T} 5/8 H_T ©_{1/3} €_R N^{21/3} 1/8 5/8 V_T N_L €_{1/8} 1/3 %₀₀ N^{21/3} €_R %_{5/8} N_L P_t

W^{5/8} €_R N_L -1 N²⁰ N²⁰ €_N N_L 5/8 5/8

“ ©€²⁰ %₀₀ 5/8 ©^{5/8} %₀₀ 1/8 1 N²⁰ N²⁰ €_N N_L 5/8 5/8 17/8 5/8 W^{5/8} €_R N_L L_F 7/8 1 €_R N^{25/8} 3/8 1/3 N_L N_L 5/8 L_F N_L 1/3 €_R N_L 17/8 N_L 5/8 R_S 5/8 1/3 €_R 2/3 R_S N_L 5/8 ©¹ ©^{5/8} €_R -N^{25/8} -N_L N_L L₁ €_R 5/8 1/8 1 N²⁰ N^{25/8} -3/8 €_R 5/8 7/8 1 €_R N²⁰ L_F €- ‡-3/8 €_{1/3} §_L F 3/8 €_R V_T ©_R 5/8 ©_{V_T} %₀₀ 1/3 N_L 1 €_R R_S L_F R_S L_F N_L 5/8 N²⁰ ©_{1/3} 3/8 ©€²⁰ %₀₀ €₀₀ N_L 5/8 3/8 N_L 5/8 1 ©^{5/8} €_R 1/3 €_R 1/8 ©€²⁰ - €_R 5/8 %₀₀ €_{1/3} -1/8 5/8 1- €_N N²⁰ H_T 1 €_R N_L L_F 7/8 €_R 1 N²⁰ -©€²⁰ -1/3 P_t

©¹⁰ %₀₀ %₀₀ 1 W^{5/8} €²⁰ -N_L 5/8 €_R 5/8 1/8 1 N²⁰ N^{25/8} -3/8 1/3 N_L €₁ - 17/8 N_L 5/8 1/8 1 N²⁰ N²⁰ €_N N_L 5/8 5/8 N_L 5/8 ©¹ ©^{5/8} €_R -N^{25/8} -N_L ©_{1/3} 3/8 £ €- •^{1/3} €_R 1/8 ©_N N_L 5/8 -N_L 1/3 N_L €₁ ©^{5/8} %₀₀ R_S 1/3 H_T H_T €_R 1 ©^{5/8} 3/8 N_L 5/8 ■ R_‡ L_F 1/8 5/8 N^{25/8} P_t ■ %₀₀ 1/3 -L_F W^{5/8} €_R 5/8 5/8 L_F 1/8 1/3 %₀₀ 1/3 N_L 5/8 3/8 1/3 L_F L_F V_T H_T H_T %₀₀ R_S 1/8 ©_{1/3} €₁ -L_F W^{5/8} €_R 5/8 3/8 €_L €_R V_T H_T N_L 5/8 3/8 2/3 R_S N_L 5/8 1/8 1 €_R 1 -1/3 ©^{5/8} €_R V_T L_F 1 V_T N_L 2/3 €_R 5/8 1/3 %₀₀ €₁ - ©€²⁰ -1/3 £ L_F H_T 1/3 €_R %₀₀ €²⁰ - 7/8 5/8 1/3 €_R L_F 17/8 3/8 €_R V_T ©_L €_R N_L 1/3 5/8 L_F €₁ - ‡-3/8 €_{1/3} P_t

“ V_T N_L ©₁ €_R €_N €_{5/8} L_F €_R 5/8 1/3 1/8 5/8 3/8 1 V_T N_L N_L L₁ 1 ©^{5/8} €_R ©²⁰ “ ‡ N^{21/3} -V_T 7/8 1/3 1/8 N_L V_T €_R 5/8 €_R L_F 1/3 L_F W^{5/8} %₀₀ %₀₀ 1/3 L_F H_T €_R 13/8 V_T 1/8 5/8 €_R L_F 17/8 1 N_L 5/8 €_R €_R 1/3 W^{5/8} N^{21/3} N_L 5/8 €_R €_{1/3} %₀₀ L_F %₀₀ €₀₀ %_{5/8} €₁ -N_L 5/8 €_R N^{25/8} 3/8 €_{1/3} €_R €_{5/8} L_F 1/3-3/8 %_{5/8} R_S L_F N_L 1/3 €_R N_L €²⁰ - €²⁰ €_R 5/8 3/8 €_{5/8} -N_L L_F 1 ©^{5/8} €_R N_L 5/8 -5/8 N_L 7/8 5/8 W^{5/8} W^{5/8} 5/8 %₀₀ L_F £ €₁ - 1 €_R 3/8 5/8 €_R N_L L₁ 7/8 €₁ -1/3 %₀₀ €_L F_{5/8} 3/8 €_R 1/3 7/8 N_L ©_{V_T} €_{3/8} 5/8 %₀₀ €₁ -5/8 L_F 17/8 N_L 5/8 L_F 1/8 5/8 N^{25/8} P_t

€_R V_T ©_N N^{21/3} -V_T 7/8 1/3 1/8 N_L V_T €_R 5/8 €_R L_F W^{5/8} ©¹ 1/8 1/3 - 5/8 -L_F V_T €_R 5/8 §²⁰ €²⁰ 5/8 €_R H_T €_R 13/8 V_T 1/8 N_L €₁ - 1/8 1/3 H_T 1/3 1/8 €_N €_{5/8} L_F §_{1/3} -3/8 V_T L_F 5/8 %₀₀ 1/3 N_L 5/8 L_F N_L 5/8 1/8 ©¹⁰ -100 %¹⁰ €_{5/8} L_F N_L ©_{1/3} N_L 1/3 €_R 5/8 %₀₀ 5/8 L_F L_F H_T 100 %₀₀ V_T N_L €²⁰ - L_F V_T 1/8 ©_{1/3} L_F §²⁰ €_R 5/8 5/8 - 1/8 5/8 N²⁰ €_L F_N €_R R_S £ 7/8 %₀₀ 1 W^{5/8} 1/8 5/8 N²⁰ €_L F_N €_R R_S 7/8 1 €_R H_T €_R 13/8 V_T 1/8 N_L €₁ - §_{1/3} €_R 5/8 N_L L₁ 2/3 5/8 €₁ -1/8 5/8 -N_L €₁ ©^{5/8} €_L F_{5/8} 3/8 P_t

— $\odot^5_8N^{\circ}\in\frac{1}{8}\frac{1}{3}\% \nmid -N^{\frac{5}{8}}_5FRN^{\frac{25}{8}}_3\frac{3}{8}\in\frac{1}{3}N^{\frac{5}{8}}_5LF$

● $1FR^5_8 \quad N^{\circ}\frac{1}{3}- \quad \frac{1}{2}\odot \quad \frac{2}{3}V_T\% \cup \quad \frac{3}{8}FRV_T\odot LF \quad \frac{1}{8}1\oplus^5_8FR\in-\odot \quad \frac{3}{8}\in\frac{7}{8}\frac{7}{8}\frac{5}{8}FR^5_8-N^{\circ}$
 $N^{\circ}\odot^5_8FR\frac{1}{3}H_T^5_8V_TN^{\circ}\in\frac{1}{8} \quad \frac{1}{8}\% \cup \frac{1}{3}LF^5_8LF \quad LFV_T\frac{1}{8}\odot \quad \frac{1}{3}LF \quad \frac{1}{3}-N^{\circ}\in\mathbb{Y}\oplus\in FR\frac{1}{3}\% \odot$
 $FR^5_8N^{\circ}FR^1\oplus\in FR\frac{1}{3}\% \odot \quad \frac{1}{3}-N^{\circ}\in\mathbb{E}^{\frac{2}{3}}_3\in N^{\circ}\in\frac{1}{8}LF\mathbb{E} \quad \frac{1}{3}-N^{\circ}\in\mathbb{Y}^{\frac{2}{3}}_3\frac{1}{3}\frac{1}{8}N^{\circ}_5FR\in\frac{1}{3}\% \odot \quad \frac{1}{3}-N^{\circ}\in\mathbb{Y}$
 $\frac{7}{8}V_T-\odot\frac{1}{3}\% \odot \quad \frac{1}{8}\frac{1}{3}FR^3_8\in 1\oplus^{\frac{1}{3}}_3LF\frac{1}{8}V_T\% \cup \frac{1}{3}FR\mathbb{E} \quad \frac{3}{8}\in\frac{1}{3}\frac{2}{3}\frac{5}{8}N^{\circ}_5LF\mathbb{E} \quad \frac{1}{8}\odot\frac{1}{\%}\% \frac{5}{8}LFN^{\circ}_5FR^1\% \cup$
 $\% \cup 1\mathbb{W}^5_8FR\in-\odot \quad \frac{1}{3}-N^{\circ}\in\mathbb{Y}\frac{1}{8}\frac{1}{3}-\frac{1}{8}\frac{5}{8}FR\mathbb{E} \quad \frac{1}{3}-\frac{3}{8} \quad H_T\frac{1}{3}\in- \quad \% \cup \% \cup \% \cup \frac{5}{8}FR LF \quad LFV_T\frac{1}{8}\odot \quad \frac{1}{3}LF$
 $H_T\frac{1}{3}FR\frac{1}{3}\frac{1}{8}\frac{5}{8}N^{\circ}_5\frac{1}{3}N^{\circ}\% \cup \quad \frac{1}{3}FR^5_8 \quad LFRs-N^{\circ}\odot^5_8LF\in MD^5_8\frac{3}{8} \quad \frac{7}{8}FR^1N^{\circ} \quad \frac{1}{3}\frac{2}{3}\frac{1}{3}V_TN^{\circ} \quad \mathbb{Y}\mathbb{Y}^{\frac{2}{3}}_3\frac{1}{2}$
 $LF\in N^{\circ}H_T\% \cup \frac{5}{8}FR \quad \frac{2}{3}V_T\in\% \cup \frac{3}{8}\in-\odot \quad \frac{2}{3}\% \cup \frac{1}{8}\% \cup LF \quad 1FR \quad SM-\bullet LF\mathbb{E} \quad \frac{3}{8}FRV_T\odot$
 $\in-N^{\circ}_5FRN^{\frac{25}{8}}_3\frac{3}{8}\in\frac{1}{3}N^{\circ}_5LFPt$

$\nmid - \quad \frac{1}{8}1-LFV_T\% \cup N^{\circ}_5\frac{1}{3}N^{\circ}\in 1- \quad \mathbb{W}\in N^{\circ} \quad \in-\frac{3}{8}V_TLFN^{\circ}_5FRs \quad \frac{5}{8}N^{\circ}H_T^5_8FRN^{\circ}_5LF \quad 1-$
 $\frac{5}{8}LF^5_8-N^{\circ}\in\frac{1}{3}\% \cup \quad \blacksquare \nmid LF\mathbb{E} \quad N^{\circ}\odot^5_8 \quad 1FR^{\circ}\frac{1}{3}-\in\frac{1}{8} \quad \frac{1}{8}\odot^5_8N^{\circ}\in LFN^{\circ}_5FRs \quad \frac{1}{3}-\frac{3}{8} \quad \frac{1}{8}\odot^5_8N^{\circ}\in\frac{1}{8}\frac{1}{3}\% \cup$
 $\frac{5}{8}-\odot\in-\frac{5}{8}\frac{5}{8}FR\in-\odot \quad LF\frac{1}{8}\in\frac{5}{8}-N^{\circ}\in LFN^{\circ}_5LF \quad \frac{1}{7}\frac{8} \quad N^{\circ}\odot^5_8 \quad \odot\frac{1}{3}N^{\circ}\in 1-\frac{1}{3}\% \cup \quad -\odot^5_8N^{\circ}\in\frac{1}{8}\frac{1}{3}\% \cup$
 $R\frac{1}{3}\frac{2}{3}\frac{1}{3}FR\frac{1}{3}N^{\circ}_5FRs \quad \frac{1}{3}-\frac{1}{3}\% \cup RsLF^5_8\frac{3}{8} \quad N^{\circ}\odot^5_8 \quad LFN^{\circ}_5FRV_T\frac{1}{8}N^{\circ}_5V_TFR^5_8LF \quad \frac{1}{7}\frac{8} \quad \frac{1}{8}\odot^5_8N^{\circ}\in\frac{1}{8}\frac{1}{3}\% \cup$
 $\in-N^{\circ}_5FRN^{\frac{25}{8}}_3\frac{3}{8}\in\frac{1}{3}N^{\circ}_5LF \quad \frac{1}{3}-\frac{3}{8} \quad N^{\circ}\odot^5_8 \quad LFN^{\circ}_5\frac{1}{3}N^{\circ}_5 \quad \frac{1}{7}\frac{8} \quad FR^5_8\frac{1}{3}\frac{3}{8}\in-\frac{5}{8}LF LF \quad \frac{7}{8}\frac{1}{8}FR$
 $\frac{5}{8}N^{\circ}H_T\% \cup 1Rs\in-\odot \quad LFRs-N^{\circ}\odot^5_8N^{\circ}\in\frac{1}{8} \quad FR^1V_TN^{\circ}_5LF\mathbb{E} \quad \mathbb{W}^{\circ}\in\frac{1}{8}\odot \quad \frac{1}{3}FR^5_8 \quad LF\frac{1}{8}\frac{1}{3}\% \cup \frac{1}{3}\frac{2}{3}\% \cup \frac{5}{8}$
 $\frac{1}{3}-\frac{3}{8} \quad \frac{5}{8}\frac{1}{8}1-1N^{\circ}\in\frac{1}{8}\frac{1}{3}\% \cup Pt$

$\odot 1FR \quad \frac{7}{8}\frac{1}{8}V_TFR \quad \frac{3}{8}FRV_T\odot \quad \in-N^{\circ}_5FRN^{\frac{25}{8}}_3\frac{3}{8}\in\frac{1}{3}N^{\circ}_5LF\mathbb{E} \quad \frac{2}{3}V_T\% \cup \quad \frac{1}{8}\odot^5_8N^{\circ}\in\frac{1}{8}\frac{1}{3}\% \cup LF\mathbb{E}$
 $\square \nmid \nmid \in LF \quad V_T-\frac{3}{8}\frac{5}{8}FR\mathbb{W}^{\frac{1}{3}}_3Rs \quad \frac{1}{3}-\frac{3}{8} \quad \in LF \quad N^{\circ}_5 \quad \frac{2}{3}\frac{5}{8} \quad \frac{7}{8}\frac{1}{3}LFN^{\circ}_5 \quad N^{\circ}_5FR\frac{1}{3}\frac{1}{8}\% \cup \frac{5}{8}\frac{3}{8}Pt \quad \odot 1FR$
 $\frac{1}{3}-1N^{\circ}\odot^5_8FR \quad \frac{7}{8}\in\oplus^5_8 \quad N^{\circ}\% \cup \frac{5}{8}\frac{1}{8}V_T\% \cup \frac{5}{8}LF\mathbb{E} \quad N^{\circ}\odot^5_8 \quad N^{\circ}_5LFN^{\circ}_5 \quad \frac{5}{8}\frac{7}{8}\frac{7}{8}\in\frac{1}{8}\in\frac{5}{8}-N^{\circ}_5 \quad FR^1V_TN^{\circ}_5LF$
 $\frac{1}{8}1-LF\in\frac{3}{8}\frac{5}{8}FR\in-\odot \quad \frac{1}{3}N^{\circ}_51N^{\circ} \quad \frac{5}{8}\frac{1}{8}1-1N^{\circ}Rs\mathbb{E} \quad -1\oplus^5_8\% \cup \quad \frac{1}{8}\frac{1}{3}N^{\circ}_5\frac{1}{3}\% \cup RsLF\in LF\mathbb{E} \quad \frac{7}{8}\% \cup 1\mathbb{W}$
 $\frac{1}{8}\odot^5_8N^{\circ}\in LFN^{\circ}_5FRs\mathbb{E} \quad H_TFR^{11}\frac{5}{8}\frac{5}{8}LF LF \quad \in-N^{\circ}_5-LF\in\frac{7}{8}\in\frac{1}{8}\frac{1}{3}N^{\circ}\in 1-\mathbb{E} \quad \odot\frac{1}{3}\oplus^5_8 \quad \frac{2}{3}\frac{5}{8}\frac{5}{8}-$
 $\frac{3}{8}\frac{5}{8}LF\in\odot-\frac{5}{8}\frac{3}{8}Pt$

$\mathbb{f}\odot^5_8LF^5_8 \quad \frac{1}{8}\odot^5_8N^{\circ}\in\frac{1}{8}\frac{1}{3}\% \cup \quad H_TFR^{11}\frac{5}{8}\frac{5}{8}LF LF^5_8LF \quad \frac{1}{3}FR^5_8 \quad \frac{5}{8}N^{\circ}H_T^5_8\frac{1}{8}N^{\circ}_5\frac{3}{8} \quad N^{\circ}_5$
 $FR^5_8\frac{3}{8}V_T\frac{1}{8}\frac{5}{8} \quad H_TFR^{13}\frac{5}{8}V_T\frac{1}{8}N^{\circ}\in 1- \quad \frac{1}{8}1LFN^{\circ}_5LF \quad N^{\circ}\odot FR^1V_T\odot \odot \quad \frac{1}{8}1-N^{\circ}\in-V_TV_TLF \quad \frac{7}{8}\% \cup 1\mathbb{W}$
 $LFrs-N^{\circ}\odot^5_8LF\in LF\mathbb{E} \quad H_TFR^{11}\frac{5}{8}\frac{5}{8}LF LF \quad 1H_TN^{\circ}\in N^{\circ}\in MD^1_3N^{\circ}\in 1- \quad \frac{1}{3}-\frac{3}{8} \quad FR^5_8\frac{1}{3}\frac{1}{8}N^{\circ}\in 1-$
 $\frac{5}{8}-\odot\in-\frac{5}{8}\frac{5}{8}FR\in-\odot Pt \quad \mathbb{f}\odot^5_8 \quad LF\frac{1}{8}\odot^5_8N^{\circ}_5 \quad \frac{5}{8}-\oplus\in LF\frac{1}{3}\odot^5_8LF \quad \frac{7}{8}\in-\frac{1}{3}-\frac{1}{8}\in\frac{1}{3}\% \cup$
 $\in-\frac{1}{8}\frac{5}{8}-N^{\circ}\in\oplus^5_8LF \quad N^{\circ}_5 \quad \frac{5}{8}\% \cup \in\odot\in\mathbb{E}^{\frac{2}{3}}_3\% \cup \frac{5}{8} \quad N^{\circ}\frac{1}{3}-V_T\frac{7}{8}\frac{1}{3}\frac{1}{8}N^{\circ}_5V_TFR^5_8FR LF \quad \frac{1}{7}\frac{8} \quad \frac{2}{1}\frac{4}$
 $\frac{1}{8}FR\in N^{\circ}\in\frac{1}{8}\frac{1}{3}\% \cup \quad \frac{2}{3}V_T\% \cup \quad \frac{3}{8}FRV_T\odot LF \quad 1- \quad \in-\frac{1}{8}FR^5_8N^{\circ}_5\frac{5}{8}-N^{\circ}_5\frac{1}{3}\% \cup \quad LF\frac{1}{3}\% \cup \frac{5}{8}LF \quad 1\oplus^5_8FR \quad \frac{1}{3}$
 $\odot \dots \frac{1}{2}^{\frac{3}{2}} \quad \frac{2}{3}\frac{1}{3}LF^5_8 \quad \frac{7}{8}\frac{1}{8}FR \quad \frac{1}{3} \quad H_T^5_8FR\in\frac{1}{3}\frac{8} \quad \frac{1}{7}\frac{8} \quad LF\in N^{\circ} \quad Rs^5_8\frac{1}{3}FR LF Pt \quad \nmid - \quad N^{\circ}\odot^5_8 \quad \frac{1}{8}\frac{1}{3}LF^5_8 \quad \frac{1}{7}\frac{8}$

$\frac{7}{8} \frac{5}{8} F_R N^{\frac{25}{8}} - N_L \frac{1}{3} N_L \in 1 - \frac{2}{3} \frac{1}{3} F^{\frac{5}{8} \frac{3}{8}} \quad \frac{2}{3} V_T \frac{0}{100} \% \quad \frac{3}{8} F_R V_T \otimes F \quad N^{\frac{21}{3}} - V_T \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L V_T F_R^{\frac{5}{8}} F_R L_F$
 $\frac{W}{W} \in \frac{0}{100} \frac{0}{100} \quad \otimes \frac{5}{8} N_L \quad \frac{1}{3} \quad \frac{1}{2}^a \quad \in - \frac{1}{8} \frac{5}{8} - N_L \in \oplus \frac{5}{8} \quad \frac{W}{W} \in \frac{0}{100} \frac{5}{8} \quad \frac{1}{8} \otimes \frac{5}{8} N^{\frac{2}{8}} \in \frac{1}{8} \frac{1}{3} \frac{0}{100}$
 $L_F R_S - N_L \otimes \frac{5}{8} L_F \in L_F \frac{2}{3} \frac{1}{3} F^{\frac{5}{8} \frac{3}{8}} \quad \frac{2}{3} V_T \frac{0}{100} \% \quad \frac{3}{8} F_R V_T \otimes F \quad \frac{1}{3} F_R^{\frac{5}{8}} \quad N_L^1 \quad \otimes \frac{5}{8} N_L \quad \frac{1}{3} \quad \otimes^a$
 $\in - \frac{1}{8} \frac{5}{8} - N_L \in \oplus \frac{5}{8} P_t$

■ $V_T - \frac{0}{100} \frac{2}{3}$ ■ $\frac{1}{3} F_R \%$

$- N_L \frac{1}{3} N_L^{\frac{5}{8}} L_F \quad \frac{0}{100} \frac{11}{100} \% \in - \otimes \quad N_L^1 \quad \frac{1}{3} N_L N_L F_R \frac{1}{3} \frac{1}{8} N_L \quad \frac{2}{3} V_T \frac{0}{100} \% \quad \frac{3}{8} F_R V_T \otimes$
 $N^{\frac{21}{3}} - V_T \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L V_T F_R^{\frac{5}{8}} F_R L_F \quad \otimes \frac{1}{3} \oplus \frac{5}{8} \quad \frac{1}{3} \frac{0}{100} L_F^1 \quad \frac{2}{3} \frac{5}{8} \frac{5}{8} - \quad \frac{1}{3} L_F \frac{0}{100} \frac{5}{8} \frac{3}{8} \quad N_L^1 \quad \frac{1}{3} F_R F_R \frac{1}{3} - \otimes \frac{5}{8} \quad \frac{7}{8} \frac{1}{8} F_R$
 $\frac{0}{100} \frac{1}{W} \frac{W}{W} \frac{1}{8} \frac{1}{8} L_F N_L \quad \frac{0}{100} \frac{1}{3} - \frac{3}{8} \quad \frac{1}{3} - \frac{3}{8} \quad \frac{1}{8} F_R V_T \frac{1}{8} \in \frac{1}{3} \frac{0}{100} \quad V_T N_L \in \frac{0}{100} \in N_L \in \frac{5}{8} L_F \quad L_F V_T \frac{1}{8} \otimes \quad \frac{1}{3} L_F$
 $\frac{W}{W} \frac{1}{3} N_L^{\frac{5}{8}} F_R \quad \frac{1}{3} - \frac{3}{8} \quad \frac{5}{8} \frac{0}{100} \frac{5}{8} \frac{1}{8} N_L F_R \in \frac{1}{8} \in N_L R_S \quad \frac{1}{3} N_L \quad \frac{1}{8} \otimes \frac{5}{8} \frac{1}{3} H_T \quad F_R \frac{1}{3} N_L^{\frac{5}{8}} L_F P_t$

$f_i \in N_L \otimes \quad N_L \otimes \frac{5}{8} \quad \otimes \frac{1}{3} \oplus \frac{5}{8} F_R - N^{\frac{25}{8}} - N_L \quad \frac{0}{100} \frac{5}{8} \frac{5}{8} - \quad N_L^1 \quad H_T F_R^1 N^{\frac{21}{3}} N_L^{\frac{5}{8}} \quad \frac{2}{3} V_T \frac{0}{100} \% \quad \frac{3}{8} F_R V_T \otimes$
 $N^{\frac{21}{3}} - V_T \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L V_T F_R \in - \otimes \quad N_L \otimes \frac{5}{8} \quad L_F N_L \frac{1}{3} N_L^{\frac{5}{8}} \quad \frac{17}{8} \quad \blacksquare V_T - \frac{0}{100} \frac{1}{3} \frac{2}{3} \quad \otimes \frac{1}{3} L_F \quad N_L \frac{1}{3} \frac{0}{100} \frac{5}{8} - \quad N_L \otimes \frac{5}{8}$
 $\in - \in N_L \in \frac{1}{3} N_L \in \oplus \frac{5}{8} \quad \frac{2}{3} R_S \quad \frac{1}{3} \frac{1}{8} F_F V_T \in F_R \in - \otimes \quad \frac{21}{4} \frac{1}{4} \quad \frac{1}{3} \frac{1}{8} F_R^{\frac{5}{8}} L_F \quad N_L^1 \quad L_F^{\frac{5}{8}} N_L \quad V_T H_T \quad \frac{1}{3}$
 $H_T \otimes \frac{1}{3} F_R N^{\frac{21}{3}} \quad H_T \frac{1}{3} F_R \frac{0}{100} P_t$

$ff \otimes \frac{5}{8} \quad \blacksquare V_T - \frac{0}{100} \frac{1}{3} \frac{2}{3} \quad - N^{\frac{21}{3}} \frac{0}{100} \frac{0}{100} \quad \ddagger - \frac{3}{8} V_T L_F N_L F_R \in \frac{5}{8} L_F \quad \frac{1}{3} - \frac{3}{8} \quad \frac{H}{H} H_T F_R N_L$
 $- \frac{1}{8} F_R H_T F_R \frac{1}{3} N_L \in 1 - \quad \frac{1}{3} \frac{1}{8} F_F V_T \in F_R^{\frac{5}{8} \frac{3}{8}} \quad \frac{0}{100} \frac{1}{3} - \frac{3}{8} \quad \in - \quad f_i \frac{1}{3} M_D \in F_R \frac{1}{3} \frac{2}{3} \frac{1}{3} \frac{3}{8} \quad \oplus \in \frac{0}{100} \frac{0}{100} \frac{1}{3} \otimes \frac{5}{8} \quad \frac{17}{8}$
 $\bigcirc \frac{1}{3} N_L^{\frac{5}{8}} \otimes \frac{1}{3} F_R \otimes \quad - \frac{1}{3} \otimes \in \frac{2}{3} \quad \in L_F N_L F_R \in \frac{1}{8} N_L \quad \frac{W}{W} \in \frac{1}{8} \otimes \quad \frac{W}{W} \in \frac{0}{100} \frac{0}{100} \quad \frac{2}{3} \frac{5}{8} \quad \frac{3}{8} \frac{5}{8} \oplus \frac{5}{8} \frac{0}{100} \frac{1}{H_T} \frac{5}{8} \frac{3}{8}$
 $\frac{1}{3} - \frac{3}{8} \quad \frac{1}{3} \frac{0}{100} \frac{0}{100} \frac{11}{8} \frac{1}{3} N_L^{\frac{5}{8} \frac{3}{8}} \quad N_L^1 \quad H_T \otimes \frac{1}{3} F_R N^{\frac{21}{3}} \quad \frac{1}{8} \frac{1}{8} N^{\frac{21}{3}} \frac{1}{3} - \in \frac{5}{8} L_F P_t \quad ff \otimes \frac{5}{8} \quad \blacksquare V_T - \frac{0}{100} \frac{1}{3} \frac{2}{3}$
 $\otimes \frac{1}{3} \oplus \frac{5}{8} F_R - N^{\frac{25}{8}} - N_L \quad \in L_F \quad - \frac{1}{W} \quad \frac{0}{100} \frac{11}{100} \% \in - \otimes \quad N_L^1 \quad \otimes \frac{5}{8} N_L \quad \frac{1}{3} \quad N^{\frac{21}{3}} \frac{0}{100} \frac{1}{F_R} \quad \frac{1}{8} \otimes V_T - \frac{0}{100} \quad \frac{17}{8}$
 $\in - \oplus \frac{5}{8} L_F N_L N^{\frac{25}{8}} - N_L \quad \frac{7}{8} F_R^1 N^{\frac{2}{8}} \quad N_L \otimes \frac{5}{8} L_F^{\frac{5}{8}} \quad \frac{1}{8} \frac{1}{8} N^{\frac{21}{3}} \frac{1}{3} - \in \frac{5}{8} L_F \quad \frac{1}{3} - \frac{3}{8} \quad \frac{W}{W} \frac{5}{8} \frac{1}{3} - \quad N_L \otimes \frac{5}{8} N^{\frac{2}{8}} \quad \frac{1}{3} \frac{W}{W} \frac{1}{3} R_S$
 $N_L^1 \quad N_L \otimes \frac{5}{8} \quad - \frac{5}{8} \frac{W}{W} \quad H_T \frac{1}{3} F_R \frac{0}{100} P_t$

$\square \frac{1}{3} \oplus N_L P_t \quad - \frac{1}{8} N_L \in \frac{7}{8} \in \frac{5}{8} L_F \quad \in - \frac{1}{8} \frac{5}{8} - N_L \in \oplus \frac{5}{8} \quad L_F \frac{1}{8} \otimes \frac{5}{8} N^{\frac{25}{8}} \quad \frac{7}{8} \frac{1}{8} F_R \quad \frac{0}{100} \frac{11}{8} \frac{1}{3} \frac{0}{100} \quad \text{"}\ddagger$
 $N^{\frac{21}{3}} - V_T \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L V_T F_R \in - \otimes \quad N_L^1 \quad \frac{1}{8} V_T N_L \quad \in N^{\frac{21}{3}} H_T F_R N_L L_F$

$ff \otimes \frac{5}{8} \quad \frac{1}{8} \frac{5}{8} - N_L F_R \frac{1}{3} \frac{0}{100} \quad \otimes \frac{1}{3} \oplus \frac{5}{8} F_R - N^{\frac{25}{8}} - N_L \quad \otimes \frac{1}{3} \frac{3}{8} \quad - \frac{1}{8} N_L \in \frac{7}{8} \in \frac{5}{8} \frac{3}{8} \quad \frac{1}{3} \quad \square L_F P_t \quad n \Sigma \alpha \phi^a \frac{2}{3}$
 $\frac{1}{8} F_R^1 F_R^{\frac{5}{8}} \quad H_T F_R \frac{13}{8} V_T \frac{1}{8} N_L \in 1 - \quad \frac{0}{100} \in - \frac{0}{100} \frac{5}{8} \frac{3}{8} \quad \in - \frac{1}{8} \frac{5}{8} - N_L \in \oplus \frac{5}{8} \quad L_F \frac{1}{8} \otimes \frac{5}{8} N^{\frac{25}{8}} \quad N_L^1 \quad \frac{2}{3} \frac{11}{100} L_F N_L$
 $\frac{0}{100} \frac{11}{8} \frac{1}{3} \frac{0}{100} \quad \frac{2}{3} V_T \frac{0}{100} \% \quad \frac{3}{8} F_R V_T \otimes \quad N^{\frac{21}{3}} - V_T \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L V_T F_R \in - \otimes \quad \frac{1}{3} - \frac{3}{8} \quad \frac{7}{8} V_T F_R N_L \otimes \frac{5}{8} F_R \quad F_R^{\frac{5}{8} \frac{3}{8}} V_T \frac{1}{8} \frac{5}{8}$
 $\frac{3}{8} \frac{5}{8} H_T^{\frac{5}{8}} - \frac{3}{8} \frac{5}{8} - \frac{1}{8} \frac{5}{8} \quad 1 - \quad \in N^{\frac{21}{3}} H_T F_R N_L L_F P_t \quad \text{"} F_R^1 V_T - \frac{3}{8} \quad \frac{21}{4} \quad \frac{1}{3} \frac{1}{8} N_L \in \oplus \frac{5}{8}$
 $H_T \otimes \frac{1}{3} F_R N^{\frac{21}{3}} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{100} \quad \in - \otimes F_R^{\frac{5}{8} \frac{3}{8}} \in \frac{5}{8} - N_L L_F \quad \text{"}\ddagger L_F \ddagger \quad - \quad \frac{1}{8} \frac{1}{3} \oplus \frac{5}{8} F_R \in - \otimes \quad \phi^a$

$H_T C_R^{13/8} V_T^{1/8} N_L F$ — $\odot^{1/3} \oplus^{5/8} \frac{2}{3} \frac{5}{8} \frac{5}{8} - \in \frac{3}{8} \frac{5}{8} - N_L \in \frac{7}{8} \in \frac{5}{8} \frac{3}{8} \frac{2}{3} R_S N_L \odot^{5/8} \odot^{1/3} \oplus^{5/8} C_R - N^{25/8} - N_L \in$
 $\frac{7}{8} \frac{1}{8} C_R W \odot \in \frac{1}{8} \odot \frac{1}{8} \frac{1}{8} N^{\odot} H_T \frac{1}{3} - \in \frac{5}{8} \frac{1}{8} F W \in \frac{0}{0} \frac{0}{0} \frac{2}{3} \frac{5}{8} \frac{5}{8} \frac{0}{0} \in \odot \in \frac{2}{3} \frac{0}{0} \frac{5}{8} \frac{7}{8} \frac{1}{8} C_R$
 $\frac{7}{8} \in - \frac{1}{3} - \frac{1}{8} \in \frac{1}{3} \frac{0}{0} \in - \frac{1}{8} \frac{5}{8} - N_L \in \oplus^{5/8} \frac{1}{8} F \in H_T C_R^{1/8} \oplus \in \frac{3}{8} \frac{5}{8} \frac{3}{8} N_L \odot^{5/8} R_S \frac{1}{8} \frac{5}{8} N_L V_T H_T$
 $\in - \frac{3}{8} \in \odot^{5/8} - \frac{1}{8} V_T F \square C_R^{5/8} \frac{5}{8} - \frac{7}{8} \in \frac{5}{8} \frac{0}{0} \frac{3}{8} N^{\odot} \frac{1}{3} - V_T \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L V_T C_R \in - \odot P_t$

$\text{"} \frac{1}{8} \frac{1}{8} \frac{1}{8} C_R^{3/8} \in - \odot N_L^{1/3} \odot^{1/3} \oplus^{5/8} C_R - N^{25/8} - N_L - \frac{1}{8} N_L \in \frac{7}{8} \in \frac{1}{8} \frac{1}{3} N_L \in 1 - \in \frac{2}{3} V_T \frac{0}{0} \frac{0}{0} \frac{3}{8} C_R V_T \odot F$
 $\frac{1}{3} \frac{1}{8} \frac{1}{8} \frac{1}{8} V_T - N_L \frac{5}{8} \frac{3}{8} \frac{7}{8} \frac{1}{8} C_R n^{1/4} H_T \frac{5}{8} C_R \frac{1}{8} \frac{5}{8} - N_L \frac{17}{8} N_L \frac{1}{8} N_L \frac{1}{3} \frac{0}{0} H_T \odot^{1/3} C_R N^{\odot} \frac{1}{3} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{0}$
 $\in N^{\odot} H_T \frac{1}{8} C_R N_L F \in - N_L \odot^{5/8} \frac{1}{8} V_T - N_L C_R R_S \in - \frac{1}{2} \frac{2}{0} \frac{0}{0} \frac{0}{0} P_t$

$\text{"} f \odot^{5/8} \ddagger - \frac{3}{8} \in \frac{1}{3} - H_T \odot^{1/3} C_R N^{\odot} \frac{1}{3} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{0} \in - \frac{3}{8} V_T F N_L C_R R_S \in F N_L \odot^{5/8}$
 $N_L \odot \in C_R^{3/8} \frac{0}{0} \frac{1}{3} C_R \odot^{5/8} \frac{1}{8} F N_L \in - N_L \odot^{5/8} W^{1/8} C_R \frac{0}{0} \frac{3}{8} \frac{2}{3} R_S \oplus^{1/0} V_T N^{25/8} \frac{1}{3} - \frac{3}{8} \frac{2}{0} N_L \odot$
 $\frac{0}{0} \frac{1}{3} C_R \odot^{5/8} \frac{1}{8} F N_L \in - N_L \frac{5}{8} C_R N^{\odot} F \frac{17}{8} \oplus^{1/3} \frac{0}{0} V_T \frac{5}{8} P_t \ddagger - \frac{3}{8} \in \frac{1}{3} \frac{1}{8} \frac{1}{8} - N_L C_R \in \frac{2}{3} V_T N_L \frac{5}{8} F \frac{1}{4} P_t^2$
 $H_T \frac{5}{8} C_R \frac{1}{8} \frac{5}{8} - N_L \frac{17}{8} N_L \frac{1}{8} N_L \frac{1}{3} \frac{0}{0} \frac{3}{8} C_R V_T \odot F \frac{1}{3} - \frac{3}{8} N^{25/8} \frac{3}{8} \in \frac{1}{8} \in - \frac{5}{8} F \frac{5}{8} N^{\odot} H_T \frac{1}{8} C_R N_L \frac{5}{8} \frac{3}{8}$
 $\odot \frac{0}{0} \frac{12}{3} \frac{1}{3} \frac{0}{0} \frac{0}{0} R_S P_t \frac{5}{8} F H_T \in N_L \frac{5}{8} N_L \odot^{5/8} \frac{1}{8} F \frac{5}{8} \frac{1}{3} \frac{1}{8} \odot \in \frac{5}{8} \oplus^{5/8} N^{25/8} - N_L F \in \ddagger - \frac{3}{8} \in \frac{1}{3} \in F$
 $F \in \odot - \in \frac{7}{8} \in \frac{1}{8} \frac{1}{3} - N_L \frac{0}{0} R_S \frac{3}{8} \frac{5}{8} H_T \frac{5}{8} - \frac{3}{8} \frac{5}{8} - N_L 1 - \in N^{\odot} H_T \frac{1}{8} C_R N_L \frac{17}{8} F^{1/8} N^{25/8} \frac{2}{3} \frac{1}{3} F \in \frac{1}{8} C_R \frac{1}{3} W$
 $N^{\odot} \frac{1}{3} N_L \frac{5}{8} C_R \in \frac{1}{3} \frac{0}{0} F \in \oplus \in M \odot P_t \in \frac{2}{3} V_T \frac{0}{0} \frac{0}{0} \frac{3}{8} C_R V_T \odot F V_T F \frac{5}{8} \frac{3}{8} N_L^{1/8} H_T C_R^{13/8} V_T^{1/8} \frac{5}{8}$
 $\frac{7}{8} \in - \in F \odot^{5/8} \frac{3}{8} \frac{3}{8} \frac{1}{8} F \frac{1}{3} \odot^{5/8} \frac{7}{8} \frac{1}{8} C_R N^{\odot} V_T \frac{0}{0} \frac{1}{3} N_L \in 1 - F \in \text{"} \in N_L C_R \frac{5}{8} \frac{1}{3} \frac{3}{8} P_t$

$\ddagger - \frac{3}{8} \in \frac{1}{3} \in N^{\odot} H_T \frac{1}{8} C_R N_L F \frac{2}{3} V_T \frac{0}{0} \frac{0}{0} \frac{3}{8} C_R V_T \odot F \frac{0}{0} \frac{1}{3} C_R \odot^{5/8} \frac{0}{0} R_S \frac{7}{8} \frac{1}{8} C_R \frac{5}{8} \frac{1}{8} \frac{1}{8} - \frac{1}{8} N^{\odot} \in \frac{1}{8}$
 $C_R \frac{5}{8} \frac{1}{3} \frac{1}{8} F^{1/8} - F P_t - \odot \in - \frac{5}{8} F \frac{5}{8} \frac{2}{3} V_T \frac{0}{0} \frac{0}{0} \frac{3}{8} C_R V_T \odot F \frac{1}{3} C_R \frac{5}{8} \frac{1}{8} \odot^{5/8} \frac{1}{3} H_T \frac{5}{8} C_R \frac{2}{3} R_S \frac{1}{2} \frac{2}{3} \frac{1}{4} \frac{2}{3}$
 $H_T \frac{5}{8} C_R \frac{1}{8} \frac{5}{8} - N_L 1 - \frac{1}{3} \oplus^{5/8} C_R \frac{1}{3} \odot^{5/8} \in \frac{1}{8} \frac{1}{8} N^{\odot} H_T \frac{1}{3} C_R \frac{5}{8} \frac{3}{8} N_L^{1/8} \frac{3}{8} N^{25/8} \frac{1}{8} F N_L \in \frac{1}{8} H_T C_R^{13/8} V_T^{1/8} N_L F P_t$
 $\ddagger^{1/8} W^{5/8} \oplus^{5/8} C_R \in N_L \odot^{5/8} C_R \frac{5}{8} \frac{1}{8} \frac{5}{8} - N_L - \frac{1}{8} \oplus \in \frac{3}{8} \frac{0}{0} \frac{0}{0} H_T \frac{1}{3} - \frac{3}{8} \frac{5}{8} N^{\odot} \in \frac{1}{8} \frac{1}{3} - \frac{3}{8}$
 $\frac{5}{8} F \frac{1}{8} \frac{1}{3} \frac{0}{0} \frac{1}{3} N_L \in 1 - \frac{1}{3} N_L N_L \odot^{5/8} \frac{2}{3} \frac{1}{3} C_R \frac{5}{8} \frac{3}{8} C_R \odot^{1/3} \oplus^{5/8} \frac{5}{8} N^{\odot} H_T \frac{1}{8} F \frac{5}{8} \frac{3}{8} \ddagger - \frac{3}{8} \in \frac{1}{3} F$
 $\oplus V_T \frac{0}{0} - \frac{5}{8} C_R \frac{1}{3} \frac{2}{3} \in \frac{0}{0} \in N_L R_S \in - N_L \odot \in F \frac{1}{3} C_R \frac{5}{8} \frac{1}{3} P_t \blacksquare - \frac{5}{8} W \in \frac{0}{0} \frac{0}{0} \odot^{1/3} \oplus^{5/8} N_L^{1/8}$
 $\in - \oplus^{5/8} \frac{1}{8} F N_L \square F \frac{1}{2} \frac{2}{3} \frac{1}{8} C_R \frac{1}{8} C_R \frac{5}{8} N_L^{1/8} F \frac{5}{8} N_L V_T H_T \frac{1}{3} - \frac{5}{8} W \frac{7}{8} \frac{1}{3} \frac{1}{8} \in \frac{0}{0} \in N_L R_S - N_L \odot \in F$
 $N^{\odot} \frac{1}{3} R_S \frac{2}{3} \frac{5}{8} 1 - N_L \odot^{5/8} H_T C_R \frac{5}{8} N^{\odot} \in F \frac{5}{8} F \frac{17}{8} \frac{1}{3} - \frac{5}{8} N^{\odot} \in F N_L \in - \odot N^{\odot} \frac{1}{3} - V_T \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L V_T C_R \in - \odot$
 $H_T \frac{0}{0} \frac{1}{3} - N_L \frac{1}{3} - \frac{3}{8} N^{\odot} \frac{1}{3} \frac{0}{0} \frac{5}{8} N_L \odot^{5/8} F \frac{5}{8} \frac{0}{0} \frac{0}{0} \frac{5}{8} \frac{1}{8} N_L \frac{5}{8} \frac{3}{8} \frac{2}{3} V_T \frac{0}{0} \frac{0}{0} \frac{3}{8} C_R V_T \odot F N_L^{1/8} \frac{1}{3} \oplus^{1/3} \in \frac{0}{0}$
 $\frac{17}{8} N_L \odot^{5/8} F \frac{1}{8} \odot^{5/8} N^{25/8} P_t$

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ff^{⓪5/8} ⓪₀₀12/31/3₀₀ 1/31/8N_L∈⓪^{5/8} H_T⓪1/3C_RN^{⓪1/31/85/8}V_TN_L∈1/81/3₀₀ ∈-⓪C_R5/83/8∈5/8-N_L⊥
N^{⓪1/3}C_R⓪_{5/8}N_L W^{1/3}⊥F W¹C_RN_L⓪ ffi-● ⓪⓪nP_tⁿ -∈%₀₀0₀₀∈1- ∈- 1/2^{⓪⓪}⓪P_t “1/8N_L∈⓪^{5/8}
H_T⓪1/3C_RN^{⓪1/31/85/8}V_TN_L∈1/81/3₀₀ ∈-⓪C_R5/83/8∈5/8-N_L !“■‡⓪ ∈⊥F N_L⓪^{5/8} N_L5/8C_RN^⓪ N_L⓪1/3N_L ∈⊥F
V_T⊥F5/83/8 N_L¹ C_R5/87/85/8C_R N_L¹ N_L⓪^{5/8} 2/3∈1₀₀1^⓪∈1/81/3₀₀0₀₀Rs 1/31/8N_L∈⓪^{5/8} 1/81N^⓪H_T1-5/8-N_L
17/8 1/3 3/8C_RV_T^⓪ j5/8P_t⓪P_t N_L1/32/3₀₀0^{5/8}N_L⊥ 1/81/3H_T⊥FV_T⓪₀₀5/8;P_t “ 3/8C_RV_T^⓪ ∈⊥F V_T⊥FV_T1/3₀₀0₀₀Rs
1/81N^⓪H_T1⊥F5/83/8 17/8 ⊥F5/8⓪^{5/8}C_R1/3₀₀ 1/81N^⓪H_T1-5/8-N_L⊥F_t ff^{⓪5/8} “■‡ C_R5/8H_TC_R5/8⊥F5/8-N_L⊥F

$N_L^{05/8} \quad H_T C_R \in N^{01/3} C_R R_S \quad \in - \otimes C_R^{5/8 3/8} \in 5/8 - N_L P_t \quad \blacksquare N_L^{05/8} C_R \quad \in - \otimes C_R^{5/8 3/8} \in 5/8 - N_L L_F \quad 1/3 C_R^{5/8}$
 $1/8 1 N^{01/3} - \%_{00} R_S \quad \%_{00} - 1 W - \quad 1/3 L_F \quad 0 5/8 N^{01/3} \in H_T \in 5/8 - N_L L_F P_t \quad - 1 N^{05/8} N_L \in N^{05/8} L_F \quad 1/3 \quad 3/8 C_R V_T \otimes \quad 1/8 1/3 -$
 $1/8 1 - N_L 1/3 \in - \quad L_F^{5/8} \otimes 5/8 C_R 1/3 \%_{00} \quad \text{"} \blacksquare \dagger L_F \quad 1/3 - 3/8 \quad \in N_L L_F \quad 5/8 7/8 7/8 5/8 1/8 N_L \quad 1 - \quad 1/3 \quad H_T 1/3 N_L \in 5/8 - N_L$
 $3/8 5/8 H_T 5/8 - 3/8 L_F \quad 1 - \quad N_L^{05/8} \quad 3/8 1 L_F 1/3 \otimes 5/8 \quad H_T C_R^{5/8} L_F 1/8 C_R \in 2/3 5/8 3/8 \quad 1/3 - 3/8 \quad 1/8 1/3 - \quad \otimes 1/3 C_R R_S \quad 7/8 C_R 1 N^{01/3}$
 $H_T 5/8 C_R L_F 1 - \quad N_L 1 \quad H_T 5/8 C_R L_F 1 - P_t \quad \dagger - \quad 1/8 1 N^{02/3} \in - 1/3 N_L \in 1 - \quad N_L^{05/8} C_R 1/3 H_T \in 5/8 L_F \quad N_L W^{01/3} \quad 1 C_R \quad N^{01/3} C_R^{5/8}$
 $N_L \otimes 1/3 - \quad N_L W^{01/3} \quad 1/3 1/8 N_L \in \otimes 5/8 \quad \in - \otimes C_R^{5/8 3/8} \in 5/8 - N_L L_F \quad 1/3 C_R^{5/8} \quad V_T L_F^{5/8 3/8} \quad N_L 1 \quad N_L C_R^{5/8 1/3} N_L$
 $3/8 \in 7/8 7/8 5/8 C_R^{5/8} - N_L \quad L_F R_S N^{01/3} N_L 1 N^{01/3} \quad \in - \quad 3/8 \in 7/8 7/8 5/8 C_R^{5/8} - N_L \quad W^{01/3} R_S L_F P_t \quad - N_L C_R \in - \otimes 5/8 - N_L$
 $F_F V_T 1/3 \%_{00} \in N_L R_S \quad 1/8 1 - N_L C_R 1 \%_{00} \quad \in L_F \quad 1/3 \quad N^{01/3} - 3/8 1/3 N_L^{5/8} \quad W^{05/8} - \quad \in N_L \quad 1/8 1 N^{05/8} L_F \quad N_L 1 \quad N_L^{05/8}$
 $N^{01/3} - V_T 7/8 1/3 1/8 N_L V_T C_R \in - \otimes \quad 17/8 \quad 3/8 C_R V_T \otimes L_F \quad 1/3 L_F \quad N_L^{05/8} \quad \text{"} \blacksquare \dagger \quad C_R^{5/8} H_T C_R^{5/8} L_F^{5/8} - N_L L_F \quad N_L^{05/8}$
 $N^{01/3} \in - \quad 1/8 1 N^{01/3} T - 5/8 - N_L \quad 1/8 1 - L_F \in 3/8 5/8 C_R^{5/8 3/8} \quad W^{01/3} \in \%_{00} 5/8 \quad N^{01/3} \%_{00} \in - \otimes \quad N_L^{05/8}$
 $H_T C_R^{5/8} L_F 1/8 C_R \in H_T N_L \in 1 - P_t$

Global Active Pharmaceutical Ingredients Market

Pharmaceutical manufacturing occurs in two general steps. In the first step, manufacturers convert raw materials into APIs. The second step involves creating the final formulation by mixing APIs and excipients into tablets, capsules, solutions, etc. and finally packaging the drug for the end users.

$\bullet 1/3 - V_T 7/8 1/3 1/8 N_L V_T C_R^{5/8} C_R L_F \quad 5/8 \in N_L^{05/8} C_R \quad L_F^{5/8} \%_{00} \%_{00}$
 $\text{"} \blacksquare \dagger L_F \quad \in - \quad N_L^{05/8} \quad 1 H_T 5/8 - \quad N^{01/3} C_R^{5/8} 5/8 N_L \quad 1/3 \%_{00} L_F \quad \%_{00} - 1 W - \quad 1/3 L_F \quad N_L^{05/8} \quad N^{05/8} C_R 1/8 \otimes 1/3 - N_L$
 $N^{01/3} C_R^{5/8} 5/8 N_L \quad 1 C_R \quad V_T L_F^{5/8} \quad N_L^{05/8} N^{01/3} \quad 1/3 L_F \quad \in - H_T V_T N_L L_F \quad N_L 1 \quad N^{01/3} \%_{00} 5/8 \quad N_L^{05/8} \in C_R \quad 7/8 \in - 1/3 \%_{00}$
 $7/8 1 C_R N^{01/3} V_T \%_{00} 1/3 N_L \in 1 - L_F P_t$

$ff^{05/8} \quad \otimes \%_{00} 12/3 1/3 \%_{00} \quad \text{"} \blacksquare \dagger \quad N^{01/3} C_R^{5/8} 5/8 N_L \quad \in L_F \quad 5/8 N_L C_R^{5/8} N^{05/8} \%_{00} R_S \quad 1/8 1 N^{01/3} 5/8 N_L \in N_L \in \otimes 5/8$
 $W \in N_L \otimes \quad 1/3 \quad - V_T N^{02/3} 5/8 C_R \quad 17/8 \quad \%_{00} 1/3 C_R^{05/8} \quad 1/3 - 3/8 \quad L_F N^{01/3} \%_{00} \%_{00} \quad N^{01/3} - V_T 7/8 1/3 1/8 N_L V_T C_R^{5/8} C_R L_F P_t$
 $O \in C_R N^{01/3} \quad N_L \otimes 1/3 N_L \quad 5/8 - \otimes 1/3 \otimes 5/8 \quad \in - \quad \text{"} \blacksquare \dagger \quad N^{01/3} - V_T 7/8 1/3 1/8 N_L V_T C_R \in - \otimes \quad \otimes 5/8 - 5/8 C_R 1/3 \%_{00} \%_{00} R_S$
 $L_F H_T 5/8 1/8 \in 1/3 \%_{00} \in MD^{5/8} \quad 1/3 - 3/8 \quad N_L 1/3 C_R^{05/8} N_L \quad N_L^{05/8} \in C_R \quad N^{01/3} - V_T 7/8 1/3 1/8 N_L V_T C_R \in - \otimes \quad 2/3 1/3 L_F^{5/8 3/8} \quad 1 -$
 $1/3 \quad 1/8 1 N^{02/3} \in - 1/3 N_L \in 1 - \quad 17/8 \quad N_L^{05/8} \quad 7/8 \in C_R N^{01/3} \quad \in - \quad \otimes 1 V_T L_F^{5/8} \quad L_F \%_{00} \%_{00} \%_{00} L_F \quad 1/3 - 3/8$
 $N^{01/3} C_R^{5/8} 5/8 N_L \quad 1 H_T H_T 1 C_R N_L V_T - \in N_L \in 5/8 L_F P_t \quad - 1/3 N_L 1/3 \%_{00} R_S^{MD^{5/8 3/8}} \quad 2/3 R_S \quad \%_{00} 1 W^{5/8} C_R \quad 1/8 1 L_F N_L L_F \quad \text{"} \blacksquare \dagger$
 $N^{01/3} - V_T 7/8 1/3 1/8 N_L V_T C_R \in - \otimes \quad \otimes 1/3 L_F \quad \otimes C_R 1/3 3/8 V_T 1/3 \%_{00} \%_{00} R_S \quad 2/3 5/8 5/8 - \quad L_F \otimes \in 7/8 N_L \in - \otimes \quad 7/8 C_R 1 N^{01/3} \quad N_L^{05/8}$
 $\otimes \in L_F N_L 1 C_R \in 1/8 1/3 \%_{00} \quad \%_{00} 5/8 1/3 3/8 5/8 C_R L_F \quad \in - \quad ff^{5/8} L_F N_L^{5/8} C_R - \quad 1/8 1 V_T - N_L C_R \in 5/8 L_F \quad N_L 1$
 $N^{01/3} - V_T 7/8 1/3 1/8 N_L V_T C_R^{5/8} C_R L_F \quad 2/3 1/3 L_F^{5/8 3/8} \quad \in - \quad \dagger - 3/8 \in 1/3 \quad 1/3 - 3/8 \quad - \otimes \in - 1/3 P_t$

ff^{5/8} 00/0012/31/300 3/8^{5/8}N^{21/3-3/8} 17/8 “■†F €F 1/8V_TF_R5/8-N₀₀Rs 5/8N⁰€2/3€N_L€-0
L_FN_LF_R1-0 0_R1W_NL⁰P_t ■-5/8 17/8 N_L^{5/8} N^{21/3%1}F_R 3/8F_R€5/8F_RF 17/8 N_L€L_F N^{21/3}F_R5/8N_L
€L_F N_L^{5/8} F_R€L_F€-0 -V_TN^{22/3}5/8F_R 17/8 2/30011/8%2/3V_TF_N5/8F_R H_T1/3N_L5/8-N_L 5/8N^HT€F_R€5/8F_R
1/8F_R5/81/3N_L€-0 1/3 L_F€-0-€7/8€1/81/3-N_L 1H_TH_T1F_RN_LV_T-€N_LRs 7/81F_R 05/8-5/8F_R€1/8 “■†F_P
●1F_R5/815/8F_R N_L^{5/8}F_R5/8 01/3F_R 2/35/85/8- 1/3 L_FN_LF_R1-0 3/8^{5/8}N^{21/3-3/8} 7/81F_R “■†F 7/81F_R
2/3€100010€1/81/300P_t

ff^{5/8} 00/0012/31/300 N^{21/3}F_R5/8N_L 7/81F_R 2/3€100010€1/81/300L_F €L_F 1/8V_TF_R5/8-N₀₀Rs
5/8N⁰€2/3€N_L€-0 L_FN_LF_R1-0 0_R1W_NL⁰ 1/81/3N_L1/300Rs^{MD5/83/8} 2/3Rs N_L^{5/8}€F_R 0€00
H_T1N_L5/8-1/8Rs 1/3-3/8 1/32/3€00€N_LRs N_L1 N_LF_R5/81/3N_L 3/8€L_F5/81/3L_F5/8F_R 2/35/8Rs1-3/8 N_L^{5/8}
L_F1/81H_T5/8 17/8 L_FN^{21/3}00000 N^{21/3}005/81/8V_T005/8 3/8F_RV_T0_FP_t ff^{5/8}€L_F €L_F 1/8F_R5/81/3N_L€-0 1/3
L_FN_LF_R1-0 3/8^{5/8}N^{21/3-3/8} 7/81F_R “■†F 7/81F_R 2/3F_R1/3-3/85/83/8 2/3€100010€1/81/300 3/8F_RV_T0_F
1/3-3/8 N_L^{5/8}€F_R 2/3€1L_F€N²€0001/3F_R 5/8F_RL_F€1-L_FP_t

■N_L^{5/8}F_R 7/81/31/8N_L1F_RL_F 1/81/3N_L1/300Rs^{MD}€-0 N_L^{5/8} 00/0012/31/300 3/8^{5/8}N^{21/3-3/8} 17/8
“■†F €-1/800V_T3/85/8 1/305/8€-0 H_T1H_TV_T0001/3N_L€1-0 F_R€L_F€-0 5/8N^HT5/8-3/8€N_LV_TF_R5/8L_F 1-
05/81/300N_L01/81/3F_R5/8€ -1/8F_R5/81/3L_F€-0 H_TF_R5/81/3005/8-1/85/8 17/8 00€7/85/8L_FN_LRs005/8
3/8€L_F5/81/3L_F5/8L_F 5/8N_L1/8P_t R¹¹€-0 7/81F_RW^{1/3}F_R3/8 N_L^{5/8} N^{21/3}F_R5/8N_L 5/81/300V_T5/8 €L_F
H_TF_R105/81/8N_L5/83/8 N_L1 F_R5/81/31/80 ffi-● 1/220P_t0 -€00000€1- 2/3Rs 1/2²¹2²² 5/8N⁰€2/3€N_L€-0
1/3 -“□□ 17/8 2P_t* 3/8V_TF_R€-0 1/2²¹1/2²²1/2²¹2²²P_t

ff^{5/8} 00/0012/31/300 1/31/8N_L€5/8 H_T01/3F_RN^{21/3}1/85/8V_TN_L€1/81/300 €-0F_R5/83/8€5/8-N_LL_F
N^{21/3}F_R5/8N_L W^{1/3}L_F W¹F_RN_L0 ffi-● 20n_Pt -€00000€1- €- 1/220P_t “1/8N_L€5/8
H_T01/3F_RN^{21/3}1/85/8V_TN_L€1/81/300 €-0F_R5/83/8€5/8-N_L i“■†F€L_F N_L^{5/8} N_L5/8F_RN² N_L01/3N_L €L_F
V_TL_F5/83/8 N_L1 F_R5/87/85/8F_R N_L1 N_L^{5/8} 2/3€100010€1/81/30000Rs 1/31/8N_L€5/8 1/81N²H_T1-5/8-N_L
17/8 1/3 3/8F_RV_T0 5/8P_t0P_t N_L1/32/3005/8N_L€ 1/81/3H_TL_FV_T005/8P_t “ 3/8F_RV_T0 €L_F V_TL_FV_T1/30000Rs
1/81N²H_T1L_F5/83/8 17/8 L_F5/85/8F_R1/300 1/81N²H_T1-5/8-N_LL_FP_t ff^{5/8} “■† F_R5/8H_TF_R5/8L_F5/8-N_LL_F
N_L^{5/8} H_TF_R€N^{21/3}F_RRs €-0F_R5/83/8€5/8-N_LP_t ■N_L^{5/8}F_R €-0F_R5/83/8€5/8-N_LL_F 1/3F_R5/8
1/81N²N²¹-00Rs 0-1W- 1/3L_F 05/8N^{1/8}€H_T€5/8-N_LL_FP_t -1N²⁵5/8N_L€N²⁵5/8L_F 1/3 3/8F_RV_T0 1/81/3-
1/81-N_L1/3€- L_F5/85/8F_R1/300 “■†F 1/3-3/8 €N_LL_F 5/87/85/81/8N_L 1- 1/3 H_T1/3N_L€5/8-N_L
3/85/8H_T5/8-3/8L_F 1- N_L^{5/8} 3/81L_F1/305/8 H_TF_R5/8L_F1/8F_R€2/35/83/8 1/3-3/8 1/81/3- 5/81/3F_RRs 7/8F_R1N²
H_T5/8F_RL_F1- N_L1 H_T5/8F_RL_F1-P_t ‡- 1/81N²²3-€1/3N_L€1- N_L^{5/8}F_R1/3H_T€5/8L_F€ N_LW¹ 1F_R N²¹F_R5/8
N_L01/3- N_LW¹ 1/31/8N_L€5/8 €-0F_R5/83/8€5/8-N_LL_F 1/3F_R5/8 V_TL_F5/83/8 N_L1 N_LF_R5/81/3N_L

$\frac{3}{8} \in \frac{7}{8} \frac{7}{8} \frac{5}{8} \text{Fr} \frac{5}{8} - \text{N}_L \text{Fr} \text{Rs} \text{N}^{\frac{2}{3}} \text{H}_T \text{N}_L \text{N}^{\frac{2}{3}} \text{Fr} \in - \frac{3}{8} \in \frac{7}{8} \frac{7}{8} \frac{5}{8} \text{Fr} \frac{5}{8} - \text{N}_L \text{Fr} \frac{1}{3} \text{Rs} \text{Fr} \text{Pt} - \text{N}_L \text{Fr} \in - \frac{5}{8} - \text{N}_L$
 $\text{Fr} \text{V}_T \frac{1}{3} \frac{0}{0} \in \text{N}_L \text{Rs} \frac{1}{8} 1 - \text{N}_L \text{Fr} \frac{1}{10} \in \text{Fr} \frac{1}{3} \text{N}^{\frac{2}{3}} \frac{1}{3} - \frac{3}{8} \frac{1}{3} \text{N}_L \frac{5}{8} \text{Fr} \frac{5}{8} - \in \text{N}_L \frac{1}{8} 1 \text{N}^{\frac{2}{3}} \frac{5}{8} \text{Fr} \text{N}_L \frac{1}{3} \text{N}_L \frac{5}{8}$
 $\text{N}^{\frac{2}{3}} \frac{1}{3} - \text{V}_T \frac{7}{8} \frac{1}{3} \frac{1}{8} \text{N}_L \text{V}_T \text{Fr} \in - \frac{1}{8} \frac{3}{8} \text{Fr} \text{V}_T \frac{1}{10} \text{Fr} \frac{1}{3} \text{Fr} \text{N}_L \frac{5}{8} \text{Fr} \frac{5}{8} \text{Fr} \frac{5}{8} - \text{N}_L \text{Fr} \text{N}_L \frac{5}{8} \text{N}^{\frac{2}{3}} \frac{1}{3} \in -$
 $\frac{1}{8} 1 \text{N}^{\frac{2}{3}} \text{H}_T 1 - \frac{5}{8} - \text{N}_L \frac{1}{8} 1 - \text{Fr} \in \frac{3}{8} \frac{5}{8} \text{Fr} \frac{5}{8} \frac{3}{8} \text{Fr} \frac{5}{8} \in \frac{0}{0} \frac{5}{8} \text{N}^{\frac{2}{3}} \frac{1}{3} \in - \text{N}_L \frac{5}{8} \text{H}_T \text{Fr} \frac{5}{8} \text{Fr} \frac{1}{8} \text{Fr} \in \text{H}_T \text{N}_L \in 1 - \text{Pt}$

$\text{ff} \frac{5}{8} \frac{0}{0} \frac{12}{3} \frac{1}{3} \frac{0}{0} \frac{1}{3} \frac{1}{8} \text{N}_L \in \frac{5}{8} \text{H}_T \frac{1}{3} \text{Fr} \text{N}^{\frac{2}{3}} \frac{1}{3} \frac{1}{8} \frac{5}{8} \text{V}_T \text{N}_L \in \frac{1}{8} \frac{1}{3} \frac{0}{0} \in - \text{Fr} \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - \text{N}_L$
 $\text{N}^{\frac{2}{3}} \frac{1}{3} \text{Fr} \text{C}_u \frac{5}{8} \text{N}_L \text{Fr} \in \text{MD} \frac{5}{8} \in \text{Fr} \frac{5}{8} \text{H}_T \frac{5}{8} \frac{1}{8} \text{N}_L \frac{5}{8} \frac{3}{8} \text{N}_L \frac{1}{3} \text{Fr} \frac{5}{8} \frac{1}{3} \frac{1}{8} \frac{0}{0} \frac{1}{3} \frac{5}{8} \frac{1}{3} \frac{0}{0} \text{V}_T \frac{5}{8} \frac{1}{8} \text{ff} \frac{1}{2} \frac{0}{0} \text{Pt}$
 $\frac{2}{3} \in \frac{0}{0} \frac{0}{0} \frac{0}{0} \in 1 - \frac{2}{3} \text{Rs} \frac{1}{2} \frac{2}{2} \frac{1}{2} \frac{0}{0} \text{Pt} \frac{5}{8} \frac{0}{0} \in \text{Fr} \text{N}_L \frac{5}{8} \text{Fr} \in - \frac{1}{3} - \square \frac{1}{8} \frac{1}{8} \text{Pt} \frac{5}{8} \text{Fr} \text{N}_L \frac{5}{8}$
 $\frac{7}{8} 1 \text{Fr} \frac{5}{8} \frac{1}{8} \frac{1}{3} \text{Fr} \text{N}_L \text{H}_T \frac{5}{8} \text{Fr} \in \frac{1}{3} \frac{1}{8} \text{Pt} \frac{0}{0} \frac{1}{3} \frac{1}{8} \text{N}_L \frac{1}{3} \text{Fr} \text{Fr} \in \text{Fr} \text{V}_T \frac{1}{8} \frac{0}{0} \frac{1}{3} \text{Fr} \in - \frac{1}{8} \text{Fr} \frac{5}{8} \frac{1}{3} \text{Fr} \in - \frac{0}{0}$
 $\text{H}_T \text{Fr} \frac{5}{8} \frac{7}{8} \frac{5}{8} \text{Fr} \frac{5}{8} - \frac{1}{8} \frac{5}{8} \frac{7}{8} 1 \text{Fr} \frac{1}{3} \text{V}_T \text{N}_L \text{Fr} \frac{1}{3} \text{Fr} \frac{1}{8} \in - \frac{0}{0} \text{Fr} \frac{1}{3} \frac{1}{3} - \frac{3}{8} \frac{0}{0} \text{Fr} \frac{1}{3} \text{Fr} \in - \frac{0}{0}$
 $\text{H}_T \text{Fr} \frac{5}{8} \frac{5}{8} \frac{1}{3} \frac{0}{0} \frac{5}{8} - \frac{1}{8} \frac{5}{8} \frac{1}{8} \frac{5}{8} \frac{1}{3} \text{Fr} \in 1 \text{V}_T \text{Fr} \text{N}_L \frac{1}{3} \text{Fr} \frac{5}{8} \text{N}_L \frac{3}{8} \in \text{Fr} \frac{5}{8} \frac{1}{3} \text{Fr} \frac{5}{8} \text{Fr} \text{Fr} \text{V}_T \frac{1}{8} \frac{0}{0} \frac{1}{3} \text{Fr}$
 $\frac{1}{8} \frac{1}{3} - \frac{1}{8} \frac{5}{8} \text{Fr} \frac{1}{3} - \frac{3}{8} - \frac{1}{3} \text{Fr} \frac{3}{8} \in 1 \frac{5}{8} \frac{1}{3} \text{Fr} \frac{1}{8} \text{V}_T \frac{0}{0} \frac{1}{3} \text{Fr} \in \text{Fr} \frac{5}{8} \frac{1}{3} \text{Fr} \frac{5}{8} \text{Fr} \text{Fr} \text{ff} \frac{1}{3} \text{Fr} \frac{5}{8}$
 $\frac{5}{8} \text{H}_T \frac{5}{8} \frac{1}{8} \text{N}_L \frac{5}{8} \frac{3}{8} \text{N}_L \frac{1}{3} \frac{3}{8} \text{Fr} \in \frac{5}{8} \text{N}_L \frac{5}{8} \text{N}^{\frac{2}{3}} \frac{1}{3} \text{Fr} \text{C}_u \frac{5}{8} \text{N}_L \frac{0}{0} \text{Fr} \frac{1}{3} \text{Fr} \text{N}_L \frac{0}{0} \text{Pt}$

$\text{Fr} \text{N}_L \frac{5}{8} \frac{1}{3} \frac{3}{8} \text{Rs} \text{Fr} \in \text{Fr} \frac{5}{8} \in - \frac{1}{8} 1 - \text{Fr} \text{V}_T \text{N}^{\frac{2}{3}} \frac{5}{8} \text{Fr} \frac{3}{8} \frac{5}{8} \text{N}^{\frac{2}{3}} \frac{1}{3} - \frac{3}{8} \frac{7}{8} 1 \text{Fr} \text{Fr} \frac{1}{3} \text{Fr} \in$
 $\frac{5}{8} \text{Fr} \text{H}_T \frac{5}{8} \frac{1}{8} \in \frac{1}{3} \frac{0}{0} \frac{0}{0} \text{Rs} \in - \frac{3}{8} \frac{5}{8} \frac{5}{8} \frac{0}{0} \frac{1}{3} \text{H}_T \in - \frac{0}{0} \frac{1}{3} - \frac{3}{8} \text{V}_T - \frac{3}{8} \frac{5}{8} \text{Fr} \frac{3}{8} \frac{5}{8} \frac{5}{8} \frac{0}{0} \frac{1}{3} \text{H}_T \frac{5}{8} \frac{3}{8}$
 $\frac{1}{8} 1 \text{V}_T - \text{N}_L \text{Fr} \in \frac{5}{8} \text{Fr} \in - \frac{1}{8} \text{Fr} \frac{5}{8} \frac{1}{3} \text{Fr} \frac{5}{8} \text{Fr} \text{N}_L \frac{5}{8} \frac{1}{3} \frac{3}{8} 1 \text{H}_T \text{N}_L \in 1 - \frac{1}{8} \text{N}_L \frac{5}{8} \text{Fr} \frac{5}{8}$
 $\text{H}_T \text{Fr} \frac{1}{3} \frac{5}{8} \text{V}_T \frac{1}{8} \text{N}_L \text{Fr} \text{Pt} \frac{1}{3} - \frac{1}{3} \frac{3}{8} \frac{3}{8} \in \text{N}_L \in 1 - \text{Fr} \text{Fr} \text{N}_L \frac{1}{3} \text{N}_L \frac{5}{8} \frac{0}{0} \in \frac{1}{8} \frac{1}{8} \frac{1}{0} \frac{0}{0} \frac{0}{0} \frac{1}{3} \frac{2}{3} \frac{1}{3} \text{Fr} \frac{1}{3} \text{N}_L \in 1 - \text{Fr} \text{H}_T \frac{0}{0} \frac{1}{3} \text{Rs}$
 $\frac{1}{3} \frac{0}{0} \frac{5}{8} \text{Rs} \text{Fr} \frac{1}{10} \frac{0}{0} \frac{5}{8} \in - \text{N}_L \frac{5}{8} \frac{1}{3} \frac{3}{8} 1 \text{H}_T \text{N}_L \in 1 - \frac{1}{8} \text{N}_L \frac{5}{8} \text{Fr} \frac{5}{8} \in - \text{Fr} \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - \text{N}_L \text{Fr} \in -$
 $\frac{5}{8} \frac{1}{3} \text{Fr} \in 1 \text{V}_T \text{Fr} \text{Fr} \frac{5}{8} \frac{0}{0} \in 1 - \text{Fr} \text{Pt}$

$\frac{0}{0} 1 \text{Fr} \in - \text{Fr} \text{N}_L \frac{1}{3} - \frac{1}{8} \frac{5}{8} \text{Fr} \in - \frac{0}{0} \frac{5}{8} \frac{2}{3} \text{Fr} \text{V}_T \frac{1}{3} \text{Fr} \text{Rs} \frac{1}{2} \frac{2}{2} \frac{0}{0} \text{Fr} \in - \text{H}_T \frac{0}{0} \frac{1}{3} \frac{1}{3} - \frac{1}{8} \text{Pt}$
 $\text{H}_T \frac{1}{3} \text{Fr} \text{N}_L - \frac{5}{8} \text{Fr} \frac{5}{8} \frac{3}{8} \text{Fr} \in \text{N}_L \frac{0}{0} \text{ff} \frac{5}{8} \frac{0}{0} \frac{0}{0} \frac{0}{0} \text{N}_L \frac{0}{0} \text{Rs} \text{ff} \frac{5}{8} \text{Fr} \frac{1}{3} \text{H}_T \frac{5}{8} \text{V}_T \text{N}_L \in \frac{1}{8} \text{Fr} \text{Fr} \in \frac{5}{8} \frac{1}{3} \text{N}_L \frac{5}{8}$
 $\text{R} \in \text{N}^{\frac{2}{3}} \in \text{N}_L \frac{5}{8} \frac{3}{8} \text{N}_L \frac{1}{3} \frac{1}{8} 1 \text{N}^{\frac{2}{3}} \frac{3}{8} \in - \frac{5}{8} \frac{3}{8} \in \frac{0}{0} \in \text{N}_L \frac{1}{3} \frac{0}{0} \text{N}_L \frac{5}{8} \text{Fr} \frac{1}{3} \text{H}_T \frac{5}{8} \text{V}_T \text{N}_L \in \frac{1}{8} \text{Fr} \frac{1}{3} - \frac{3}{8}$
 $\text{H}_T \frac{0}{0} \frac{1}{3} \text{Fr} \text{N}^{\frac{2}{3}} \frac{1}{3} \frac{1}{8} 1 \text{N}_L \frac{5}{8} \text{Fr} \frac{1}{3} \text{H}_T \text{Rs} \frac{7}{8} 1 \text{Fr} \frac{2}{3} \frac{5}{8} \text{N}_L \text{N}_L \frac{5}{8} \text{Fr} \text{H}_T \frac{1}{3} \text{N}_L \in \frac{5}{8} - \text{N}_L \frac{1}{3} \text{V}_T \text{N}_L \frac{1}{8} 1 \text{N}^{\frac{2}{3}} \frac{5}{8} \text{Fr} \in -$
 $\frac{1}{8} \frac{1}{3} \text{Fr} \frac{3}{8} \in 1 \frac{5}{8} \frac{1}{3} \text{Fr} \frac{1}{8} \text{V}_T \frac{0}{0} \frac{1}{3} \text{Fr} \frac{3}{8} \in \text{Fr} \frac{5}{8} \frac{1}{3} \text{Fr} \frac{5}{8} \text{Fr} \frac{1}{3} - \frac{3}{8} \frac{3}{8} \in \frac{1}{3} \frac{2}{3} \frac{5}{8} \text{N}_L \frac{5}{8} \text{Fr} \text{Pt}$

$\text{Fr} \in \frac{5}{8} \frac{1}{3} \text{N}_L \frac{5}{8} \frac{1}{3} - \frac{3}{8} \text{H}_T \text{V}_T \frac{2}{3} \frac{0}{0} \frac{0}{0} \in \frac{1}{8} \in - \in \text{N}_L \in \frac{1}{3} \text{N}_L \in \frac{5}{8} \text{Fr} \text{N}_L \frac{1}{3} \text{N}^{\frac{2}{3}} \frac{1}{3} - \text{V}_T \frac{7}{8} \frac{1}{3} \frac{1}{8} \text{N}_L \text{V}_T \text{Fr} \frac{5}{8}$
 $\frac{1}{3} \frac{1}{8} \text{N}_L \in \frac{5}{8} \text{H}_T \frac{0}{0} \frac{1}{3} \text{Fr} \text{N}^{\frac{2}{3}} \frac{1}{3} \frac{1}{8} \frac{5}{8} \text{V}_T \text{N}_L \in \frac{1}{8} \frac{1}{3} \frac{0}{0} \in - \text{Fr} \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - \text{N}_L \text{Fr} \text{Fr} \in \text{N}_L \frac{0}{0} \in - \text{N}_L \frac{5}{8} \in \text{Fr}$
 $\frac{1}{8} 1 \text{V}_T - \text{N}_L \text{Fr} \in \frac{5}{8} \text{Fr} \in \frac{5}{8} \text{Fr} \text{H}_T \frac{5}{8} \frac{1}{8} \in \frac{1}{3} \frac{0}{0} \frac{0}{0} \text{Rs} \in - \frac{3}{8} \frac{5}{8} \frac{5}{8} \frac{0}{0} \frac{1}{3} \text{H}_T \in - \frac{0}{0} \frac{1}{8} 1 \text{V}_T - \text{N}_L \text{Fr} \in \frac{5}{8} \text{Fr} \text{Fr} \text{V}_T \frac{1}{8} \frac{0}{0}$
 $\frac{1}{3} \text{Fr} \frac{1}{3} \frac{1}{3} \in \frac{1}{3} \text{Fr} \in \text{Fr} \frac{5}{8} \text{H}_T \frac{5}{8} \frac{1}{8} \text{N}_L \frac{5}{8} \frac{3}{8} \text{N}_L \frac{1}{3} \frac{3}{8} \text{Fr} \in \frac{5}{8} \text{N}_L \frac{5}{8} \frac{0}{0} \text{Fr} \frac{1}{3} \text{Fr} \frac{1}{3} \text{N}_L \frac{0}{0} \frac{1}{8} \text{N}_L \frac{5}{8}$
 $\text{N}^{\frac{2}{3}} \frac{1}{3} \text{Fr} \text{C}_u \frac{5}{8} \text{N}_L \text{Pt} \frac{0}{0} 1 \text{Fr} \in - \text{Fr} \text{N}_L \frac{1}{3} - \frac{1}{8} \frac{5}{8} \text{Fr} \text{Fr} \text{H}_T \text{Fr} \frac{1}{3} \frac{5}{8} \text{V}_T \frac{1}{8} \text{N}_L \in 1 - \in - \frac{1}{3} \frac{3}{8} \in \frac{1}{3} \in \text{Fr}$
 $\text{H}_T \text{Fr} 1 \text{N}^{\frac{2}{3}} \text{N}_L \frac{5}{8} \frac{3}{8} \text{V}_T - \frac{3}{8} \frac{5}{8} \text{Fr} \text{N}_L \frac{5}{8} \text{Fr} \frac{1}{3} \frac{0}{0} \frac{5}{8} \text{Fr} \frac{1}{3} \frac{0}{0} \frac{5}{8} \in - \frac{1}{3} \frac{3}{8} \in \frac{1}{3} \in - \in \text{N}_L \in \frac{1}{3} \text{N}_L \in \frac{5}{8} \text{Fr} \text{Pt}$

$\square \text{R}^{5/8} \text{F}^{5/8-1/8^{5/8}} \quad 17/8 \quad \text{H}_T \text{R}^1 \text{N}^{\ominus} \in -5/8 - \text{N}_L \quad \text{H}_T \% 001/3 \text{R}^{5/8} \text{F}_R \text{F} \quad 1/3-3/8 \quad \in -1/8 \text{R}^{5/8} 1/3 \text{F} \in -\ominus$
 $\ominus 1 \oplus 5/8 \text{R} - \text{N}^{25/8} - \text{N}_L \quad \in - \in \text{N}_L \in 1/3 \text{N}_L \in \oplus 5/8 \text{F} \quad 7/8^1 \text{R} \quad \text{N}_L^{\ominus 5/8} \quad 3/8^{5/8} \oplus 5/8 \% 001 \text{H}_T \text{N}^{25/8} - \text{N}_L \quad 17/8$
 $\text{H}_T \ominus 1/3 \text{R} \text{N}^{21/3} 1/8^{5/8} \text{V}_T \text{N}_L \in 1/8 1/3 \% 00 \text{F} \quad \in - \quad \oplus 1/3 \text{R} \in 1 \text{V}_T \text{F} \quad \text{R}^{5/8} \ominus \in 1 - \text{F} \quad 1/3 \text{R}^{5/8} \quad 1/3 \% 00 \text{F}^1$
 $5/8 \text{N}^{\text{H}_T 5/8} 1/8 \text{N}_L^{5/8 3/8} \quad \text{N}_L^1 \quad 2/3^{11} \text{F} \text{N}_L \quad \text{N}_L^{\ominus 5/8} \quad \text{N}^{21/3} \text{R}^{\text{C}} 5/8 \text{N}_L \quad \ominus \text{R}^1 \text{W} \text{N}_L^{\ominus} \text{P}_t \quad \ddagger - 1/8 \text{R}^{5/8} 1/3 \text{F} \in -\ominus$
 $1/8^1 - \text{F} \text{V}_T \text{N}^{25/8} \text{R} \quad 1/3 \text{W} 1/3 \text{R}^{5/8} - 5/8 \text{F} \text{F} \quad 1/3-3/8 \quad 3/8^{5/8} \text{N}^{21/3} - 3/8 \quad 7/8^1 \text{R} \quad 5/8 1/8^1 - 1 \text{N}^{\ominus} \in 1/8 1/3 \% 00 \quad 1/3-3/8$
 $5/8 7/8 7/8 5/8 1/8 \text{N}_L \in \oplus 5/8 \quad \text{N}_L \text{R}^{5/8} 1/3 \text{N}_L \text{N}^{25/8} - \text{N}_L \quad \text{F} \text{N}_L \text{R}^{1/3} \text{N}_L^{5/8} \ominus \in 5/8 \text{F} \text{F} \quad 5/8 \text{F} \text{H}_T 5/8 1/8 \in 1/3 \% 00 \% 00 \text{Rs} \quad \in -$
 $"\text{F} \in 1/3 \quad \square 1/3 1/8 \in 7/8 \in 1/8 \quad 1/3-3/8 \quad \bullet \in 3/8 3/8 \% 00 5/8 \quad , 1/3 \text{F} \text{N}_L \quad 1/3-3/8 \quad "7/8 \text{R} \in 1/8 1/3 \text{F} \quad 1/3 \text{R}^{5/8} \quad 3/8 \text{R} \in \oplus \in -\ominus$
 $\text{N}_L^{\ominus 5/8} \quad \text{F} 1/3 \% 00 5/8 \text{F} \quad 1/8 \ominus 1/3 - - 5/8 \% 00 \text{F} \text{P}_t$

$\ddagger - \quad 1/3 3/8 3/8 \in \text{N}_L \in 1 - \text{F} \quad \ominus \in \ominus \ominus \quad 1/3 3/8^1 \text{H}_T \text{N}_L \in 1 - \quad 1/3-3/8 \quad \ominus \text{R}^1 \text{W} \in -\ominus \quad \text{V}_T \text{F} 1/3 \ominus 5/8 \quad 17/8$
 $1 - \% 00 \in - 5/8 \quad \text{H}_T \ominus 1/3 \text{R} \text{N}^{21/3} 1/8 \in 5/8 \text{F} \quad 1/3 \text{R}^{5/8} \quad \% 00 \in \text{C} 5/8 \% 00 \text{Rs} \quad \text{N}_L^1 \quad 3/8 \text{R} \in \oplus 5/8 \quad \text{N}_L^{\ominus 5/8} \quad 5/8 \text{F}$
 $1/8^1 \text{N}^{\ominus} \text{N}^{25/8} \text{R}^{1/8} 5/8 \quad \text{F} 1/3 \% 00 5/8 \text{F} \quad 17/8 \quad " \square \ddagger \text{F} \text{P}_t$

$\text{ff} \ominus 5/8 \quad " \square \ddagger \quad \text{N}^{21/3} \text{R}^{\text{C}} 5/8 \text{N}_L \quad \in \text{F} \quad 1/8^1 \text{N}^{\text{H}_T 5/8} \text{N}_L \in \text{N}_L \in \oplus 5/8 \quad \in - \quad -1/3 \text{N}_L \text{V}_T \text{R}^{5/8} \quad 1/3-3/8 \quad \in \text{F}$
 $2/3 5/8 1/8^1 \text{N}^{\ominus} \in -\ominus \quad \in - 1/8 \text{R}^{5/8} 1/3 \text{F} \in -\ominus \% 00 \text{Rs} \quad 1/8^1 \text{N}^{\text{H}_T 5/8} \text{N}_L \in \text{N}_L \in \oplus 5/8 \text{P}_t \quad -1 - \text{F} 5/8 \text{F} \text{V}_T 5/8 - \text{N}_L \% 00 \text{Rs} \text{F}$
 $\text{N}^{21/3} - \text{V}_T 7/8 1/3 1/8 \text{N}_L \text{V}_T \text{R}^{5/8} \text{F}_R \text{F} \quad 1/3 \text{R}^{5/8} \quad \text{R}^{5/8} \text{F} \text{V}_T \in \text{R}^{5/8} 3/8 \quad \text{N}_L^1 \quad 5/8 - \ominus 1/3 - 1/8^{5/8} \quad \text{H}_T \text{R}^{13/8} \text{V}_T 1/8 \text{N}_L \text{F} \quad \in -$
 $1 \text{R}^{3/8} 5/8 \text{R} \quad \text{N}_L^1 \quad \ominus 1/3 \in - \quad 1/3 3/8 \oplus 1/3 - \text{N}_L 1/3 \ominus 5/8 \quad 1 \oplus 5/8 \text{R} \quad \text{H}_T \text{R}^{5/8} \oplus \in 1 \text{V}_T \text{F} \% 00 \text{Rs} \quad \text{N}^{21/3} \text{R}^{\text{C}} 5/8 \text{N}_L^{5/8 3/8}$
 $\text{H}_T \text{R}^{13/8} \text{V}_T 1/8 \text{N}_L \text{F} \text{P}_t$

$\text{O}^1 \text{R} \quad \in - \text{F} \text{N}_L 1/3 - 1/8^{5/8} \text{F} \quad \in - \quad \bullet 1/3 \text{R}^{1/8} \ominus \quad 1/2^{\text{20}} \text{F} \quad \text{R} \text{P}_t \quad \ominus 5/8 3/8 3/8 \text{Rs}^1 \text{F}$
 $\text{R}^{1/3} 2/3^1 \text{R}^{1/3} \text{N}_L^1 \text{R} \in 5/8 \text{F} \quad \text{R} \text{N}_L^{3/8} \text{P}_t \quad \% 00 1/3 \text{V}_T - 1/8^{\ominus 5/8} 3/8 \quad \text{fl} - \gg \text{F} 1/3 \quad -1/2 - \quad 1/8 \text{V}_T \text{F} \text{N}_L^1 \text{N}^{25/8} \text{R}$
 $\text{F} 5/8 \text{R} \oplus \in 1/8^{5/8} \quad \text{H}_T^1 \text{R} \text{N}_L 1/3 \% 00 \text{P}_t \quad \text{ff} \ominus 5/8 \quad \text{H}_T \% 00 1/3 \text{N}_L 7/8^1 \text{R} \text{N}^{\ominus} \quad \text{W} 1/3 \text{F} \quad 3/8^{5/8} \text{F} \in \ominus - 5/8 3/8 \quad \text{N}_L^1 \quad \text{N}^{21/3} - 1/3 \ominus 5/8$
 $\text{N}_L^{\ominus 5/8} \quad \ominus \text{R}^1 \text{W} \in -\ominus \quad 3/8^{5/8} \text{N}^{21/3} - 3/8 \quad 7/8^1 \text{R} \quad \ominus 5/8 - 5/8 \text{R} \in 1/8 \quad 1/3 1/8 \text{N}_L \in \oplus 5/8$
 $\text{H}_T \ominus 1/3 \text{R} \text{N}^{21/3} 1/8^{5/8} \text{V}_T \text{N}_L \in 1/8 1/3 \% 00 \quad \in - \ominus \text{R}^{5/8} 3/8 \in 5/8 - \text{N}_L \text{F} \quad 2/3 \text{Rs} \quad \text{F} \in \ominus - \in 7/8 \in 1/8 1/3 - \text{N}_L \% 00 \text{Rs}$
 $\in - 1/8 \text{R}^{5/8} 1/3 \text{F} \in -\ominus \quad 1 \text{H}_T 5/8 \text{R}^{1/3} \text{N}_L \in 1 - 1/3 \% 00 \quad 5/8 7/8 7/8 \in 1/8 \in 5/8 - 1/8 \text{Rs} \text{P}_t$

$\text{O} \text{V}_T \text{R} \text{N}_L^{\ominus 5/8} \text{R} \quad \% 5/8 \text{Rs} \quad 7/8 \in - 3/8 \in - \ominus \text{F} \quad 7/8 \text{R}^1 \text{N}^{\ominus} \quad \text{N}_L^{\ominus 5/8} \quad \text{F} \text{N}_L \text{V}_T 3/8 \text{Rs} \quad \text{F} \text{V}_T \ominus 5/8 \text{F} \text{N}_L 3/4$

- $\blacksquare - \quad \text{N}_L^{\ominus 5/8} \quad 2/3 1/3 \text{F} \in \text{F} \quad 17/8 \quad \text{N}_L \text{Rs} \text{H}_T 5/8 \quad 17/8 \quad \text{F} \text{Rs} - \text{N}_L^{\ominus 5/8} \text{F} \in \text{F} \text{F} \quad \text{N}_L^{\ominus 5/8} \quad \text{F} \text{Rs} - \text{N}_L^{\ominus 5/8} \text{N}_L \in 1/8$
 $\text{F} 5/8 \ominus \text{N}^{25/8} - \text{N}_L \quad 3/8^1 \text{N}^{\ominus} \in - 1/3 \text{N}_L^{5/8} 3/8 \quad \text{N}_L^{\ominus 5/8} \quad 1/3 1/8 \text{N}_L \in \oplus 5/8 \quad \text{H}_T \ominus 1/3 \text{R} \text{N}^{21/3} 1/8^{5/8} \text{V}_T \text{N}_L \in 1/8 1/3 \% 00$
 $\in - \ominus \text{R}^{5/8} 3/8 \in 5/8 - \text{N}_L \text{F} \quad \text{N}^{21/3} \text{R}^{\text{C}} 5/8 \text{N}_L \quad \in - \quad 1/2^{\text{20}} \text{F} \quad 1 \text{W} \in -\ominus \quad \text{N}_L^1 \quad 5/8 1/3 \text{F} \text{Rs}$
 $1/3 \oplus 1/3 \in \% 00 1/2 3/3 \in \% 00 \in \text{N}_L \text{Rs} \quad 17/8 \quad \text{R}^{1/3} \text{W} \quad \text{N}^{21/3} \text{N}_L^{5/8} \text{R} \in 1/3 \% 00 \text{F} \quad 1/3-3/8 \quad 5/8 1/3 \text{F} \in 5/8 \text{R}$
 $\text{H}_T \text{R}^1 \text{N}_L 11/8^{10} \% 00 \text{F} \quad \in - \quad \text{H}_T \% 00 1/3 1/8^{5/8} \quad 7/8^1 \text{R} \quad \text{N}_L^{\ominus 5/8} \quad \text{F} \text{Rs} - \text{N}_L^{\ominus 5/8} \text{F} \in \text{F} \quad 17/8 \quad \text{N}_L^{\ominus 5/8} \text{F} 5/8$
 $\text{N}^{21/3} \% 00 5/8 1/8 \text{V}_T \% 00 5/8 \text{F}$

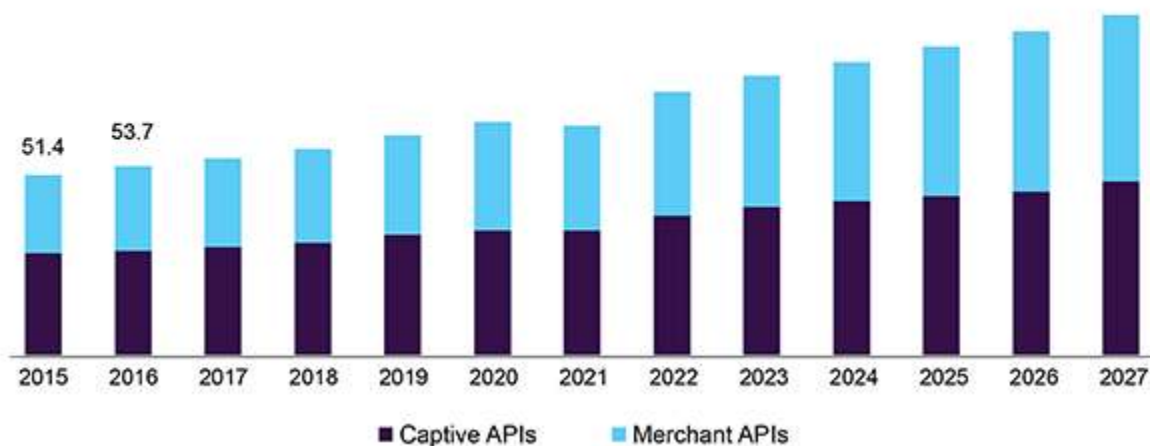
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Industry Insights

ff^{5/8} 00012/31/300 1/31/8N_L€^{5/8} H_T01/3FRN^{01/31/85/8}VTN_L€1/81/300 €-0FR5/83/8€5/8-N_L N^{01/3FR}0/5/8N_L LF€MD^{5/8} W^{1/3LF} 01/300VT^{5/83/8} 1/3N_L ffi- 00aPt 2/3€0000€1- €- 1/200 1/3-3/8 €LF 5/8LFN_L€N^{01/3N}5/83/8 N_L1 FR5/80€LFN_L5/8FR 1/3 -□□ 17/8 nPa_{*} 105/8FR N_L05/8 7/81FR5/81/81/3LFN_L H_T5/8FR€13/8Pt “3/801/3-1/85/8N^{05/8}-N_LLF €- 1/31/8N_L€^{5/8} H_T01/3FRN^{01/31/85/8}VTN_L€1/81/300 €-0FR5/83/8€5/8-N_L i“■†‡ N^{01/3}-VT7/81/31/8N_LVTFR€-00 0FR1W^{NL}0 17/8 N_L05/8 2/3€1H_T01/3FRN^{01/31/85/8}VTN_L€1/81/300 LF5/81/8N_L1FR 1/3-3/8 €-1/8FR5/81/3LF€-0 05/8FR€1/3N_LFR€1/8 H_T1H_TVT0001/3N_L€1- 1/3FR5/8 N_L05/8 0/5/8Rs 3/8FR€^{5/8}FRLF 17/8 N_L05/8 N^{01/3FR}0/5/8N_LPt

□€LF€-0 H_TFR5/801/3005/8-1/85/8 17/8 €-7/85/81/8N_L€1VTLF 3/8€LF5/81/3LF5/8LF 1/3-3/8 01LFH_T€N_L1/300¥1/31/8FVT€FR5/83/8 €-7/85/81/8N_L€1-LF 1/3FR5/8 5/8NH_T5/81/8N_L5/83/8 N_L1 3/8FR€^{5/8} N_L05/8 N^{01/3FR}0/5/8N_L 0FR1W^{NL}0 3/8VTFR€-0 N_L05/8 7/81FR5/81/81/3LFN_L H_T5/8FR€13/8Pt “1/81/81FR3/8€-0 N_L1 1/3 1/200 0---† 1/3FRN_L€1/8005/8 1- 1/3 LFVTFR^{5/8}Rs 1/81-3/8VT1/8N_L5/83/8 €- 1/3 N_L5/8FRN_L€1/3FRRs 01LFH_T€N_L1/300 €- TM1/3H_T1/3-£ 1/3FR1VT-3/8 1/41/40 2/31/31/8N_L5/8FR5/8N⁰€1/3 fffiff† 1/81/3LF5/8LF W^{5/8FR}5/8 €3/85/8-N_L€7/8€5/83/8Pt

U.S. Active Pharmaceutical Ingredients (API) market size, by type of manufacturer, 2015 - 2027 (USD Billion)



Source: www.grandviewresearch.com

†- 1/33/8€N_L€1-£ €-1/8FR5/81/3LF€-0 H_TFR5/801/3005/8-1/85/8 17/8 1/81-05/8-€N_L1/300

$\frac{5}{8} \frac{1}{3} \text{C}_R \text{N}_L$ $\frac{3}{8} \in \text{L}_F \frac{5}{8} \frac{1}{3} \text{L}_F \frac{5}{8}$ $\frac{1}{3} \frac{1}{8} \text{N}_L \text{L}_F$ $\frac{1}{3} \text{L}_F$ $\frac{1}{3}$ $\otimes \text{C}_R \text{W} \text{N}_L \otimes$ $\frac{3}{8} \text{C}_R \in \oplus \frac{5}{8} \text{C}_R$ $\frac{7}{8} \frac{1}{3} \text{C}_R$ $\text{N}_L \otimes \frac{5}{8}$
 $1 \oplus \frac{5}{8} \text{C}_R \frac{1}{3} \frac{0}{0} \frac{0}{0}$ $\text{N}^{\frac{2}{3}} \frac{1}{3} \text{C}_R \text{C}_U \frac{5}{8} \text{N}_L \text{P}_t$ $\text{H}_T \in \frac{3}{8} \frac{5}{8} \text{N}^{\frac{2}{3}} \in \frac{1}{0} \frac{0}{0} \frac{1}{0} \otimes \in \frac{1}{8} \frac{1}{3} \frac{0}{0}$ $\text{L}_F \text{N}_L \text{V}_T \frac{3}{8} \in \frac{5}{8} \text{L}_F$ $\otimes \frac{1}{3} \oplus \frac{5}{8}$ $\text{L}_F \otimes \text{W}$
 $\otimes \text{W}$ $\frac{0}{0} \in \frac{7}{8} \frac{5}{8} \text{L}_F \text{N}_L \text{Rs} \frac{0}{0} \frac{5}{8}$ $\otimes \frac{1}{3} \frac{2}{3} \in \text{N}_L \text{L}_F$ $\text{L}_F \text{V}_T \frac{1}{8} \otimes$ $\frac{1}{3} \text{L}_F$ $\text{L}_F \text{N}^{\frac{2}{3}} \text{C}_U \in \otimes$ $\frac{1}{3} - \frac{3}{8}$ $\frac{3}{8} \in \frac{5}{8} \text{N}_L \frac{1}{3} \text{C}_R \text{Rs}$
 $\in \text{C}_R \text{C}_R \frac{5}{8} \otimes \text{V}_T \frac{0}{0} \frac{1}{3} \text{C}_R \in \text{N}_L \in \frac{5}{8} \text{L}_F \text{W} \otimes \in \frac{1}{8} \otimes$ $\frac{1}{8} \frac{1}{3} -$ $\text{C}_R \frac{5}{8} \text{L}_F \text{V}_T \frac{0}{0} \text{N}_L$ $\in -$ $\frac{12}{5} \frac{5}{8} \text{L}_F \in \text{N}_L \text{Rs} \frac{1}{3} \frac{1}{3} \text{C}_R \frac{5}{8}$
 $\frac{1}{3} \text{L}_F \text{L}_F \frac{11}{8} \in \frac{1}{3} \text{N}_L \frac{5}{8} \frac{3}{8}$ $\text{W} \in \text{N}_L \otimes$ $\in - \frac{1}{8} \text{C}_R \frac{5}{8} \frac{1}{3} \text{L}_F \frac{5}{8} \frac{3}{8}$ $\text{C}_R \in \text{L}_F \text{C}_U$ $\frac{17}{8}$ $\frac{3}{8} \in \text{L}_F \frac{5}{8} \frac{1}{3} \text{L}_F \frac{5}{8} \text{P}_t$
 $\ddagger - \frac{1}{8} \text{C}_R \frac{5}{8} \frac{1}{3} \text{L}_F \in \otimes$ $\text{H}_T \text{C}_R \frac{5}{8} \oplus \frac{1}{3} \frac{0}{0} \frac{5}{8} - \frac{1}{8} \frac{5}{8}$ $\frac{17}{8}$ $\frac{12}{5} \frac{5}{8} \text{L}_F \in \text{N}_L \text{Rs}$ $\in \text{L}_F$ $\otimes \frac{5}{8} - \frac{1}{8} \frac{5}{8}$
 $\frac{5}{8} \text{L}_F \text{N}_L \in \text{N}^{\frac{2}{3}} \frac{1}{3} \text{N}_L \frac{5}{8} \frac{3}{8}$ $\text{N}_L \frac{1}{3}$ $\frac{3}{8} \text{C}_R \in \oplus \frac{5}{8}$ $\text{N}_L \otimes \frac{5}{8}$ $\frac{3}{8} \frac{5}{8} \text{N}^{\frac{2}{3}} \frac{1}{3} - \frac{3}{8}$ $\frac{7}{8} \frac{1}{3} \text{C}_R$ “ $\ddagger \text{L}_F \text{P}_t$

“ $\ddagger \text{L}_F$ $\frac{1}{3} \text{C}_R \frac{5}{8}$ $\frac{1}{3} \frac{0}{0} \text{L}_F \frac{1}{3}$ $\text{V}_T \text{L}_F \frac{5}{8} \frac{3}{8}$ $\frac{1}{3} \text{L}_F$ $\frac{1}{3} - \text{N}_L \in \frac{2}{3} \frac{13}{8} \text{Rs}$ $\frac{3}{8} \text{C}_R \text{V}_T \otimes$ $\frac{1}{8} \frac{1}{3} - \text{C}_U \text{V}_T \otimes \frac{1}{3} \text{N}_L \frac{5}{8} \text{L}_F$
 L_F “ $\text{L}_F \text{P}_t$ “ L_F $\frac{1}{3} \text{C}_R \frac{5}{8}$ $\in \text{N}^{\frac{2}{3}} \text{H}_T \text{C}_R \text{N}_L \frac{1}{3} - \text{N}_L$ $\frac{1}{3} - \frac{3}{8}$ $\frac{5}{8} \frac{7}{8} \frac{7}{8} \frac{5}{8} \frac{1}{8} \text{N}_L \in \oplus \frac{5}{8}$ $\text{N}_L \text{C}_R \frac{5}{8} \frac{1}{3} \text{N}_L \text{N}^{\frac{2}{3}} \frac{5}{8} - \text{N}_L$
 $\text{N}^{\frac{2}{3}} \frac{13}{8} \frac{1}{3} \frac{0}{0} \in \text{N}_L \in \frac{5}{8} \text{L}_F$ $\text{V}_T \text{L}_F \frac{5}{8} \frac{3}{8}$ $\in -$ $\frac{1}{8} \frac{1}{3} \text{N}^{\frac{2}{3}} \frac{3}{8} \in - \frac{1}{3} \text{N}_L \in \frac{1}{3} -$ $\text{W} \in \text{N}_L \otimes$ $\text{N}^{\frac{2}{3}} - \frac{11}{8} \frac{0}{0} \frac{1}{3} - \frac{1}{3} \frac{0}{0}$
 $\frac{1}{3} - \text{N}_L \in \frac{2}{3} \frac{13}{8} \frac{5}{8} \text{L}_F$ $\frac{1}{3} - \frac{3}{8}$ $\frac{2}{3} \in \frac{1}{0} \frac{0}{0} \frac{1}{0} \otimes \in \frac{1}{8} \frac{1}{3} \frac{0}{0} \frac{0}{0} \text{Rs}$ $\frac{1}{3} \frac{1}{8} \text{N}_L \in \oplus \frac{5}{8}$ $\frac{3}{8} \text{C}_R \text{V}_T \otimes \text{L}_F$ $\frac{7}{8} \frac{1}{3} \text{C}_R$
 $\frac{1}{8} \frac{1}{3} - \frac{1}{8} \frac{5}{8} \text{C}_R \text{P}_t$ “ $\ddagger \text{L}_F$ $\text{N}_L \frac{1}{3} \text{C}_R \otimes \frac{5}{8} \text{N}_L$ $\frac{1}{8} \frac{1}{3} - \frac{1}{8} \frac{5}{8} \text{C}_R$ $\frac{1}{8} \frac{5}{8} \frac{0}{0} \frac{0}{0} \text{L}_F$ $\frac{5}{8} \frac{7}{8} \frac{7}{8} \frac{5}{8} \frac{1}{8} \text{N}_L \in \oplus \frac{5}{8} \frac{0}{0} \text{Rs} \in$
 $\text{W} \otimes \in \frac{0}{0} \frac{5}{8}$ $\frac{1}{8} \frac{1}{3} \text{V}_T \text{L}_F \in \otimes$ $\text{N}^{\frac{2}{3}} \in - \in \text{N}^{\frac{2}{3}} \text{V}_T \text{N}^{\frac{2}{3}}$ $\frac{5}{8} \text{N}^{\frac{2}{3}} \text{H}_T \text{L}_F \text{V}_T \text{C}_R \frac{5}{8}$ $\frac{17}{8}$ $\frac{3}{8} \text{C}_R \text{V}_T \otimes \text{L}_F$ $\text{N}_L \frac{1}{3}$ $\otimes \frac{5}{8} \frac{1}{3} \frac{0}{0} \text{N}_L \otimes \text{Rs}$
 $\text{N}_L \in \text{L}_F \text{L}_F \text{V}_T \frac{5}{8} \text{L}_F \text{P}_t$

$\frac{1}{3} \text{N}_L \frac{5}{8} - \text{N}_L$ $\frac{5}{8} \text{N}^{\frac{2}{3}} \text{H}_T \in \text{C}_R \frac{1}{3} \text{N}_L \in \frac{1}{3} - \text{L}_F$ $\frac{17}{8}$ $\frac{2}{3} \frac{0}{0} \frac{11}{8} \frac{0}{0} \frac{2}{3} \text{V}_T \text{L}_F \text{N}_L \frac{5}{8} \text{C}_R$ $\frac{3}{8} \text{C}_R \text{V}_T \otimes \text{L}_F$ $\otimes \in \oplus \frac{5}{8}$
 $\text{C}_R \in \text{L}_F \frac{5}{8}$ $\text{N}_L \frac{1}{3}$ $\otimes \frac{5}{8} - \frac{5}{8} \text{C}_R \in \frac{1}{8}$ $\oplus \frac{5}{8} \text{C}_R \text{L}_F \in \frac{1}{3} - \text{L}_F$ $\frac{17}{8}$ $\text{N}_L \otimes \frac{5}{8} \text{L}_F \frac{5}{8}$ $\text{N}^{\frac{2}{3}} \frac{10}{0} \frac{0}{0} \frac{5}{8} \frac{1}{8} \text{V}_T \frac{0}{0} \frac{5}{8} \text{L}_F \in$ $\text{W} \otimes \frac{5}{8} \text{C}_R \frac{5}{8} \in -$
 $\text{N}_L \otimes \frac{5}{8}$ $\text{N}^{\frac{2}{3}} \frac{1}{3} - \text{V}_T \frac{7}{8} \frac{1}{3} \frac{1}{8} \text{N}_L \text{V}_T \text{C}_R \frac{5}{8} \text{C}_R \text{L}_F$ $\frac{2}{3} \frac{5}{8} \frac{1}{3} \text{C}_R$ $\text{N}_L \otimes \frac{5}{8}$ $\frac{1}{8} \frac{1}{3} \text{L}_F \text{N}_L \text{P}_t$ “ $\frac{7}{8} \text{N}_L \frac{5}{8} \text{C}_R$ $\frac{1}{3}$ $\text{H}_T \frac{1}{3} \text{N}_L \frac{5}{8} - \text{N}_L$
 $\frac{5}{8} \text{N}^{\frac{2}{3}} \text{H}_T \in \text{C}_R \frac{5}{8} \text{L}_F \in$ $\square \text{L}_F$ $\in - \oplus \frac{5}{8} \text{L}_F \text{N}_L \text{N}^{\frac{2}{3}} \frac{5}{8} - \text{N}_L \text{L}_F$ $\frac{3}{8} \frac{1}{3} - \frac{5}{8}$ $\frac{2}{3} \text{Rs}$ $\text{N}_L \otimes \frac{5}{8}$ $\frac{1}{8} \frac{1}{3} \text{N}^{\frac{2}{3}} \text{H}_T \frac{1}{3} - \text{Rs}$ $\frac{1}{3} \text{C}_R \frac{5}{8}$ $- \frac{1}{0} \frac{0}{0} \frac{1}{3} - \otimes \frac{5}{8} \text{C}_R$ $\frac{2}{3} \frac{5}{8} - \frac{5}{8} \frac{7}{8} \in \frac{1}{8} \in \frac{1}{3} \frac{0}{0}$ $\frac{7}{8} \frac{1}{3} \text{C}_R$ $\text{N}_L \otimes \frac{5}{8}$ $\frac{1}{8} \frac{1}{3} \text{N}^{\frac{2}{3}} \text{H}_T \frac{1}{3} - \text{Rs} \text{P}_t$ “ \ddagger $\text{H}_T \text{C}_R \frac{13}{8} \text{V}_T \frac{1}{8} \text{N}_L \in \frac{1}{3} -$
 $\text{C}_R \frac{5}{8} \text{L}_F \text{V}_T \in \text{C}_R \frac{5}{8} \text{L}_F$ $\frac{1}{3}$ $\otimes \text{V}_T \otimes \frac{5}{8}$ $\frac{1}{8} \frac{1}{3} \text{H}_T \in \text{N}_L \frac{1}{3} \frac{0}{0}$ $\frac{1}{3} \text{N}^{\frac{2}{3}} \text{V}_T - \text{N}_L$ $\frac{1}{3} \text{L}_F$ $\text{N}_L \otimes \frac{5}{8}$ $\text{H}_T \text{C}_R \frac{11}{8} \frac{5}{8} \text{L}_F \text{L}_F$ $- \frac{5}{8} \frac{5}{8} \frac{3}{8} \text{L}_F$
 $\frac{5}{8} \text{N}_L \text{C}_R \frac{5}{8} \text{N}^{\frac{2}{3}} \frac{5}{8} \frac{0}{0} \text{Rs}$ $\text{L}_F \text{Rs} \text{L}_F \text{N}_L \frac{5}{8} \text{N}^{\frac{2}{3}} \frac{1}{3} \text{N}_L \in \frac{1}{8}$ $\text{H}_T \text{C}_R \frac{1}{3} \text{N}_L \frac{11}{8} \frac{1}{0} \frac{0}{0} \text{L}_F \text{P}_t$ $\text{ff} \otimes \text{V}_T \text{L}_F \in$
 $\text{H}_T \otimes \frac{1}{3} \text{C}_R \text{N}^{\frac{2}{3}} \frac{1}{3} \frac{1}{8} \frac{5}{8} \text{V}_T \text{N}_L \in \frac{1}{8} \frac{1}{3} \frac{0}{0}$ $\frac{1}{8} \frac{1}{3} \text{N}^{\frac{2}{3}} \text{H}_T \frac{1}{3} - \in \frac{5}{8} \text{L}_F$ $\frac{2}{3} \frac{5}{8} - \frac{5}{8} \frac{7}{8} \in \text{N}_L$ $\frac{7}{8} \text{C}_R \frac{1}{3} \text{N}^{\frac{2}{3}}$ $\frac{1}{3} \text{V}_T \text{N}_L \text{L}_F \frac{1}{3} \text{V}_T \text{C}_R \frac{1}{8} \in \otimes$
“ \ddagger $\text{H}_T \text{C}_R \frac{13}{8} \text{V}_T \frac{1}{8} \text{N}_L \in \frac{1}{3} - \in$ $\frac{1}{3} \text{L}_F$ $\in \text{N}_L$ $\frac{5}{8} \frac{0}{0} \in \text{N}^{\frac{2}{3}} \in - \frac{1}{3} \text{N}_L \frac{5}{8} \text{L}_F$ $\text{N}_L \otimes \frac{5}{8}$ $- \frac{5}{8} \frac{5}{8} \frac{3}{8}$ $\frac{7}{8} \frac{1}{3} \text{C}_R$ $\frac{0}{0} \frac{1}{3} \frac{2}{3} \frac{1}{3} \text{C}_R$
 $\frac{7}{8} \frac{1}{3} \text{C}_R \frac{1}{8} \frac{5}{8}$ $\frac{1}{3} - \frac{3}{8}$ $\in - \text{L}_F \text{N}_L \frac{1}{3} \frac{0}{0} \frac{0}{0} \in \otimes$ $\frac{5}{8} \text{N}^{\frac{2}{3}} \text{H}_T \frac{5}{8} - \text{L}_F \in \oplus \frac{5}{8}$ $\text{N}^{\frac{2}{3}} \frac{1}{3} - \text{V}_T \frac{7}{8} \frac{1}{3} \frac{1}{8} \text{N}_L \text{V}_T \text{C}_R \in \otimes$
 $\text{V}_T \in \text{N}_L \text{L}_F \text{P}_t$

$- \text{N}_L \text{C}_R \frac{1}{3} \text{N}_L \frac{5}{8} \otimes \in \frac{1}{8}$ $\frac{1}{3} \text{V}_T \text{N}_L \text{L}_F \frac{1}{3} \text{V}_T \text{C}_R \frac{1}{8} \in \otimes$ $\frac{1}{3} \frac{0}{0} \frac{0}{0} \frac{1}{0} \text{W} \text{L}_F$ $\frac{1}{8} \frac{1}{3} \text{N}^{\frac{2}{3}} \text{H}_T \frac{1}{3} - \in \frac{5}{8} \text{L}_F$ $\text{N}_L \frac{1}{3}$ $\frac{7}{8} \frac{11}{8} \text{V}_T \text{L}_F$
 $1 -$ $\text{N}_L \otimes \frac{5}{8} \in \text{C}_R$ $\frac{1}{8} \frac{1}{3} \text{C}_R \frac{5}{8}$ $\frac{1}{8} \frac{1}{3} \text{N}^{\frac{2}{3}} \text{H}_T \frac{5}{8} \text{N}_L \frac{5}{8} - \frac{1}{8} \in \frac{5}{8} \text{L}_F \in$ $\text{V}_T \frac{0}{0} \text{N}_L \in \text{N}^{\frac{2}{3}} \frac{1}{3} \text{N}_L \frac{5}{8} \frac{0}{0} \text{Rs}$ $\text{C}_R \frac{5}{8} \text{L}_F \text{V}_T \frac{0}{0} \text{N}_L \in \otimes$
 $\in -$ $\in - \frac{1}{8} \text{C}_R \frac{5}{8} \frac{1}{3} \text{L}_F \frac{5}{8} \frac{3}{8}$ $\text{H}_T \text{C}_R \frac{13}{8} \text{V}_T \frac{1}{8} \text{N}_L \in \oplus \in \text{N}_L \text{Rs} \text{P}_t$ $\text{ff} \otimes \frac{5}{8} \text{L}_F \frac{5}{8}$ $\frac{7}{8} \frac{1}{3} \frac{1}{8} \text{N}_L \frac{1}{3} \text{C}_R \text{L}_F$ $\frac{1}{3} \text{C}_R \frac{5}{8}$ $\frac{1}{3} \frac{0}{0} \text{L}_F \frac{1}{3}$
 $\text{H}_T \text{C}_R \frac{1}{0} \frac{5}{8} \frac{1}{8} \text{N}_L \frac{5}{8} \frac{3}{8}$ $\text{N}_L \frac{1}{3}$ $\frac{3}{8} \text{C}_R \in \oplus \frac{5}{8}$ $\text{N}_L \otimes \frac{5}{8}$ $\frac{1}{3} \frac{1}{8} \text{N}_L \in \oplus \frac{5}{8}$ $\text{H}_T \otimes \frac{1}{3} \text{C}_R \text{N}^{\frac{2}{3}} \frac{1}{3} \frac{1}{8} \frac{5}{8} \text{V}_T \text{N}_L \in \frac{1}{8} \frac{1}{3} \frac{0}{0}$
 $\in \otimes \text{C}_R \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - \text{N}_L$ $\text{N}^{\frac{2}{3}} \frac{1}{3} \text{C}_R \text{C}_U \frac{5}{8} \text{N}_L$ $\otimes \text{C}_R \text{W} \text{N}_L \otimes \text{P}_t$

ffRs^H_T⁵/₈ ‡-L_F€⁰⁰N_LL_F

■- N_L⁰⁵/₈ 2/3¹/₃L_F€L_F 17/8 N_LRs^H_T⁵/₈ N_L⁰⁵/₈ N⁰¹/₃R_C^u₅/₈N_L €L_F 1/8⁰⁰/₁/₃L_FL_F€7/8€⁵/₈3/8
 €-N_L¹ €--1⊕¹/₃N_L€⊕⁵/₈ 1/3-3/8 ⊗⁵/₈-5/8R_F€1/8 “■‡L_FP_t ‡-1⊕¹/₃N_L€⊕⁵/₈ “■‡L_F
 3/8¹N⁰²€-1/3N_L⁵/₈3/8 N_L⁰⁵/₈ 1⊕⁵/₈R₁³/₀₀0/0 N⁰¹/₃R_C^u₅/₈N_L €- 1/2⁰⁰ 3/8V_T⁵/₈ N_L¹ N_L⁰⁵/₈
 H_TR_F⁵/₈L_F⁵/₈-1/8⁵/₈ 17/8 7/8¹/₃⊕¹R₁³/₂3/00⁵/₈ ⊗¹⊕⁵/₈R_F-N⁰⁵/₈-N_L R_F⁵/₈⊗⁰V_T⁰⁰/₁/₃N_L€1-L_F€
 5/8L_FN_L¹/₃2/3⁰⁰€L_F⁰⁵/₈3/8 □¶, 7/8¹/₃1/8€⁰⁰€N_L€5/8L_F€ 1/3-3/8 €-1/8R_F⁵/₈1/3L_F⁵/₈3/8 7/8V_T-3/8€-⊗
 7/8¹R_F -1⊕⁵/₈0/0 3/8R_FV_T⊗ 3/8⁵/₈⊕⁵/₈0/0¹H_TN⁰⁵/₈-N_LP_t ■W€-⊗ N_L¹ 5/8N_L⁵/₈-L_F€⊕⁵/₈
 R_F⁵/₈L_F⁵/₈1/3R₁⁰ €- N_L⁰€L_F 7/8€⁵/₈0/00³/₈€ L_F⁵/₈⊕⁵/₈R₁³/₀₀ -1⊕⁵/₈0/0 €--1⊕¹/₃N_L€⊕⁵/₈
 H_TR₁³/₈V_T¹/₈N_LL_F 1/3R_F⁵/₈ €- N_L⁰⁵/₈ H_T€H_T⁵/₈0/0€-5/8 1/3-3/8 1/3R_F⁵/₈ 5/8N_L⁵/₈1/8N_L⁵/₈3/8 N_L¹ 2/3⁵/₈
 0/00¹/₃V_T-1/8⁰⁵/₈3/8 1⊕⁵/₈R_F N_L⁰⁵/₈ -5/8N_L 7/8⁵/₈W Rs⁵/₈1/3R_FL_FP_t

ff⁰⁵/₈ ⊗⁵/₈-5/8R_F€1/8 “■‡L_F L_F⁵/₈⊗N⁰⁵/₈-N_L €L_F 5/8L_FN_L€N⁰¹/₃N_L⁵/₈3/8 N_L¹ W€N_L-5/8L_FL_F
 0/0V_T¹/₈R₁³/₈N_L€⊕⁵/₈ ⊗R₁W^N_L⊗ 1⊕⁵/₈R_F N_L⁰⁵/₈ 7/8¹R_F⁵/₈1/8¹/₃L_FN_L H_T⁵/₈R_F€13/8P_t ■1/3N_L⁵/₈-N_L
 5/8N_LH_T€R_FRs 17/8 2/3R₁³/₈-3/8⁵/₈3/8 N⁰¹/₀₀5/8¹/₈V_T⁰⁰5/8L_F €L_F N_L⁰⁵/₈ 0/0⁵/₈Rs 7/8¹/₃1/8N_L¹R_F
 3/8R_F€⊕€-⊗ N_L⁰⁵/₈ 3/8⁵/₈N⁰¹/₃-3/8 7/8¹R_F ⊗⁵/₈-5/8R_F€1/8 “■‡ 3/8R_FV_T⊗L_FP_t ff⁰⁵/₈ ⊗⁵/₈-5/8R_F€1/8
 3/8R_FV_T⊗L_F N⁰¹/₃R_C^u₅/₈N_L €L_F 5/8N_LH_T⁵/₈1/8N_L⁵/₈3/8 N_L¹ L_F⁰¹W 0/0V_T¹/₈R₁³/₈N_L€⊕⁵/₈ ⊗R₁W^N_L⊗ €-
 1/8¹V_T-N_LR_F€5/8L_F L_FV_T¹/₈⊗ 1/3L_F ‡-3/8€1/3 1/3-3/8 -R₁³/₈MD€0/0 1W€-⊗ N_L¹ ⊗€⊗⁰
 1/3¹/₈1/8⁵/₈H_TN_L¹/₃-1/8⁵/₈ 0/0⁵/₈⊕⁵/₈0/0L_F 7/8¹R_F 1⊕⁵/₈R_F N_L⁰⁵/₈ 1/8¹V_T-N_L⁵/₈R_F i■ff-¿ 3/8R_FV_T⊗L_F
 1/3-3/8 H_TR_F⁵/₈L_F⁵/₈-1/8⁵/₈ 17/8 V_T-N⁰⁵/₈N_L 1/8⁰⁰€-€1/8¹/₃0/0 -5/8⁵/₈3/8L_F €- N_L⁰⁵/₈L_F⁵/₈
 5/8¹/₈-1N⁰²€5/8L_FP_t

Application Insights

APIs find application in oncology, cardiology, CNS and neurology, orthopedic,
 H_TV_T⁰⁰N⁰¹-1⁰⁰/₀₁⊗Rs€ ⊗¹/₃L_FN_LR_F¹⁵/₈-N_L⁵/₈R_F¹⁰/₀₀1⊗Rs€ -5/8H_T⊗R_F¹⁰/₀₀1⊗Rs€
 1H_T⊗N_L⁰¹/₃0/0N⁰¹/₀₀1⊗Rs€ 1/3-3/8 5/8-3/8¹/₈R_F€-1⁰⁰/₀₁⊗RsP_t -1/3R_F³/₈€1⁰⁰/₀₁⊗Rs
 3/8¹N⁰²€-1/3N_L⁵/₈3/8 N_L⁰⁵/₈ 1⊕⁵/₈R₁³/₀₀0/0 N⁰¹/₃R_C^u₅/₈N_L €- 1/2⁰⁰ 1W€-⊗ N_L¹ N_L⁰⁵/₈
 R_F€L_F€-⊗ H_TR_F⁵/₈⊕¹/₃0/0⁵/₈-1/8⁵/₈ 17/8 N_L¹/₃R_F⁰⁵/₈N_L 3/8€L_F⁵/₈1/3L_F⁵/₈L_F ⊗⁰⁰12/3¹/₃0/00/0RsP_t
 “1/8¹/₈1R_F³/₈€-⊗ N_L¹ N_L⁰⁵/₈ fit■€ 1/8¹/₃R_F³/₈€1⊕¹/₃L_F¹/₈V_T⁰⁰/₁/₃R_F 3/8€L_F⁵/₈1/3L_F⁵/₈L_F R_F⁵/₈L_FV_T⁰⁰N_L
 €- 1/3R₁¹V_T-3/8 ⊗P_t⊗ N⁰²€0/00/0€1- 3/8⁵/₈1/3N_L⊗L_F 5/8⊕⁵/₈R_FRs Rs⁵/₈1/3R_F€ ⊗⁰⁰12/3¹/₃0/00/0Rs€
 W⁰⁵/₈R_F⁵/₈€- ⊗P_t⊗ 17/8 N_L⁰⁵/₈L_F⁵/₈ 3/8⁵/₈1/3N_L⊗L_F 1/3R_F⁵/₈ 1/8¹/₃V_TL_F⁵/₈3/8 2/3Rs L_FN_LR_F¹/₀5/8L_F
 1/3-3/8 ⊗⁵/₈1/3R_FN_L 1/3N_L¹/₃1/8⁰/₀L_FP_t

Global Active Pharmaceutical Ingredients (API) market share, by application, 2019 (%)



Source: www.grandviewresearch.com

[illegible]

Regional Insights

$$\begin{aligned} & \circ_1 \mathbb{C}_R \mathbb{N}_L^{\otimes} \text{ " } \mathbb{N}^{25/8} \mathbb{C}_R \in 1/8 1/3 \quad 3/8 1 \mathbb{N}^{\circ} \in -1/3 \mathbb{N}_L^{5/8 3/8} \quad \mathbb{N}_L^{\otimes 5/8} \quad \mathbb{N}^{21/3} \mathbb{C}_R \mathbb{C}_U^{5/8} \mathbb{N}_L \in -1/2 \mathbb{Q} \mathbb{X} \quad 1 \mathbb{W} \in -^{\otimes} \mathbb{N}_L^1 \\ & \otimes \in \mathbb{M}^{\otimes} \quad 5/8 1/8 1 - 1 \mathbb{N}^{\circ} \in 1/8 \quad 3/8 5/8 \oplus 5/8 0_{00} 1 \mathbb{H}_T \mathbb{N}^{25/8} - \mathbb{N}_L \in - \quad \mathbb{N}_L^{\otimes 5/8} \quad \mathbb{C}_R^{5/8 \otimes} \in 1 - 1/8 1 \mathbb{V}_T \mathbb{H}_T 0_{00} 5/8 3/8 \quad \mathbb{W} \in \mathbb{N}_L^{\otimes} \\ & \mathbb{N}_L^{5/8 1/8 \otimes} - 1_{00} 1^{\otimes} \in 1/8 1/3 0_{00} \quad 1/3 3/8 \oplus 1/3 - 1/8 5/8 \mathbb{N}^{25/8} - \mathbb{N}_L \mathbb{L} \mathbb{F} \mathbb{P}_t \quad \ddagger - 1/8 \mathbb{C}_R^{5/8 1/3} \mathbb{L} \mathbb{F} \in -^{\otimes} \quad \mathbb{H}_T \mathbb{C}_R^{5/8} \oplus 1/3 0_{00} 5/8 - 1/8 5/8 \\ & 17/8 \quad 1/8 1/3 - 1/8 5/8 \mathbb{C}_R \quad 1/3 - 3/8 \quad 1 \mathbb{N}_L^{\otimes 5/8} \mathbb{C}_R \quad 0_{00} \in 7/8 5/8 \mathbb{L} \mathbb{F} \mathbb{N}_L \mathbb{R}_s 0_{00} 5/8 \mathbb{Y} 1/3 \mathbb{L} \mathbb{F} \mathbb{L}^{11/8} \in 1/3 \mathbb{N}_L^{5/8 3/8} \quad 3/8 \in \mathbb{L} \mathbb{F} 5/8 1/3 \mathbb{L} \mathbb{F} 5/8 \mathbb{L} \mathbb{F} \\ & 5/8 - 1/8 1 \mathbb{V}_T \mathbb{C}_R^{1/3 \otimes 5/8} \mathbb{L} \quad \square \mathbb{T} \langle \quad 1/3 1/8 \mathbb{N}_L \in \oplus \in \mathbb{N}_L \in 5/8 \mathbb{L} \quad 2/3 \mathbb{R}_s \quad \mathbb{C}_U^{5/8} \mathbb{R}_s \quad \mathbb{H}_T 0_{00} 1/3 \mathbb{R}_s^{5/8} \mathbb{C}_R \mathbb{L} \mathbb{F} \mathbb{L} \quad \mathbb{N}_L^{\otimes 5/8} \mathbb{C}_R^{5/8 2/3} \mathbb{R}_s \\ & 2/3 1^1 \mathbb{L} \mathbb{F} \mathbb{N}_L \in -^{\otimes} \quad \mathbb{N}_L^{\otimes 5/8} \quad \mathbb{N}^{21/3} \mathbb{C}_R \mathbb{C}_U^{5/8} \mathbb{N}_L \quad \otimes \mathbb{C}_R^1 \mathbb{W} \mathbb{N}_L^{\otimes} \mathbb{P}_t \end{aligned}$$

Asia Pacific is expected to be the fastest-growing market over the forecast period. Owing to the availability of affordable labor, major companies in the market are setting up API manufacturing plants in developing countries such as China and India.

Market Share Insights

—1N⁰⁵/₈ 17/8 N⁰⁵/₈ %⁵/₈Rs H¹/₀₀1/3Rs⁵/₈R¹/₂ €— N⁰⁵/₈ N⁰¹/₃R⁰/₅N¹/₃R⁵/₈ “2/32/ffl€⁵/₈ ‡—1/8P³ ff⁵/₈⊕1/3 ■⊙1/3R⁰¹/₃1/8⁵/₈V¹/₂N¹/₃€1/81/3%0 ‡—3/8V¹/₂F¹/₂N¹/₃R⁵/₈R¹/₂ R¹/₂N³/₈P³ ●Rs%⁰/₁3—
○P¹/₂fflP³ —€H¹/₀₀1/3 ‡—1/8P³ —15/8€R¹/₂—⊙⁵/₈R¹/₂ ‡—⊙⁵/₈%⁰/₀₀⊙⁵/₈€N⁰ ‡—N¹/₃5/8R¹/₂—1/3N¹/₃€1—1/3%0
□N⁰²/₃‡³ ●5/8R¹/₂%⁰/₁ ¶ —1P¹/₂ ‡—1/8P³ —V¹/₂— ■⊙1/3R⁰¹/₃1/8⁵/₈V¹/₂N¹/₃€1/81/3%0 ‡—3/8V¹/₂F¹/₂N¹/₃R⁵/₈R¹/₂
R¹/₂N³/₈P³ —R¹/₂€F¹/₂N¹/₃%⁰/₁●Rs⁵/₈R¹/₂ —F¹/₂V¹/₂€2/32/3 —1N⁰¹/₃1/3—Rs³ “%⁰/₀₂3⁵/₈N⁰¹/₃R⁰/₀₀5/8
—1R¹/₂H¹/₂1R¹/₃N¹/₃€1—3 “V¹/₂R¹/₂12/3€—3/8¹ ■⊙1/3R⁰¹/₃1/3³ 1/3—3/8 ‡R¹/₂P¹ ⊙5/83/83/8Rs¹/₂F¹/₂
R¹/₃2/31R¹/₃N¹/₃R¹/₂€5/8F¹/₂ R¹/₂N³/₈P¹

R¹/₃V¹/₂—1/8⊙⁵/₈F¹/₂ 17/8 —5/8W 3/8R¹/₂V¹/₂⊙F¹/₂ 1/3—3/8 2/3€1%⁰/₀₀1⊙€1/81/3%0 H¹/₂R¹/₃1/8V¹/₂N¹/₃F¹/₂€
1/31/8F¹/₂V¹/₂€F¹/₂€N¹/₃—F¹/₂ 1/81%⁰/₀₀1/32/31R¹/₃N¹/₃€1—F¹/₂ 1/3—3/8 R⁵/₈⊙€1—1/3%0 5/8N¹/₃H¹/₂—F¹/₂€1—
1/3R⁵/₈ F¹/₂N⁰⁵/₈ 17/8 N⁰⁵/₈ F¹/₂N¹/₃R¹/₃N⁵/₈⊙€1/8 €—€N¹/₃€1/3N¹/₃€⊕⁵/₈F¹/₂ V¹/₂—3/85/8R¹/₂N¹/₃%⁰/₁5/8— 2/3Rs
N⁰⁵/₈F¹/₂5/8 €—3/8V¹/₂F¹/₂N¹/₃R⁵/₈R¹/₂ H¹/₀₀1/3Rs⁵/₈R¹/₂ N¹/₃ N⁰¹/₃€—N¹/₃€— F¹/₂N¹/₃2/3€%⁰/₀₀€N¹/₃Rs €—
N⁰⁵/₈ N⁰¹/₃R⁰/₅N¹/₃R⁵/₈N¹/₃ ○F¹/₂ €—F¹/₂N¹/₃—1/85/8€ €— TMV¹/₂—5/8 1/2⊙⊙⊙ —15/8⊙R¹/₂—⊙⁵/₈R¹/₂
‡—⊙⁵/₈%⁰/₀₀⊙⁵/₈€N⁰ H¹/₂1/3R¹/₂N¹/₃—5/8R⁵/₈3/8 W€N¹/₃⊙ —1%⁰/₀₀⊕⁵/₈P¹ —1/3R⁵/₈¥1/3— ‡F¹/₂N¹/₃—€1/3—
2/3%⁰/₀₀11/8%⁰/₁ 1/8⊙1/3€— ⊙⁵/₈1/3%⁰/₀₀N⁰¹/₃1/3R⁵/₈ 7/8€R⁰¹/₃¥N¹/₃ 1/8R⁵/₈1/3N⁵/₈ 1/3 ‡€1/32/35/8N⁵/₈F¹/₂
—1/3R⁵/₈ “3/8N⁰€—€F¹/₂N¹/₃R¹/₃N¹/₃€1— ⊙5/8N¹/₃W¹/₂R⁰/₅P¹

ff⁰⁵/₈ 3/8€⊙€N¹/₃%⁰/₁ N⁰¹/₃5/8 €F¹/₂ 1/3€N⁰⁵/₈3/8 1/3N¹/₃ F¹/₂N¹/₃R⁵/₈1/3N⁰/₀₀€—€—⊙
N¹/₃R⁵/₈1/3N⁰⁵/₈—N¹/₃ F¹/₂N¹/₃R¹/₃N⁵/₈⊙€5/8F¹/₂ 7/81R¹/₂ H¹/₂1/3N¹/₃€5/8—N¹/₃F¹/₂ W€N¹/₃⊙ N¹/₃RsH¹/₂5/8 1/2
3/8€1/32/35/8N⁵/₈F¹/₂P¹ ff⁰⁵/₈ H¹/₀₀1/3N¹/₃7/81R⁰¹/₃ W€%⁰/₀₀%⁰/₀₀ 5/8—1/32/3%⁰/₀₀5/8 H¹/₂1/3N¹/₃€5/8—N¹/₃F¹/₂ N¹/₃
1/81N⁰¹/₃N⁰¹/₃V¹/₂—€1/81/3N⁵/₈ W€N¹/₃⊙ ⊙5/81/3%⁰/₀₀N⁰¹/₃1/3R⁵/₈ H¹/₂R¹/₂⊕⁵/₈€3/85/8R¹/₂F¹/₂ V¹/₂—3/85/8R¹/₂F¹/₂N¹/₃—3/8
N⁰⁵/₈€R¹/₂ €—F¹/₂V¹/₂R¹/₃—1/85/8€ 1/81¥1R³/₈€—1/3N⁵/₈ W€N¹/₃⊙ F¹/₂H¹/₂5/81/8€1/3%⁰/₀₀€F¹/₂N¹/₃F¹/₂ 1/3—3/8
1/31/81/85/8F¹/₂F¹/₂ 1/31/81/8V¹/₂R¹/₃N⁵/₈ R⁵/₈1/81R³/₈F¹/₂P¹

$\square \in \mathbb{L}_F^{5/8} \in - \frac{3}{8} \frac{5}{8} N^{21/3-3/8} \frac{7}{8} \frac{1}{8} \mathbb{C}_R - \frac{5}{8} \mathbb{W} \frac{3}{8} \mathbb{C}_R \mathbb{V}_T \ominus \mathbb{L}_F \frac{1}{3} \mathbb{N}_L \frac{1}{3} \%_{00} \mathbb{W} \frac{1}{8} \mathbb{L}_F \mathbb{N}_L \frac{1}{3} - \frac{3}{8}$
 $\frac{5}{8} - \mathbb{N}_L \mathbb{C}_R \mathbb{R}_S \frac{17}{8} \frac{3}{8} \frac{1}{8} N^{25/8} \mathbb{L}_F \mathbb{N}_L \in \frac{1}{8} \frac{1}{3} - \frac{3}{8} \%_{00} \frac{12}{3} \frac{1}{3} \%_{00} \frac{1}{8} \frac{1}{8} N^{21/3} \frac{1}{3} - \in \frac{5}{8} \mathbb{L}_F \in - \mathbb{N}_L \ominus \frac{5}{8} \text{ “ } \mathbb{L}_F$
 $N^{21/3} \mathbb{C}_R \mathbb{C}_u \frac{5}{8} \mathbb{N}_L \ominus \frac{1}{3} \oplus \frac{5}{8} \%_{00} \frac{5}{8} \frac{3}{8} \mathbb{N}_L \in - - \frac{1}{3} \oplus \frac{1}{3} \mathbb{N}_L \in \oplus \frac{5}{8} \mathbb{H}_T \mathbb{C}_R \frac{13}{8} \mathbb{V}_T \frac{1}{8} \mathbb{N}_L \frac{17}{8} \frac{7}{8} \frac{5}{8} \mathbb{C}_R \in - \ominus \mathbb{L}_F \mathbb{W} \in \mathbb{N}_L \ominus$
 $- \frac{5}{8} \mathbb{W} \frac{1}{3} - \frac{3}{8} \frac{1}{3} \frac{3}{8} \oplus \frac{1}{3} - \frac{1}{8} \frac{5}{8} \frac{3}{8} \mathbb{N}_L \frac{5}{8} \frac{1}{8} \ominus - \in \mathbb{F}_F \mathbb{V}_T \frac{5}{8} \mathbb{L}_F \mathbb{P}_t \text{ “ } - \mathbb{R}_S \mathbb{L}_F \mathbb{V}_T \frac{2}{3} \mathbb{L}_F \mathbb{N}_L \frac{1}{3} - \frac{1}{8} \frac{5}{8} \frac{1}{8} \mathbb{C}_R$
 $\frac{1}{8} \frac{1}{8} N^{22/3} \in - \frac{1}{3} \mathbb{N}_L \in \frac{1}{3} - \frac{17}{8} \mathbb{L}_F \mathbb{V}_T \frac{2}{3} \mathbb{L}_F \mathbb{N}_L \frac{1}{3} - \frac{1}{8} \frac{5}{8} \mathbb{L}_F \mathbb{V}_T \mathbb{L}_F \frac{5}{8} \frac{3}{8} \in - \frac{1}{3} \frac{7}{8} \in - \in \mathbb{L}_F \ominus \frac{5}{8} \frac{3}{8}$
 $\mathbb{H}_T \ominus \frac{1}{3} \mathbb{C}_R N^{21/3} \frac{1}{8} \frac{5}{8} \mathbb{V}_T \mathbb{N}_L \in \frac{1}{8} \frac{1}{3} \%_{00} \mathbb{H}_T \mathbb{C}_R \frac{13}{8} \mathbb{V}_T \frac{1}{8} \mathbb{N}_L \text{ ; } \bigcirc \blacksquare \text{ ; } \in \mathbb{L}_F \%_{00} - \mathbb{W} - \frac{1}{3} \mathbb{L}_F \frac{1}{3} \frac{1}{8} \mathbb{N}_L \in \oplus \frac{5}{8}$
 $\mathbb{H}_T \ominus \frac{1}{3} \mathbb{C}_R N^{21/3} \frac{1}{8} \frac{5}{8} \mathbb{V}_T \mathbb{N}_L \in \frac{1}{8} \frac{1}{3} \%_{00} \in - \ominus \mathbb{C}_R \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - \mathbb{N}_L \mathbb{L}_F \text{ ; “ } \mathbb{L}_F \mathbb{P}_t$

$\text{ “ } \frac{7}{8} \in - \in \mathbb{L}_F \ominus \frac{5}{8} \frac{3}{8} \frac{3}{8} \frac{1}{8} \mathbb{L}_F \frac{5}{8} \frac{17}{8} \frac{1}{3} - \mathbb{R}_S \frac{3}{8} \mathbb{C}_R \mathbb{V}_T \ominus \in \mathbb{L}_F \frac{1}{3} \frac{1}{8} \frac{1}{8} N^{22/3} \in - \frac{1}{3} \mathbb{N}_L \in \frac{1}{3} - \frac{17}{8}$
 $\frac{1}{3} \frac{1}{8} \mathbb{N}_L \in \oplus \frac{5}{8} \mathbb{H}_T \ominus \frac{1}{3} \mathbb{C}_R N^{21/3} \frac{1}{8} \frac{5}{8} \mathbb{V}_T \mathbb{N}_L \in \frac{1}{8} \frac{1}{3} \%_{00} \in - \ominus \mathbb{C}_R \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - \mathbb{N}_L \mathbb{L}_F \frac{1}{3} - \frac{3}{8}$
 $\frac{5}{8} \mathbb{N}_L \frac{1}{8} \in \mathbb{H}_T \in \frac{5}{8} - \mathbb{N}_L \mathbb{L}_F \mathbb{P}_t \text{ “ } - \frac{5}{8} \mathbb{N}_L \frac{1}{8} \in \mathbb{H}_T \in \frac{5}{8} - \mathbb{N}_L \in \mathbb{L}_F \frac{1}{3} - \in - \frac{1}{3} \frac{1}{8} \mathbb{N}_L \in \oplus \frac{5}{8} \mathbb{L}_F \mathbb{V}_T \frac{2}{3} \mathbb{L}_F \mathbb{N}_L \frac{1}{3} - \frac{1}{8} \frac{5}{8}$
 $\in - \frac{1}{3} \frac{3}{8} \mathbb{C}_R \mathbb{V}_T \ominus \frac{3}{8} \frac{1}{8} \mathbb{L}_F \frac{5}{8} \mathbb{P}_t$

$\text{ ; } \in \ominus \mathbb{W} \mathbb{H}_T \mathbb{N}_L \frac{5}{8} - \frac{1}{8} \mathbb{R}_S \frac{1}{3} \frac{1}{8} \mathbb{N}_L \in \oplus \frac{5}{8} \mathbb{H}_T \ominus \frac{1}{3} \mathbb{C}_R N^{21/3} \frac{1}{8} \frac{5}{8} \mathbb{V}_T \mathbb{N}_L \in \frac{1}{8} \frac{1}{3} \%_{00} \in - \ominus \mathbb{C}_R \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - \mathbb{N}_L \mathbb{L}_F$
 $\text{ ; } \text{ “ } \mathbb{L}_F \text{ ; } \frac{1}{3} - \frac{3}{8} \frac{1}{3} - \mathbb{N}_L \in \frac{2}{3} \frac{13}{8} \mathbb{R}_S \mathbb{V}_T \frac{3}{8} \mathbb{C}_R \mathbb{V}_T \ominus \frac{1}{8} \frac{1}{3} - \%_{00} \mathbb{V}_T \ominus \frac{1}{3} \mathbb{N}_L \frac{5}{8} \mathbb{L}_F \frac{1}{3} \mathbb{C}_R \frac{5}{8} \mathbb{C}_R \frac{5}{8} \frac{1}{8} \frac{5}{8} - \mathbb{N}_L$
 $\in - - \frac{1}{3} \oplus \frac{1}{3} \mathbb{N}_L \in \frac{1}{3} - \mathbb{L}_F \in - \mathbb{N}_L \ominus \frac{5}{8} N^{21/3} \mathbb{C}_R \mathbb{C}_u \frac{5}{8} \mathbb{N}_L \frac{1}{3} - \frac{3}{8} \mathbb{C}_R \frac{5}{8} \mathbb{F}_F \mathbb{V}_T \in \mathbb{C}_R \frac{5}{8} \frac{1}{3} \mathbb{L}_F \mathbb{H}_T \frac{5}{8} \frac{1}{8} \in \frac{1}{3} \%_{00}$
 $N^{21/3} - \mathbb{V}_T \frac{7}{8} \frac{1}{3} \frac{1}{8} \mathbb{N}_L \mathbb{V}_T \mathbb{C}_R \in - \ominus \mathbb{L}_F \frac{5}{8} \mathbb{N}_L \mathbb{V}_T \mathbb{H}_T \mathbb{P}_t \bullet \frac{1}{8} \mathbb{L}_F \mathbb{N}_L \frac{17}{8} \mathbb{N}_L \ominus \frac{5}{8} \mathbb{L}_F \frac{5}{8} \frac{3}{8} \mathbb{C}_R \mathbb{V}_T \ominus \mathbb{L}_F \frac{1}{3} \mathbb{C}_R \frac{5}{8} \mathbb{V}_T \mathbb{L}_F \frac{5}{8} \frac{3}{8}$
 $\in - \frac{1}{3} - \frac{1}{8} \%_{00} \frac{1}{8} \mathbb{R}_S \mathbb{P}_t$

$\text{ “ } \%_{00} \frac{1}{3} \mathbb{C}_R \ominus \frac{5}{8} - \mathbb{V}_T N^{22/3} \frac{5}{8} \mathbb{C}_R \frac{17}{8} \mathbb{H}_T \frac{1}{3} \mathbb{N}_L \frac{5}{8} - \mathbb{N}_L \mathbb{L}_F \frac{7}{8} \frac{1}{8} \mathbb{C}_R \mathbb{L}_F N^{21/3} \%_{00} \%_{00} N^{21/3} \%_{00} \frac{5}{8} \frac{1}{8} \mathbb{V}_T \%_{00} \frac{5}{8}$
 $\text{ “ } \mathbb{L}_F \frac{1}{3} \mathbb{C}_R \frac{5}{8} \frac{5}{8} \mathbb{N}_L \frac{5}{8} \frac{1}{8} \frac{5}{8} \frac{3}{8} \mathbb{N}_L \frac{1}{8} \frac{5}{8} \mathbb{H}_T \in \mathbb{C}_R \frac{5}{8} \in - \mathbb{N}_L \ominus \frac{5}{8} - \frac{5}{8} \mathbb{N}_L \frac{7}{8} \frac{5}{8} \mathbb{W} \mathbb{R}_S \frac{5}{8} \frac{1}{3} \mathbb{C}_R \mathbb{L}_F \mathbb{L}_F$
 $\mathbb{W} \in \mathbb{N}_L \ominus N^{21/3} - \mathbb{R}_S \frac{3}{8} \mathbb{C}_R \mathbb{V}_T \ominus \mathbb{L}_F \%_{00} \mathbb{L}_F \in - \ominus \mathbb{H}_T \frac{1}{3} \mathbb{N}_L \frac{5}{8} - \mathbb{N}_L \mathbb{H}_T \mathbb{C}_R \mathbb{N}_L \frac{5}{8} \frac{1}{8} \mathbb{N}_L \in \frac{1}{3} - \in - \frac{1}{2} \mathbb{R}_S \mathbb{P}_t$

$\text{ ff } \ominus \in \mathbb{L}_F \in \mathbb{L}_F \frac{5}{8} \mathbb{L}_F \mathbb{N}_L \in N^{21/3} \mathbb{N}_L \frac{5}{8} \mathbb{L}_F \mathbb{N}_L \frac{1}{3} \mathbb{V}_T - \%_{00} \frac{11}{8} \%_{00} \frac{1}{3} \mathbb{L}_F \in \ominus - \in \frac{7}{8} \in \frac{1}{8} \frac{1}{3} - \mathbb{N}_L$
 $N^{21/3} \mathbb{C}_R \mathbb{C}_u \frac{5}{8} \mathbb{N}_L \frac{1}{8} \mathbb{H}_T \frac{1}{8} \mathbb{C}_R \mathbb{N}_L \mathbb{V}_T - \in \mathbb{N}_L \mathbb{R}_S \frac{7}{8} \frac{1}{8} \mathbb{C}_R \ominus \frac{5}{8} - \frac{5}{8} \mathbb{C}_R \in \frac{1}{8} \frac{3}{8} \mathbb{C}_R \mathbb{V}_T \ominus N^{21/3} - \mathbb{V}_T \frac{7}{8} \frac{1}{3} \frac{1}{8} \mathbb{N}_L \mathbb{V}_T \mathbb{C}_R \frac{5}{8} \mathbb{C}_R \mathbb{L}_F \mathbb{L}_F$
 $\mathbb{C}_R \frac{5}{8} \mathbb{L}_F \mathbb{V}_T \%_{00} \mathbb{N}_L \in - \ominus \in - \frac{1}{3} \mathbb{V}_T \ominus N^{25/8} - \mathbb{N}_L \frac{5}{8} \frac{3}{8} \frac{3}{8} \frac{5}{8} N^{21/3} - \frac{3}{8} \frac{7}{8} \frac{1}{8} \mathbb{C}_R \text{ “ } \mathbb{L}_F \mathbb{P}_t$

$\mathbb{R} \frac{1}{3} \mathbb{C}_R \ominus \frac{5}{8} \mathbb{H}_T \ominus \frac{1}{3} \mathbb{C}_R N^{21/3} \frac{1}{8} \frac{5}{8} \mathbb{V}_T \mathbb{N}_L \in \frac{1}{8} \frac{1}{3} \%_{00} \frac{1}{8} \frac{1}{8} N^{21/3} \frac{1}{3} - \in \frac{5}{8} \mathbb{L}_F \frac{1}{3} \mathbb{C}_R \frac{5}{8} \mathbb{L}_F \frac{1}{8} \frac{1}{3} \%_{00} \in - \ominus$
 $\frac{3}{8} \frac{1}{8} \mathbb{W} - \mathbb{N}_L \ominus \frac{5}{8} \in \mathbb{C}_R \mathbb{L}_F N^{21/3} \%_{00} \%_{00} N^{21/3} \%_{00} \frac{5}{8} \frac{1}{8} \mathbb{V}_T \%_{00} \frac{5}{8} N^{21/3} - \mathbb{V}_T \frac{7}{8} \frac{1}{3} \frac{1}{8} \mathbb{N}_L \mathbb{V}_T \mathbb{C}_R \in - \ominus$
 $\frac{7}{8} \frac{1}{3} \frac{1}{8} \in \%_{00} \in \mathbb{N}_L \in \frac{5}{8} \mathbb{L}_F \mathbb{N}_L \frac{1}{8} \frac{7}{8} \frac{1}{8} \mathbb{V}_T \mathbb{L}_F \frac{1}{3} - \frac{2}{3} \in \%_{00} \frac{1}{8} \in \frac{1}{8} \frac{3}{8} \mathbb{C}_R \mathbb{V}_T \ominus \mathbb{L}_F \mathbb{N}_L \ominus \frac{5}{8} \mathbb{C}_R \frac{5}{8} \frac{2}{3} \mathbb{R}_S$
 $\mathbb{H}_T \mathbb{C}_R \frac{5}{8} \mathbb{L}_F \frac{5}{8} - \mathbb{N}_L \in - \ominus \ominus \mathbb{C}_R \frac{5}{8} \frac{1}{3} \mathbb{N}_L \frac{5}{8} \mathbb{C}_R \frac{1}{8} \mathbb{H}_T \frac{1}{8} \mathbb{C}_R \mathbb{N}_L \mathbb{V}_T - \in \mathbb{N}_L \in \frac{5}{8} \mathbb{L}_F \frac{7}{8} \frac{1}{8} \mathbb{C}_R \frac{1}{8} - \mathbb{N}_L \mathbb{C}_R \frac{1}{3} \frac{1}{8} \mathbb{N}_L$
 $N^{21/3} - \mathbb{V}_T \frac{7}{8} \frac{1}{3} \frac{1}{8} \mathbb{N}_L \mathbb{V}_T \mathbb{C}_R \in - \ominus \frac{1}{8} \frac{1}{8} N^{21/3} \frac{1}{3} - \in \frac{5}{8} \mathbb{L}_F \mathbb{L}_F \mathbb{H}_T \frac{1}{3} \mathbb{C}_R \mathbb{N}_L \in \frac{1}{8} \mathbb{V}_T \%_{00} \frac{1}{3} \mathbb{C}_R \%_{00} \mathbb{R}_S \in - \text{ “ } \mathbb{L}_F \in \frac{1}{3} \mathbb{P}_t$

“ %u5/8Rs N_LR^{5/8-3/8} 17/8 1/81000001/32/31_R1/3N_L€1-_LF 1/3-3/8 1/31/8_FV_T€_LF€N_L€1-_LF 17/8
_R5/8%001/3N_L5/83/8 1/81N⁰H_T1/3-€5/8_LF N_L1 €-1/8_R5/81/3_LF5/8 5/810_R1/3H_T0€1/8 H_T_R5/8_LF5/8-1/85/8
01/3_LF 2/35/85/8- 12/3_LF5/8_R5/83/8 €- N_L05/8 %001/3_LFN_L 7/85/8W Rs5/81/3_R_LF_Pt 01_R
€-_LFN_L1/3-1/85/8€ €- TMV_T000Rs 1/2⁰⁰0€ -V_T- ■01/3_RN⁰1/31/85/8V_TN_L€1/81/3%00
‡-3/8V_T_LFN_LR€5/8_LF R_N3/8_Pt 5/8-N_L5/8_R5/83/8 €-N_L1 1/3 %001-0_LN_L5/8_RN⁰
N⁰1/3-V_T7/81/31/8N_LV_TR€-0 1/30_R5/85/8N⁰5/8-N_L W€N_L0 -1/3N⁰_LFV_T-0 -€1R₁0€1/8_LF 7/81_R N_L05/8
N⁰1/3-V_T7/81/31/8N_LV_TR5/8 17/8 ‡%00V_TN⁰Rs1/3_Pt

ff05/8 000012/31/3000 1/31/8N_L€05/8 H_T01/3_RN⁰1/31/85/8V_TN_L€1/81/3%00 €-0_R5/83/8€5/8-N_L_LF
N⁰1/3_RC_u5/8N_L 01/3_LF 2/35/85/8- 2/3_R11/33/8000Rs _LF5/80N⁰5/8-N_L5/83/8 2/31/3_LF5/83/8 1-
N⁰1/3-V_T7/81/31/8N_LV_TR5/8_R€ “■‡_LF€ 3/8_RV_T0€ N_L05/8_R1/3H_T5/8V_TN_L€1/8€ 1/3-3/8 _R5/80€1-_Pt ‡-
N_L5/8_RN⁰_LF 17/8 N⁰1/3-V_T7/81/31/8N_LV_TR5/8_R€ N_L05/8 000012/31/3000 N⁰1/3_RC_u5/8N_L 01/3_LF 2/35/85/8-
1/80001/3_LF€€7/8€5/83/8 €-N_L1 €-¥01V_T_LF5/8 “■‡ N⁰1/3-V_T7/81/31/8N_LV_TR€-0 1/3-3/8 “■‡
1/81-N_L_R1/31/8N_L N⁰1/3-V_T7/81/31/8N_LV_TR€-0_Pt

ff05/8 €-¥01V_T_LF5/8 “■‡ N⁰1/3-V_T7/81/31/8N_LV_TR€-0 _LF5/80N⁰5/8-N_L 1/31/81/81V_T-N_L5/83/8
7/81_R 1/3 %u5/8Rs _LF01/3_R5/8 17/8 N_L05/8 000012/31/3000 N⁰1/3_RC_u5/8N_L€ €- N_L5/8_RN⁰_LF 17/8
_R5/805/8-V_T5/8€ €- 1/2⁰⁰0_Ptff05/8 “■‡ 1/81-N_L_R1/31/8N_L N⁰1/3-V_T7/81/31/8N_LV_TR€-0 _LF5/80N⁰5/8-N_L
€_LF 5/8_LFN_L€N⁰1/3N_L5/83/8 N_L1 5/8N⁰H_T1/3-3/8 1/3N_L 1/3 _LF€0-€7/8€1/81/3-N_L 0_R1W_N0 _R1/3N_L5/8
3/8V_TR€-0 N_L05/8 7/81_R5/81/81/3_LFN_L H_T5/8_R€13/8_Pt

-1-_LF5/8_FV_T5/8-N_L000Rs€ N_L05/8 _LF5/80N⁰5/8-N_L €_LF 5/8_LFN_L€N⁰1/3N_L5/83/8 N_L1 01/3€-
_LF€0-€7/8€1/81/3-N_L N⁰1/3_RC_u5/8N_L _LF01/3_R5/8 2/3Rs N_L05/8 5/8-3/8 17/8 1/2⁰¹2⁰_Pt

‡- N_L5/8_RN⁰_LF 17/8 _R5/80€1-€ N_L05/8 000012/31/3000 1/31/8N_L€05/8
H_T01/3_RN⁰1/31/85/8V_TN_L€1/81/3%00 €-0_R5/83/8€5/8-N_L_LF N⁰1/3_RC_u5/8N_L 01/3_LF 2/35/85/8-
_LF5/80N⁰5/8-N_L5/83/8 €-N_L1 01_RN_L0 “N⁰5/8_R€1/81/3€ ,V_T_R1H_T5/8€ “_LF€1/3 ■1/31/8€7/8€1/8€
R₁3N_L€- “N⁰5/8_R€1/81/3€ 1/3-3/8 ●€3/83/80005/8 ,1/3_LFN_L ¶ “7/8_R€1/81/3_Pt 01_RN_L0
“N⁰5/8_R€1/81/3 3/81N⁰€-1/3N_L5/83/8 N_L05/8 000012/31/3000 N⁰1/3_RC_u5/8N_L 1/3-3/8 €_LF
H_T_R105/81/8N_L5/83/8 N_L1 %001_LF5/8 N⁰1/3_RC_u5/8N_L _LF01/3_R5/8 2/3Rs N_L05/8 5/8-3/8 17/8 1/2⁰¹2⁰_Pt

ff^{05/8} N^{01/3} C_R u^{5/8} N_L € - o¹ C_R N_L © “N^{05/8} C_R € 1/8 1/3 € L_F H_T C_R € N^{01/3} C_R € %00 R_S 3/8 C_R € ⊕^{5/8} - 2/3 R_S 1/3 C_R 1/3 H_T € 3/8 € - 1/8 C_R 5/8 1/3 L_F 5/8 € - N_L ^{05/8} ⊗^{5/8} C_R € 1/3 N_L C_R € 1/8 H_T 1 H_T V_T %00 1/3 N_L € 1 - £ ⊙ € ⊙ ⊙ 1/3 3/8 1 H_T N_L € 1 - 17/8 - 5/8 W 3/8 C_R V_T ⊙ L_F £ 1/3 - 3/8 C_R € L_F 5/8 € - ⊙ C_R 1 V_T H_T 3/8 5/8 - N_L 1/3 %00 H_T C_R 1/3 1/8 N_L € 1/8 5/8 L_F € - N_L ^{05/8} ffi P_T - P_T P_T ff^{05/8} N^{01/3} C_R u^{5/8} N_L € - “L_F € 1/3 ■ 1/3 1/8 € 7/8 € 1/8 € L_F H_T C_R 1 %0 5/8 1/8 N_L 5/8 3/8 N_L 1 5/8 N^{01/3} H_T 1/3 - 3/8 1/3 N_L 1/3 C_R 1/3 H_T € 3/8 H_T 1/3 1/8 5/8 3/8 V_T C_R € - ⊙ N_L ^{05/8} 7/8 1 C_R 5/8 1/8 1/3 L_F N_L H_T 5/8 C_R € 13/8 P_T ‡ - “L_F € 1/3 ■ 1/3 1/8 € 7/8 € 1/8 £ TM 1/3 H_T 1/3 - 3/8 1 N^{01/3} € - 1/3 N_L 5/8 3/8 N_L ^{05/8} 1/3 1/8 N_L € ⊕^{5/8} H_T ⊙ 1/3 C_R N^{01/3} 1/8 5/8 V_T N_L € 1/8 1/3 %00 € - ⊙ C_R 5/8 3/8 € 5/8 - N_L L_F N^{01/3} C_R u^{5/8} N_L £ W⁰ € %00 5/8 N_L ^{05/8} N^{01/3} C_R u^{5/8} N_L € - ⊙ € - 1/3 € L_F 5/8 L_F N_L € N^{01/3} N_L 5/8 3/8 N_L 1 5/8 N^{01/3} H_T 1/3 - 3/8 1/3 N_L 1/3 H_T C_R 1 N^{01/3} € - 5/8 - N_L - “□ □ 3/8 V_T C_R € - ⊙ N_L ^{05/8} 7/8 1 C_R 5/8 1/8 1/3 L_F N_L H_T 5/8 C_R € 13/8 P_T ● 1/3 %1 C_R H_T %00 1/3 R_S 5/8 C_R L_F 1 H_T 5/8 C_R 1/3 N_L € - ⊙ € - ⊙ %00 12/3 1/3 %00 1/3 1/8 N_L € ⊕^{5/8} H_T ⊙ 1/3 C_R N^{01/3} 1/8 5/8 V_T N_L € 1/8 1/3 %00 € - ⊙ C_R 5/8 3/8 € 5/8 - N_L L_F N^{01/3} C_R u^{5/8} N_L € - 1/8 %00 V_T 3/8 5/8 ff^{5/8} ⊕^{1/3} ■ ⊙ 1/3 C_R N^{01/3} 1/8 5/8 V_T N_L € 1/8 1/3 %00 ‡ - 3/8 V_T L_F N_L C_R € 5/8 L_F R_N 3/8 P_T £ - V_T - ■ ⊙ 1/3 C_R N^{01/3} 1/8 5/8 V_T N_L € 1/8 1/3 %00 ‡ - 3/8 V_T L_F N_L C_R € 5/8 L_F R_N 3/8 P_T £ “V_T C_R 12/3 € - 3/8 1 ■ ⊙ 1/3 C_R N^{01/3} £ ■ 7/8 € MD 5/8 C_R ‡ - 1/8 P_T £ - 15/8 ⊙ C_R € - ⊙ 5/8 C_R ‡ - ⊙ 5/8 %00 ⊙ 5/8 € N^{01/3} ‡ - N_L 5/8 C_R - 1/3 N_L € 1 - 1/3 %00 □ N^{02/3} ‡ P_T £ ● 5/8 C_R 1/8 %1 ¶ - 1 P_T £ ‡ - 1/8 P_T £ o¹ ⊕^{1/3} C_R N_L € L_F “□ £ O P_T ‡ 17/8 7/8 N^{01/3} - - ¥ R_N 1/3 □ 11/8 ⊙ 5/8 R_N 3/8 £ 1/3 - 3/8 - 1/3 R_S 5/8 C_R “□ P_T P_T

ff^{05/8} ⊙ %00 12/3 1/3 %00 1/3 1/8 N_L € ⊕^{5/8} H_T ⊙ 1/3 C_R N^{01/3} 1/8 5/8 V_T N_L € 1/8 1/3 %00 € - ⊙ C_R 5/8 3/8 € 5/8 - N_L N^{01/3} C_R u^{5/8} N_L € L_F 5/8 L_F N_L € N^{01/3} N_L 5/8 3/8 N_L 1 C_R 5/8 1/3 1/8 ⊙ ffi - 1/2 ⊙² P_T 1/2 2/3 € %00 %00 € 1 - 2/3 R_S 1/2 1/2 ⊙ 7/8 C_R 1 N^{01/3} ffi - 1/2 P_T 1/2 2/3 € %00 %00 € 1 - € - 1/2 ⊙ ⊙ £ 1/3 N_L 1/3 - “□ □ 17/8 n P_T ⊙^{*} 3/8 V_T C_R € - ⊙ N_L ^{05/8} 7/8 1 C_R 5/8 1/8 1/3 L_F N_L H_T 5/8 C_R € 13/8 P_T

ff^{05/8} € - 1/8 C_R 5/8 1/3 L_F € - ⊙ € - 1/8 € 3/8 5/8 - 1/8 5/8 17/8 1/8 ⊙ C_R 1 - € 1/8 3/8 € L_F 5/8 1/3 L_F 5/8 L_F ⊙ C_R 1 W € - ⊙ € N^{01/3} H_T 1 C_R N_L 1/3 - 1/8 5/8 17/8 ⊙ 5/8 - 5/8 C_R € 1/8 L_F £ 1/3 - 3/8 N_L ^{05/8} € - 1/8 C_R 5/8 1/3 L_F € - ⊙ V_T H_T N_L 1/3 %0 5/8 17/8 2/3 € 1 H_T ⊙ 1/3 C_R N^{01/3} 1/8 5/8 V_T N_L € 1/8 1/3 %00 L_F 1/3 C_R 5/8 L_F 1 N^{05/8} 17/8 N_L ^{05/8} N^{01/3} %1 C_R 7/8 1/3 1/8 N_L 1 C_R L_F 3/8 C_R € ⊕^{5/8} € - ⊙ N_L ^{05/8} ⊙ C_R 1 W N_L ⊙ 17/8 N_L ^{05/8} ⊙ %00 12/3 1/3 %00 “■ ‡ L_F N^{01/3} C_R u^{5/8} N_L P_T ■ - N_L ^{05/8} 1 N_L ^{05/8} C_R ⊙ 1/3 - 3/8 £ N_L ^{05/8} V_T - 7/8 1/3 ⊕¹ C_R 1/3 2/3 %00 5/8 3/8 C_R V_T ⊙ H_T C_R € 1/8 5/8 1/8 1 - N_L C_R 10 %00 H_T 10 %00 € 1/8 € 5/8 L_F 1/3 1/8 C_R 1 L_F L_F ⊕^{1/3} C_R € 1 V_T L_F 1/8 1 V_T - N_L C_R € 5/8 L_F 1/3 - 3/8 N_L ^{05/8} € - 1/8 C_R 5/8 1/3 L_F € - ⊙ H_T 5/8 - 5/8 N_L C_R 1/3 N_L € 1 - 17/8 1/8 1 V_T - N_L 5/8 C_R 7/8 5/8 € N_L 3/8 C_R V_T ⊙ L_F 1/3 C_R 5/8 5/8 N^{01/3} H_T 5/8 1/8 N_L 5/8 3/8 N_L 1 C_R 5/8 L_F N_L C_R 1/3 € - N_L ^{05/8} ⊙ C_R 1 W N_L ⊙ 17/8 N_L ⊙ € L_F N^{01/3} C_R u^{5/8} N_L € - N_L ^{05/8} 1/8 1 N^{01/3} € - ⊙ R_S 5/8 1/3 C_R L_F P_T

$-\frac{1}{3}L^{\frac{5}{8}3/8} \quad 1- \quad N_L^{\otimes 5/8} \quad N_{LR}H^{\frac{5}{8}} \quad 17/8 \quad 3/8R^{\vee}T^{\otimes 5/8} \quad N_L^{\otimes 5/8} \quad \text{"}\ddagger\text{"} \quad N^{\frac{2}{3}}R^{\circ}u^{\frac{5}{8}}N_L \quad 1/81/3- \quad 2/35/8$
 $1/80001/3L^{\frac{5}{8}3/8} \in -N_L^1 \quad N_L^{\frac{5}{8}} \quad L^{\frac{5}{8}3/8} \otimes N^{\frac{5}{8}3/8} - N_L^{\frac{5}{8}} \quad H^{\frac{5}{8}}R^{\frac{5}{8}}L^{\frac{5}{8}}R^{\frac{5}{8}} \in H^{\frac{5}{8}}N_L^{\frac{5}{8}} \in 1- \quad 3/8R^{\vee}T^{\otimes 5/8} \quad 1/3-3/8$
 $1 \otimes 5/8R^{\vee}N_L^{\otimes 5/8} \frac{1}{8}1^{\vee}T-N_L^{\frac{5}{8}}R \quad \text{"}\ddagger\text{"} \quad 3/8R^{\vee}T^{\otimes 5/8}P_t \quad \ddagger- \quad 1/2^{\otimes 5/8} \quad N_L^{\otimes 5/8} \quad H^{\frac{5}{8}}R^{\frac{5}{8}}L^{\frac{5}{8}}R^{\frac{5}{8}} \in H^{\frac{5}{8}}N_L^{\frac{5}{8}} \in 1-$
 $3/8R^{\vee}T^{\otimes 5/8} \quad L^{\frac{5}{8}3/8} \otimes N^{\frac{5}{8}3/8} - N_L^{\frac{5}{8}} \quad \in L^{\frac{5}{8}} \quad 5/8N^{\frac{5}{8}}H^{\frac{5}{8}}1/8N_L^{\frac{5}{8}3/8} \quad N_L^1 \quad 1/31/81/81^{\vee}T-N_L \quad 7/81^{\vee}R \quad N_L^{\otimes 5/8} \quad 0001/3R^{\otimes 5/8}L^{\frac{5}{8}}N_L$
 $L^{\frac{5}{8}3/8}R^{\frac{5}{8}} \quad 17/8 \quad N_L^{\otimes 5/8} \quad \text{"}\ddagger\text{"} \quad N^{\frac{2}{3}}R^{\circ}u^{\frac{5}{8}}N_LP_t \quad \text{ff}^{\otimes 5/8} \quad 3/85/8N^{\frac{2}{3}}1/3-3/8 \quad 7/81^{\vee}R \quad 3/8R^{\vee}T^{\otimes 5/8}$
 $7/81/30000 \in - \otimes \quad V_T-3/85/8R \quad N_L^{\otimes 5/8} \quad 1/81/3N_L^{\frac{5}{8}} \otimes 1^{\vee}R^{\frac{5}{8}}R_s \quad \otimes 1/3L^{\frac{5}{8}} \quad \in -1/8R^{\frac{5}{8}}1/3L^{\frac{5}{8}3/8}$
 $L^{\frac{5}{8}3/8} \in - \in 7/8 \in 1/81/3-N_L^{\frac{5}{8}}R_s \quad \in - \quad R^{\frac{5}{8}}1/85/8-N_L \quad R_s^{\frac{5}{8}}1/3R^{\frac{5}{8}}L^{\frac{5}{8}} \quad 3/8V_T^{\frac{5}{8}} \quad N_L^1 \quad N_L^{\otimes 5/8} \quad R^{\frac{5}{8}} \in L^{\frac{5}{8}} \in - \otimes$
 $H^{\frac{5}{8}}R^{\frac{5}{8}} \otimes 1/30005/8-1/85/8 \quad 17/8 \quad N_L^1/3R^{\otimes 5/8}N_L \quad 3/8 \in L^{\frac{5}{8}}5/81/3L^{\frac{5}{8}3/8}P_t \quad \text{"}3/83/8 \in N_L^{\frac{5}{8}} \in 1-1/30000R_s \quad N_L^{\otimes 5/8}$
 $0001/3R^{\otimes 5/8}L^{\frac{5}{8}}N_L \quad L^{\frac{5}{8}3/8}R^{\frac{5}{8}} \quad 17/8 \quad N_L^{\otimes 5/8} \quad H^{\frac{5}{8}}R^{\frac{5}{8}}L^{\frac{5}{8}}R^{\frac{5}{8}} \in H^{\frac{5}{8}}N_L^{\frac{5}{8}} \in 1- \quad 3/8R^{\vee}T^{\otimes 5/8} \quad L^{\frac{5}{8}3/8} \otimes N^{\frac{5}{8}3/8} - N_L \quad 1/81/3-$
 $1/3000L^{\frac{5}{8}} \quad 2/35/8 \quad 1/3N_L^{\frac{5}{8}}R^{\frac{5}{8}} \in 2/3V_TN_L^{\frac{5}{8}3/8} \quad N_L^1 \quad N_L^{\otimes 5/8} \quad \in -1/8R^{\frac{5}{8}}1/3L^{\frac{5}{8}3/8} \quad 7/811/8V_TL^{\frac{5}{8}} \quad 17/8$
 $\in - -1 \otimes 1/3N_L^1R^{\frac{5}{8}} \quad 1/81N^{\frac{5}{8}}H^{\frac{5}{8}}1/3- \in 5/8L^{\frac{5}{8}} \quad 1- \quad N_L^{\otimes 5/8} \quad 3/85/8 \otimes 5/80001H^{\frac{5}{8}}N^{\frac{5}{8}}-N_L \quad 17/8 \quad L^{\frac{5}{8}}H^{\frac{5}{8}}1/8 \in 1/3000N_{LR}$
 $3/8R^{\vee}T^{\otimes 5/8} \quad 1/3-3/8 \quad 1/37/87/81^{\vee}R^{\frac{5}{8}}1/32/3 \in 000 \in N_{LR} \quad 17/8 \quad \otimes 5/81/3000N_L^{\otimes 5/8}1/3R^{\frac{5}{8}}P_t \quad \text{ff}^{\otimes 5/8}$
 $\in N^{\frac{5}{8}}H^{\frac{5}{8}}0005/8N^{\frac{5}{8}}-N_L^1/3N_L^{\frac{5}{8}} \in 1- \quad 17/8 \quad L^{\frac{5}{8}} \in - \in 7/8 \in 1/81/3-N_L \quad 7/85/83/85/8R^{\frac{5}{8}}1/300 \quad R^{\frac{5}{8}}7/81^{\vee}R^{\frac{5}{8}}L^{\frac{5}{8}} \quad N_L^1$
 $\in N^{\frac{5}{8}}H^{\frac{5}{8}}R^{\frac{5}{8}}1 \otimes 5/8 \quad N_L^{\otimes 5/8} \quad 1/37/87/81^{\vee}R^{\frac{5}{8}}1/32/3 \in 000 \in N_{LR} \quad 17/8 \quad \otimes 5/81/3000N_L^{\otimes 5/8}1/3R^{\frac{5}{8}} \in$
 $5/8L^{\frac{5}{8}}H^{\frac{5}{8}}1/8 \in 1/30000R_s \quad \in - \quad N_L^{\otimes 5/8} \quad \text{ff}^{\otimes 5/8} \quad \otimes 1/3L^{\frac{5}{8}} \quad 5/8N^{\frac{5}{8}}H^{\frac{5}{8}}1/3-3/85/83/8 \quad N_L^{\otimes 5/8} \quad 1/81-L^{\frac{5}{8}}V_TN^{\frac{5}{8}}H^{\frac{5}{8}}N_L^{\frac{5}{8}} \in 1-$
 $17/8 \quad 2/31N_L^{\otimes 5/8} \quad N_L^{\frac{5}{8}}R^{\frac{5}{8}}1/33/8 \in N_L^{\frac{5}{8}} \in 1-1/300 \quad 1/3-3/8 \quad L^{\frac{5}{8}}H^{\frac{5}{8}}1/8 \in 1/3000N_{LR} \quad 3/8R^{\vee}T^{\otimes 5/8}P_t \quad \text{"}000L^{\frac{5}{8}} \in$
 $\in -7/80001/3N_L^{\frac{5}{8}} \in 1- \quad \otimes 1/3L^{\frac{5}{8}} \quad H^{\frac{5}{8}}0001/3R_s^{\frac{5}{8}3/8} \quad 1/8 \quad \circ u^{\frac{5}{8}}R_s \quad R^{\frac{5}{8}}10005/8 \quad \in - \quad 5/8- \otimes 1/3-1/8 \in - \otimes$
 $R^{\frac{5}{8}} \otimes 5/8-V_T^{\frac{5}{8}} \quad 7/8R^{\frac{5}{8}}1N^{\frac{5}{8}} \quad N_L^{\otimes 5/8} \quad L^{\frac{5}{8}}1/30005/8L^{\frac{5}{8}} \quad 17/8 \quad H^{\frac{5}{8}}R^{\frac{5}{8}}L^{\frac{5}{8}}R^{\frac{5}{8}} \in H^{\frac{5}{8}}N_L^{\frac{5}{8}} \in 1- \quad 3/8R^{\vee}T^{\otimes 5/8} \in$
 $H^{\frac{5}{8}}1/3R^{\frac{5}{8}}N_L^{\frac{5}{8}} \in 1/8V_T0001/3R^{\frac{5}{8}}00R_s \quad L^{\frac{5}{8}}H^{\frac{5}{8}}1/8 \in 1/3000N_{LR} \quad 3/8R^{\vee}T^{\otimes 5/8}P_t \quad \text{"}00000 \quad N_L^{\otimes 5/8}L^{\frac{5}{8}} \quad 7/81/31/8N_L^1R^{\frac{5}{8}}L^{\frac{5}{8}}$
 $1/3R^{\frac{5}{8}} \quad 1/81000005/81/8N_L^{\frac{5}{8}} \in 5/800R_s \quad R^{\frac{5}{8}}L^{\frac{5}{8}}H^{\frac{5}{8}}1-L^{\frac{5}{8}} \in 2/30005/8 \quad 7/81^{\vee}R \quad N_L^{\otimes 5/8} \quad 0001/3R^{\otimes 5/8} \quad L^{\frac{5}{8}3/8}R^{\frac{5}{8}}$
 $17/8 \quad N_L^{\otimes 5/8} \quad L^{\frac{5}{8}3/8} \otimes N^{\frac{5}{8}3/8} - N_LP_t$

$\text{ff}^{\otimes 5/8} \quad 1/81/3H^{\frac{5}{8}}N_L^{\frac{5}{8}} \in \otimes 5/8 \quad \text{"}\ddagger\text{"} \quad N^{\frac{2}{3}}1/3-V_T7/81/31/8N_L^{\frac{5}{8}}V^{\frac{5}{8}}R^{\frac{5}{8}}R^{\frac{5}{8}}L^{\frac{5}{8}} \quad L^{\frac{5}{8}3/8} \otimes N^{\frac{5}{8}3/8} - N_L \quad \in L^{\frac{5}{8}}$
 $5/8N^{\frac{5}{8}}H^{\frac{5}{8}}1/8N_L^{\frac{5}{8}3/8} \quad N_L^1 \quad 1/31/81/81^{\vee}T-N_L \quad 7/81^{\vee}R \quad N_L^{\otimes 5/8} \quad 0001/3R^{\otimes 5/8}L^{\frac{5}{8}}N_L \quad L^{\frac{5}{8}3/8}R^{\frac{5}{8}} \quad 17/8 \quad N_L^{\otimes 5/8}$
 $\otimes 00012/31/3000 \quad \text{"}\ddagger\text{"} \quad N^{\frac{2}{3}}R^{\circ}u^{\frac{5}{8}}N_L \quad \in - \quad 1/2^{\otimes 5/8} \quad P_t-1/3L^{\frac{5}{8}3/8} \quad 1- \quad N_{LR}H^{\frac{5}{8}} \quad 17/8$
 $N^{\frac{2}{3}}1/3-V_T7/81/31/8N_L^{\frac{5}{8}}V^{\frac{5}{8}}R^{\frac{5}{8}}R^{\frac{5}{8}}L^{\frac{5}{8}} \quad N_L^{\otimes 5/8} \quad \text{"}\ddagger\text{"} \quad N^{\frac{2}{3}}R^{\circ}u^{\frac{5}{8}}N_L \quad 1/81/3- \quad 2/35/8 \quad 3/8 \in \otimes \in 3/85/83/8 \quad \in -N_L^1$
 $1/81/3H^{\frac{5}{8}}N_L^{\frac{5}{8}} \in \otimes 5/8 \quad \text{"}\ddagger\text{"} \quad N^{\frac{2}{3}}1/3-V_T7/81/31/8N_L^{\frac{5}{8}}V^{\frac{5}{8}}R^{\frac{5}{8}}R^{\frac{5}{8}}L^{\frac{5}{8}} \quad 1/3-3/8 \quad N^{\frac{2}{3}}R^{\circ}u^{\frac{5}{8}}1/3-N_L \quad \text{"}\ddagger\text{"}$
 $N^{\frac{2}{3}}1/3-V_T7/81/31/8N_L^{\frac{5}{8}}V^{\frac{5}{8}}R^{\frac{5}{8}}R^{\frac{5}{8}}L^{\frac{5}{8}}P_t \quad \ddagger- \quad 1/2^{\otimes 5/8} \quad N_L^{\otimes 5/8} \quad 1/81/3H^{\frac{5}{8}}N_L^{\frac{5}{8}} \in \otimes 5/8 \quad \text{"}\ddagger\text{"}$
 $N^{\frac{2}{3}}1/3-V_T7/81/31/8N_L^{\frac{5}{8}}V^{\frac{5}{8}}R^{\frac{5}{8}}R^{\frac{5}{8}}L^{\frac{5}{8}} \quad L^{\frac{5}{8}3/8} \otimes N^{\frac{5}{8}3/8} - N_L \quad \in L^{\frac{5}{8}} \quad 5/8N^{\frac{5}{8}}H^{\frac{5}{8}}1/8N_L^{\frac{5}{8}3/8} \quad N_L^1 \quad 1/31/81/81^{\vee}T-N_L \quad 7/81^{\vee}R$
 $N_L^{\otimes 5/8} \quad 0001/3R^{\otimes 5/8}L^{\frac{5}{8}}N_L \quad L^{\frac{5}{8}3/8}R^{\frac{5}{8}} \quad 17/8 \quad N_L^{\otimes 5/8} \quad \text{"}\ddagger\text{"} \quad N^{\frac{2}{3}}R^{\circ}u^{\frac{5}{8}}N_LP_t \quad \text{ff}^{\otimes 5/8} \quad 1/81/3- \quad 2/35/8$
 $1/3N_L^{\frac{5}{8}}R^{\frac{5}{8}} \in 2/3V_TN_L^{\frac{5}{8}3/8} \quad N_L^1 \quad N_L^{\otimes 5/8} \quad 7/81/31/8N_L \quad N_L^{\otimes 1/3}N_L \quad N^{\frac{2}{3}}L^{\frac{5}{8}}N_L \quad 2/3 \in \otimes$
 $H^{\frac{5}{8}}\otimes 1/3R^{\frac{5}{8}}N^{\frac{2}{3}}1/85/8V_TN_L^{\frac{5}{8}} \in 1/81/300 \quad 1/81N^{\frac{5}{8}}H^{\frac{5}{8}}1/3- \in 5/8L^{\frac{5}{8}} \quad H^{\frac{5}{8}}1L^{\frac{5}{8}}L^{\frac{5}{8}}L^{\frac{5}{8}} \quad N_L^{\otimes 5/8} \in R \quad \text{"}\ddagger\text{"}$
 $N^{\frac{2}{3}}1/3-V_T7/81/31/8N_L^{\frac{5}{8}}V^{\frac{5}{8}}R^{\frac{5}{8}} \in - \otimes \quad 7/81/31/8 \in 000 \in N_L^{\frac{5}{8}}L^{\frac{5}{8}} \quad 1/3-3/8 \quad 1/3R^{\frac{5}{8}} \quad \otimes 5/8R^{\frac{5}{8}}N_L^{\frac{5}{8}} \in 1/81/30000R_s$

$\in - N_{5/8} \otimes C_{R1/3} N_{5/8}^{3/8} \quad 1/3 \otimes C_{R1} L_{5/8} \quad N_{5/8} \quad H_{T1/3} C_{RN}^{1/3} 1/8 \otimes V_{TN} \in 1/8 \otimes 00 \quad L_{FT} H_{T} 00 R_s$
 $1/8 \otimes 1/3 \in - P_t \quad \bullet \quad C_{R5/8} 1 \otimes 5/8 C_{R5} \quad \in - -1 \otimes 1/3 N_{5/8} C_{R1} \quad 1/8 \otimes H_{T1/3} \in - 5/8 L_{5/8} \quad H_{TR} 5/8 \otimes 5/8 C_{R5} \quad \in - \forall \otimes 1 V_{TF} 5/8$
 $N_{5/8}^{1/3} \in - V_{T7/8} 1/3 \otimes N_{5/8} V_{TR} \in - \otimes \quad 17/8 \quad \in - -1 \otimes 1/3 N_{5/8} \in \otimes 5/8 \quad H_{TR} 13/8 V_{T1/8} N_{5/8} L_{5/8} \quad N_{5/8} \quad 1/3 \otimes 1/3 \in 000$
 $5/8 \otimes 1/8 - 1 N_{5/8} \in 1/8 \quad 2/3 \otimes 5/8 - 5/8 \otimes 7/8 \in N_{5/8} \quad 1/3 - 3/8 \quad H_{TR} 5/8 \otimes 5/8 - N_{5/8} \quad N_{5/8} 1/8 \otimes - 10/00 \otimes R_s \quad 000 \otimes 5/8 \otimes 1/3 \otimes 1/3 \otimes 5/8 P_t$

$ff \otimes 5/8 \quad N_{5/8}^{1/3} N_{5/8}^{1/3} 000 \in 1/3 - \quad 5/8 \otimes H_{TR} 5/8 \otimes L_{5/8} \in 1 - \quad L_{FR} L_{FN} 5/8 N_{5/8} L_{5/8} \otimes N_{5/8} - N_{5/8} \quad \in L_{5/8}$
 $5/8 \otimes H_{T5/8} 1/8 N_{5/8}^{3/8} \quad N_{5/8} \quad 1/3 \otimes 1/8 \otimes 1 V_{TN} - N_{5/8} \quad 7/8 \otimes C_{R1} \quad N_{5/8} \quad 000 \otimes 1/3 C_{R5/8} \otimes L_{FN} \quad L_{F1/3} C_{R5/8} \quad 17/8 \quad N_{5/8}$
 $2/3 \in 1 N_{5/8} 1/8 \otimes \quad \bullet \quad L_{5/8} \quad N_{5/8}^{1/3} C_{R5/8} \otimes 5/8 N_{5/8} \quad \in - \quad 1/2 \otimes \otimes P_t$

$\blacksquare - \quad N_{5/8} \quad 2/3 \otimes 1/3 L_{5/8} \in L_{5/8} \quad 17/8 \quad 5/8 \otimes H_{TR} 5/8 \otimes L_{5/8} \in 1 - \quad L_{FR} L_{FN} 5/8 N_{5/8} \quad 2/3 \in 1 N_{5/8} 1/8 \otimes \quad \bullet \quad L_{5/8}$
 $1/8 \otimes 1/3 - \quad 2/3 \otimes 5/8 \quad 1/8 \otimes 1/3 N_{5/8} \otimes 1 C_{R5/8} \in MD \otimes 5/8 \otimes 3/8 \quad \in - N_{5/8} \quad N_{5/8}^{1/3} N_{5/8}^{1/3} 000 \in 1/3 - \quad 5/8 \otimes H_{TR} 5/8 \otimes L_{5/8} \in 1 -$
 $L_{FR} L_{FN} 5/8 N_{5/8} L_{5/8} \quad N_{5/8} \in 1/8 C_{R12/3} \in 1/3 \otimes 00 \quad 5/8 \otimes H_{TR} 5/8 \otimes L_{5/8} \in 1 - \quad L_{FR} L_{FN} 5/8 N_{5/8} L_{5/8} \quad \dots 5/8 \otimes 1/3 L_{5/8}$
 $5/8 \otimes H_{TR} 5/8 \otimes L_{5/8} \in 1 - \quad L_{FR} L_{FN} 5/8 N_{5/8} L_{5/8} \quad \in - L_{5/8} 5/8 \otimes 1/8 N_{5/8} \quad 5/8 \otimes H_{TR} 5/8 \otimes L_{5/8} \in 1 - \quad L_{FR} L_{FN} 5/8 N_{5/8} L_{5/8} \quad 1/3 - 3/8$
 $1 N_{5/8} \otimes 5/8 C_{R1} \quad 5/8 \otimes H_{TR} 5/8 \otimes L_{5/8} \in 1 - \quad L_{FR} L_{FN} 5/8 N_{5/8} L_{5/8} P_t \quad ff \otimes 5/8 \quad 2/3 \in 1 N_{5/8} 1/8 \otimes \quad \bullet \quad L_{5/8} \quad N_{5/8}^{1/3} C_{R5/8} \otimes 5/8 N_{5/8}$
 $5/8 \otimes H_{TR} 5/8 \otimes L_{5/8} \in 1 - \quad L_{FR} L_{FN} 5/8 N_{5/8} \quad \in L_{5/8} \quad 3/8 \otimes 1 N_{5/8} \in - 1/3 N_{5/8}^{3/8} \quad 2/3 R_s \quad N_{5/8}^{1/3} N_{5/8}^{1/3} 000 \in 1/3 -$
 $5/8 \otimes H_{TR} 5/8 \otimes L_{5/8} \in 1 - \quad L_{FR} L_{FN} 5/8 N_{5/8} L_{5/8} \quad 1 W \in - \otimes \quad N_{5/8} \quad N_{5/8} \otimes 5/8 C_{R1} \quad 1/3 \otimes 2/3 \in 000 \in N_{5/8} R_s \quad N_{5/8} \quad 1/3 \otimes 1/8 \otimes \in 5/8 \otimes 5/8$
 $N_{5/8} \quad \otimes \in \otimes \otimes 5/8 L_{FN} \quad 000 \otimes 5/8 \otimes 5/8 \otimes 00 \quad 17/8 \quad H_{T1} L_{FN} \forall N_{5/8} C_{R1/3} - L_{5/8} 000 \otimes 1/3 N_{5/8} \in 1 - 1/3 \otimes 00$
 $N_{5/8}^{1/3} \in 7/8 \in 1/8 \otimes 1/3 N_{5/8} \in 1 - L_{5/8} \quad 1/3 - 3/8 \quad 5/8 \otimes 7/8 \in 1/8 \in 5/8 - N_{5/8} \quad H_{TR} 1 N_{5/8} \in - \quad 7/8 \otimes 100 \otimes 3/8 \in - \otimes \quad W \otimes \in 1/8 \otimes$
 $N_{5/8}^{1/3} \otimes 5/8 L_{5/8} \quad N_{5/8} \otimes 5/8 N_{5/8} \quad L_{FT} \in N_{5/8} 1/3 \otimes 2/3 \otimes 000 \otimes 5/8 \quad 7/8 \otimes C_{R1} \quad \otimes V_{TN}^{1/3} - \quad V_{TF} 5/8 P_t$

$\circ 1 C_{RN} \otimes \quad "N_{5/8} C_{R5/8} \in 1/8 \otimes 1/3 \quad \in L_{5/8} \quad 5/8 \otimes H_{T5/8} 1/8 N_{5/8}^{3/8} \quad N_{5/8} \quad 1/3 \otimes 1/8 \otimes 1 V_{TN} - N_{5/8} \quad 7/8 \otimes C_{R1} \quad N_{5/8}$
 $000 \otimes 1/3 C_{R5/8} \otimes L_{FN} \quad N_{5/8}^{1/3} C_{R5/8} \otimes 5/8 N_{5/8} \quad L_{5/8} \in MD \otimes 5/8 \quad 3/8 V_{TR} \in - \otimes \quad N_{5/8} \quad 7/8 \otimes C_{R5/8} 1/8 \otimes 1/3 L_{FN} \quad H_{T5/8} C_{R5/8} \in 13/8 P_t$

$\square 5/8 \otimes 1 \otimes C_{R1/3} H_{T1} \in 1/8 \otimes 1/3 \otimes 000 \otimes R_s \quad N_{5/8} \quad 1/3 \otimes 1/8 N_{5/8} \in \otimes 5/8 \quad H_{T1/3} C_{RN}^{1/3} 1/8 \otimes 5/8 V_{TN} \in 1/8 \otimes 1/3 \otimes 00$
 $\in - \otimes C_{R5/8} 3/8 \in 5/8 - N_{5/8} \quad N_{5/8}^{1/3} C_{R5/8} \otimes 5/8 N_{5/8} \quad \in L_{5/8} \quad L_{5/8} \otimes N_{5/8} - N_{5/8} 5/8 \otimes 3/8 \quad \in - N_{5/8} \quad \circ 1 C_{RN} \otimes \quad "N_{5/8} C_{R5/8} \in 1/8 \otimes 1/3 \otimes$
 $\forall V_{TR} H_{T5/8} \quad "L_{5/8} \in 1/3 \otimes \quad 1/3 - 3/8 \quad N_{5/8} \quad \otimes 5/8 L_{FN} \quad 17/8 \quad N_{5/8} \quad fi C_{R00} \otimes 3/8 \quad i \otimes fi \otimes P_t \quad \dagger - \quad 1/2 \otimes \otimes \quad \circ 1 C_{RN} \otimes$
 $"N_{5/8} C_{R5/8} \in 1/8 \otimes 1/3 \quad \in L_{5/8} \quad 5/8 \otimes H_{T5/8} 1/8 N_{5/8}^{3/8} \quad N_{5/8} \quad 3/8 \otimes 1 N_{5/8} \in - 1/3 N_{5/8} \quad N_{5/8} \quad N_{5/8}^{1/3} C_{R5/8} \otimes 5/8 N_{5/8}$
 $7/8 \otimes 100 \otimes 00 \otimes 1 W \otimes 5/8 \otimes 3/8 \quad 2/3 R_s \quad \forall V_{TR} H_{T5/8} P_t \quad ff \otimes 5/8 \quad N_{5/8}^{1/3} \otimes 1 C_{R1} \quad 7/8 \otimes 1/3 \otimes 1/8 N_{5/8} L_{5/8} \quad 3/8 C_{R5/8} \in \otimes \in - \otimes \quad N_{5/8}$
 $1 \otimes 5/8 C_{R1/3} \otimes 00 \otimes 00 \quad \otimes C_{R1} W \otimes N_{5/8} \quad 17/8 \quad N_{5/8} \quad \bullet \quad L_{5/8} \quad N_{5/8}^{1/3} C_{R5/8} \otimes 5/8 N_{5/8} \quad \in - \quad N_{5/8} \in L_{5/8} \quad C_{R5/8} \otimes \in 1 -$
 $\in - 1/8 \otimes 00 \otimes 3/8 \otimes 5/8 \quad N_{5/8} \quad \otimes C_{R1} W \in - \otimes \quad \in - 1/8 \in 3/8 \otimes 5/8 - 1/8 \otimes 5/8 \quad 17/8 \quad H_{TR} 5/8 \otimes 5/8 - N_{5/8} 1/3 \otimes 2/3 \otimes 000 \otimes 5/8 \quad 1/8 \otimes C_{R1} - \in 1/8$
 $3/8 \in L_{5/8} 1/3 \otimes L_{5/8} L_{5/8} \quad \in - 1/8 C_{R5/8} 1/3 \otimes L_{5/8} \in - \otimes \quad \otimes 1 \otimes 5/8 C_{R5/8} - N_{5/8} - N_{5/8} \quad 7/8 \otimes 1/8 V_{TF} \quad 1 - \quad \otimes 5/8 - 5/8 C_{R5/8} \in 1/8$
 $3/8 C_{R5/8} V_{TF} \quad C_{R5/8} \in L_{5/8} \in - \otimes \quad 3/8 \otimes 5/8 N_{5/8}^{1/3} - 3/8 \quad 7/8 \otimes C_{R1} \quad 2/3 \in 100 \otimes 1 \otimes \in 1/8 L_{5/8} \quad 1/3 - 3/8 \quad L_{5/8} H_{T5/8} 1/8 \in 1/3 \otimes 00 N_{5/8} R_s$
 $3/8 C_{R5/8} V_{TF} \quad 1/3 - 3/8 \quad N_{5/8} 1/8 \otimes - 10/00 \otimes 1 \otimes \in 1/8 \otimes 1/3 \otimes 00 \quad 1/3 \otimes 3/8 \otimes 1/3 - 1/8 \otimes 5/8 N_{5/8} - N_{5/8} L_{5/8} \quad \in - \quad N_{5/8}$

$N^{21/3} - V_{7/8} 1/3 1/8 N_L V_{TFR} \in - \otimes H_{TFR} 11/8 5/8 F_{LF} 5/8 F_{LF} 17/8$ “ $\blacksquare \dagger F_P \dagger \text{ff} \otimes \in L_F N^{21/3} F_{R\%} 5/8 N_L F_{F5/8} \otimes N^{25/8} - N_L$
 $\in L_F 5/8 N_{H5/8} 1/8 N_L 5/8 3/8 N_L 1 \otimes R_{1W} 1/3 N_L 1/3 N^{213/8} 5/8 F_{NL} F_{R1/3} N_L 5/8 3/8 V_{T5/8} N_L 1 1/3$
 $1/8 1 N^{22/3} \in - 1/3 N_L \in 1 - 17/8 5/8 1/8 1 - 1 N^2 \in 1/8 1/3 - 3/8 \otimes 5/8 1/3 \otimes 00 N_L \otimes 1/8 1/3 F_{R5/8} F_{F5/8} \otimes 5/8 F_{R} \in N_L R_S$
 $N^{25/8} 1/3 F_{V_{TFR} 5/8 F_{LF} 1/3 - 3/8 N_L \otimes 5/8 \in - N_L F_{R13/8} V_{T1/8} N_L \in 1 - 17/8 \otimes 00 1 W \dagger 1/8 1 F_{NL} \otimes 5/8 - 5/8 F_{R} \in 1/8$
 $\otimes 5/8 F_{R} F_{LF} \in 1 - L_F 17/8 2/3 F_{R1/3} - 3/8 5/8 3/8 3/8 F_{R} V_{T\otimes} F_P$

Key Players in the Global APIs Market

The global APIs market is competitive in nature, with several big as well as emerging players. The prominent players in the market are $\blacksquare 7/8 \in MD5/8 F_{R} \dagger - 1/8 P_t \text{ jffi} - \text{J} \otimes$
 $\otimes 1 \otimes 1/3 F_{R} N_L \in L_F$ “ $\square \text{ j} - W \in N_L MD5/8 F_{R} \otimes 00 1/3 - 3/8 \text{J} \otimes - 1/3 - 17/8 \in \text{ j} \otimes F_{R1/3} - 1/8 5/8 \text{J} \otimes - 15/8 \otimes F_{R} \in - \otimes 5/8 F_{R}$
 $\dagger - \otimes 5/8 \otimes 00 \otimes 5/8 \in N^2 \text{ j} \square 5/8 F_{R} N^{21/3} - R_S \text{J} \otimes - F_{R} \in L_F N_L 100 \text{Y} \bullet R_S 5/8 F_{R} F_{LF} - F_{F} V_{T} \in 2/3 2/3 \text{ jffi} - \text{J} \otimes \text{ff} 5/8 \otimes 1/3$
 $\blacksquare \otimes 1/3 F_{R} N^{21/3} 1/8 5/8 V_{T} N_L \in 1/8 1/3 \otimes 00 \dagger - 3/8 V_{T} F_{NL} F_{R} \in 5/8 F_{LF} R_{NL} 3/8 P_t \dagger F_{LF} F_{R1/3} 5/8 \otimes 00 \text{J} \otimes , \otimes 00 \in R_{\%} \otimes 00 \otimes 00 R_S$
 $1/3 - 3/8 - 1 N^2 H_{T1/3} - R_S \text{ jffi} - \text{J} \otimes \square \otimes 00 1/3 N - N^2 \in N_L \otimes SM \otimes 00 \in - 5/8 H_{T\otimes} 00 1/8 \text{ jffi} SM \text{J} \otimes \bullet 5/8 F_{R1/8} \% \text{ j}$
 $- 1 P_t \otimes \dagger - 1/8 P_t \text{ jffi} - \text{J} \otimes$ “ $2/3 2/3 \text{ff} \in 5/8 \dagger - 1/8 P_t \text{ jffi} - \text{J} \otimes \otimes P_t \dagger 17/8 7/8 N^{21/3} - - \text{Y} R_{1/3} \square 11/8 \otimes 5/8 R_{NL} 3/8 P_t$
 $\text{j} - W \in N_L MD5/8 F_{R} \otimes 00 1/3 - 3/8 \text{J} \otimes 1/3 - 3/8$ “ $L_F N_L F_{R1/3} \$ 5/8 - 5/8 1/8 1/3 H_{T\otimes} 00 1/8 \text{ jffi} SM \text{J} \otimes P_t$

$\blacksquare 7/8 \in MD5/8 F_{R} \in L_F 1 - 5/8 17/8 N_L \otimes 5/8 \otimes 00 5/8 1/3 3/8 \in - \otimes H_{T\otimes} 00 1/3 R_S 5/8 F_{R} F_{LF} \in - N_L \otimes 5/8$
 $\otimes 00 12/3 1/3 \otimes 00$ “ $\blacksquare \dagger \in - 3/8 V_{T} F_{NL} F_{R} R_S P_t \text{ff} \otimes 5/8 \otimes 00 5/8 1/3 3/8 \in - \otimes H_{T1} F_{NL} \in 1 - 17/8 N_L \otimes 5/8$
 $1/8 1 N^2 H_{T1/3} - R_S \in L_F N^{21/3} \% 1 F_{R} \otimes 00 R_S 1/3 N_L N_L F_{R} \in 2/3 V_{T} N_L 5/8 3/8 N_L 1 \in N_L F_{LF} 5/8 N^{21/3} V_{T} F_{NL} \in \otimes 5/8$
 $H_{TFR} 13/8 V_{T1/8} N_L H_{TFR} N_L 7/8 100 \in 1 P_t \text{ff} \otimes 5/8 1/8 1 N^2 H_{T1/3} - R_S \otimes 1/3 F_{LF} 1/3 F_{NL} F_{R1} - \otimes 2/3 F_{R1/3} - 3/8$
 $\in N^{21/3} \otimes 5/8 \otimes W \otimes \in 1/8 \otimes \in \otimes 5/8 F_{LF} \in N_L 1/3 1/8 1 N^2 H_{T5/8} N_L \in N_L \in \otimes 5/8 5/8 3/8 \otimes 5/8 1 \otimes 5/8 F_{R} 1 N_L \otimes 5/8 F_{R}$
 $H_{T\otimes} 00 1/3 R_S 5/8 F_{R} F_{LF} P_t \dagger - 1 F_{R3/8} 5/8 F_{R} N_L 1 F_{R5/8} N^{21/3} \in - 1/8 1 N^2 H_{T5/8} N_L \in N_L \in \otimes 5/8 1/3 - 3/8$
 $F_{NL} F_{R5/8} - \otimes N_L \otimes 5/8 - \in N_L F_{LF} N^{21/3} F_{R\%} 5/8 N_L H_{T1} F_{NL} \in 1 - \otimes N_L \otimes 5/8 1/8 1 N^2 H_{T1/3} - R_S$
 $H_{TFR} \in N^{21/3} F_{R} \in \otimes 00 R_S 7/8 11/8 V_{T} F_{LF} 5/8 F_{LF} 1 - 1/3 3/8 1 H_{T} N_L \in - \otimes 2/3 1 N_L \otimes 1 F_{R\otimes} 1/3 \in 1/8 1/3 - 3/8$
 $\in - 1 F_{R\otimes} 1/3 \in 1/8 \otimes F_{R1} W N_L \otimes F_{NL} F_{R1/3} N_L 5/8 \otimes \in 5/8 F_{LF} F_{V_{T1/8}} \otimes 1/3 F_{LF} 1/3 \otimes F_{R5/8} 5/8 N^{25/8} - N_L F_{LF}$
 $H_{T1/3} F_{R} N_L - 5/8 F_{R} F_{LF} \otimes \in H_{T} F_{LF} 1/8 100 \otimes 00 1/3 2/3 1 F_{R1/3} N_L \in 1 - L_F \otimes H_{TFR} 13/8 V_{T1/8} N_L 1/3 H_{T} H_{TFR} 1 \otimes 1/3 \otimes 00 F_{LF}$
 $1/3 - 3/8 1/3 1/8 F_{V_{T}} \in L_F \in N_L \in 1 - L_F P_t \dagger - 1/3 1/8 1/8 1 F_{R3/8} 1/3 - 1/8 5/8 W \in N_L \otimes N_L \otimes \in L_F \otimes \in - TM V_{T} - 5/8$
 $1/2 \otimes n \otimes \blacksquare 7/8 \in MD5/8 F_{R} 1/3 1/8 F_{V_{T}} \in F_{R5/8} 3/8$ “ $- 1/3 1/8 1 F_{R} \blacksquare \otimes 1/3 F_{R} N^{21/3} 1/8 5/8 V_{T} N_L \in 1/8 1/3 \otimes 00 F_{LF} \dagger - 1/8 P_t$
 $\text{jffi} - \text{J} \otimes 1/3 \otimes 00 5/8 1/3 3/8 \in - \otimes 2/3 \in 1 H_{T\otimes} 1/3 F_{R} N^{21/3} 1/8 5/8 V_{T} N_L \in 1/8 1/3 \otimes 00 1/8 1 N^2 H_{T1/3} - R_S$
 $3/8 5/8 \otimes 5/8 \otimes 00 1 H_{T} \in - \otimes L_F N^{21/3} \otimes 00 \otimes 00 N^{210} \otimes 00 5/8 1/8 V_{T\otimes} 00 5/8 N_L \otimes 5/8 F_{R1/3} H_{T5/8} V_{T} N_L \in 1/8 F_{LF} P_t$

$\odot R^1 W^N \odot$ $1/3 R^{5/8} \Delta$ $R \in L F \in - \odot$ $\in - 1/8 \in 3/8^{5/8} - 1/8^{5/8} L F$ $17/8$ $1 - 1/8^{10/00} 1 \odot R s \Delta$
 $1/8^{1/3} R^{3/8} \in 1 \odot 1/3 L F 1/8 V T^{00} 1/3 R \Delta$ $3/8 \in 1/3^{2/3} 5/8 N^{5/8} L F$ $1/3 - 3/8$ $\% \in 7/8^{5/8} L F N L R s \% 00^{5/8}$
 $3/8 \in L F^{5/8} 1/3 L F^{5/8} L F \Delta$ $R \in L F \in - \odot$ $- V T N^{2/3} 5/8 R$ $17/8$ $\odot 1 L F H T \in N^{1/3} \% 00 L F$ $1/3 - 3/8$ $3/8 \in 1/3 \odot - 1 L F N L \in 1/8$
 $1/8^{5/8} - N^{5/8} R L F \Delta$ $R \in L F \in - \odot$ $\odot 5/8 R \in 1/3 N L R \in 1/8$ $H T H T V T^{00} 1/3 N L \in 1 -$ $\in -$ $3/8^{5/8} \odot 5/8^{00} 1 H T \in - \odot$
 $1/8^{1/3} V T - N L R \in 5/8 L F \Delta$ $\in - 1/8 R^{5/8} 1/3 L F \in - \odot$ $\odot 5/8^{1/3} \% 00 N L \odot 1/8^{1/3} R^{5/8}$ $5/8 N H T^{5/8} - 3/8 \in N L V T R^{5/8} \Delta$
 $\in - 1/8 R^{5/8} 1/3 L F \in - \odot$ $3/8 \in L F^{5/8} 1/3 L F^{5/8}$ $1/3 W^{1/3} R^{5/8} - 5/8 L F L F$ $1/3 - 3/8$ $5/8^{3/8} V T^{1/8} 1/3 N L \in 1 - P t$

$\dagger 1 W^{5/8} \odot 5/8 R \Delta$ $1/3$ $\% 00^{1/3} 1/8 \%$ $17/8$ $L F \%$ $\in \% 00 \% 00^{5/8} 3/8$ $W^{1/3} R^{5/8} 7/8^{1/3} R^{1/8} 5/8$ $1/3 - 3/8$
 $\% \in N^{2/3} \in N^{5/8} 3/8$ $1/3^{1/8} 1/8^{5/8} L F L F \in 2/3 \in \% 00 \in N L R s$ $17/8$ $3/8 R V T \odot L F$ $\in -$ $N L \odot 5/8$ $3/8^{5/8} \odot 5/8^{00} 1 H T \in - \odot$
 $1/8^{1/3} V T - N L R \in 5/8 L F$ $1/3 R^{5/8}$ $\% \in \% 5/8 \% 00 R s$ $N L^1$ $R^{5/8} L F N L R \in 1/8 N L$ $N L \odot 5/8$ $N^{2/3} R^{5/8} N L$
 $\odot R^1 W^N \odot P t$

$f f \odot 5/8$ $" 1/8 N L \in \odot 5/8$ $\blacksquare \odot 1/3 R N^{2/3} 1/8^{5/8} V T N L \in 1/8^{1/3} \% 00$ $\dagger - \odot R^{5/8} 3/8 \in 5/8 - N L L F$ $i " \blacksquare \dagger \dagger$
 $\bullet 1/3 R^{5/8} \% 5/8 N L$ $\in L F$ $L F^{5/8} \odot N^{2/3} 5/8 - N L^{5/8} 3/8$ $1 -$ $N L \odot 5/8$ $2/3^{1/3} L F \in L F$ $17/8$ $" \blacksquare \dagger N L R s H T^{5/8} \Delta$ $3/8 R V T \odot$
 $N L R s H T^{5/8} \Delta$ $N^{2/3} - V T^{7/8} 1/3^{1/8} N L V T R^{5/8} R L F \Delta$ $N L \odot 5/8 R^{1/3} H T R s$ $1/3 R^{5/8} 1/3$ $1/3 - 3/8$ $\odot 5/8^{10} R^{1/3} H T \odot R s P t$ $\blacksquare -$
 $N L \odot 5/8$ $2/3^{1/3} L F \in L F$ $17/8$ $N L R s H T^{5/8}$ $17/8$ $" \blacksquare \dagger \Delta N L \odot 5/8$ $N^{2/3} R^{5/8} \% 5/8 N L$ $\in L F$ $L F^{5/8} \odot N^{2/3} 5/8 - N L^{5/8} 3/8$ $\in - N L^{1 \Delta}$
 $- \odot 5/8 N^{2/3} \in 1/8^{1/3} \% 00$ $" \blacksquare \dagger 1/3 - 3/8$ $- \in 10^{00} 1 \odot \in 1/8^{1/3} \% 00$ $" \blacksquare \dagger P t$ $f f \odot 5/8$ $N^{2/3} R^{5/8} \% 5/8 N L$ $\in L F$ $7/8 V T R N L \odot 5/8 R$
 $L F^{5/8} \odot N^{2/3} 5/8 - N L^{5/8} 3/8$ $1 -$ $N L \odot 5/8$ $2/3^{1/3} L F \in L F$ $17/8$ $N L R s H T^{5/8}$ $17/8$ $3/8 R V T \odot L F$ $\in - N L^{13}$
 $\in - - 1 \odot 1/3 N L \in \odot 5/8 \Delta$ $\odot 5/8 - 5/8 R \in 1/8$ $1/3 - 3/8$ $\blacksquare \odot 5/8 R \neq N L \odot 5/8 \neq 1/8^{1/3} V T - N L^{5/8} R$ $j \blacksquare f f - \dagger$ $3/8 R V T \odot L F P t$
 $" 1/8^{1/8} 1 R^{3/8} \in - \odot$ $N L^1$ $N^{2/3} R^{5/8} \% 5/8 N L$ $H T^{00} 1/3 R s^{5/8} R L F \Delta$ $N L \odot 5/8$ $N^{2/3} R^{5/8} \% 5/8 N L$ $\in L F$
 $L F^{5/8} \odot N^{2/3} 5/8 - N L^{5/8} 3/8$ $\in - N L^1$ $- 1/3 H T N L \in \odot 5/8$ $j \dagger - \neq \odot 1 V T L F^{5/8} \dagger$ $N^{2/3} - V T^{7/8} 1/3^{1/8} N L V T R^{5/8} R$ $1/3 - 3/8$
 $\bullet 5/8 R^{1/8} \odot 1/3 - N L$ $j^{1/8} 1 - N L R^{1/3} 1/8 N L \dagger$ $N^{2/3} - V T^{7/8} 1/3^{1/8} N L V T R^{5/8} R P t$ $f f \odot 5/8$ $N^{2/3} R^{5/8} \% 5/8 N L$ $\in L F$
 $1/3 \% 00 L F^1$ $L F^{5/8} \odot N^{2/3} 5/8 - N L^{5/8} 3/8$ $1 -$ $N L \odot 5/8$ $2/3^{1/3} L F \in L F$ $17/8$ $N L \odot 5/8 R^{1/3} H T R s$ $1/3 R^{5/8} 1/3$ $\in - N L^{13}$
 $\blacksquare - 1/8^{10} 00^{10} R s$ $\dagger R V T \odot L F \Delta$ $\odot 1 - \neq L F N L^{5/8} R^{1/3} \in 3/8^{1/3} \% 00$ $" - N L \in \neq \in - 7/8^{00} 1/3 N^{2/3} N^{1/3} 1 R R s$ $\dagger R V T \odot L F \Delta$
 $- 1/3 R^{3/8} \in 1 \odot 1/3 L F 1/8 V T^{00} 1/3 R$ $\dagger R V T \odot L F \Delta$ $" - N L \in \neq 3/8 \in 1/3^{2/3} 5/8 N L \in 1/8$ $\dagger R V T \odot L F \Delta$ $\odot 5/8 V T R^{10} 00^{10} R s$
 $\dagger R V T \odot L F \Delta$ $\bullet V T L F^{1/8} V T^{00} 1 L F^{5/8} \% 5/8 \% 00^{5/8} N L^{1/3} \% 00$ $3/8 R V T \odot L F$ $1/3 - 3/8$ $1 N L \odot 5/8 R L F P t$
 $\square 5/8^{10} R^{1/3} H T \odot \in 1/8^{1/3} \% 00 \% 00 R s \Delta$ $N L \odot 5/8$ $N^{2/3} R^{5/8} \% 5/8 N L$ $\in L F$ $L F^{5/8} \odot N^{2/3} 5/8 - N L^{5/8} 3/8$ $1/3^{1/8} R^{1/3} L F L F$
 $7/8^{1/3} V T R$ $R^{5/8} \odot \in 1 - L F$ $- 1/3 N^{2/3} \% 00 R s$ $\odot 1 R N L \odot$ $" N^{2/3} R \in 1/8^{1/3} \Delta$ $\dagger R^{1/3} H T^{5/8} \Delta$ $" L F \in 1/3$ $\blacksquare 1/3^{1/8} \in 7/8 \in 1/8$
 $1/3 - 3/8$ $R " \bullet " P t$ $\dagger - 1 R^{2/3} - \in 1/8$ $\odot R^1 W^N \odot$ $N L \odot R^1 V T \odot \odot$ $N^{2/3} R^{5/8} \% 5/8 R$ $1/3 - 3/8$
 $1/3^{1/8} F V T \in L F \in N L \in 1 -$ $1/3 R^{5/8}$ $N L \odot 5/8$ $\% 5/8 R s$ $L F N L R^{1/3} N L^{5/8} \odot \in 5/8 L F$ $1/3^{3/8} H T N L^{5/8} 3/8$ $2/3 R s$ $N L^1 H T$
 $\in - 3/8 V T L F N L R s$ $H T^{00} 1/3 R s^{5/8} R L F P t$ $\odot 1 R$ $\in - L F N L^{1/3} - 1/8^{5/8} \Delta$ $\square 1/3 - 2/3^{1/3} N R s$ $R^{5/8} 1/8^{5/8} - N L^{00} R s$
 $1/3^{1/8} F V T \in R^{5/8} 3/8$ $- V T -$ $\blacksquare \odot 1/3 R N^{2/3} 1/8^{5/8} V T N L \in 1/8^{1/3} \% 00 \Delta$ $1/3$ $N^{2/3} \odot 5/8$ $N L \odot 1/3 N L$ $\odot 5/8^{00} H T^{5/8} 3/8$ $N L \odot 5/8$
 $1/8^{1/3} N^{2/3} 1/3 - R s$ $5/8 N^{2/3} R^{5/8} \% 5/8$ $1/3 L F$ $\dagger - 3/8 \in 1/3 L F$ $N L^1 H T N^{2/3} L F N L$ $3/8 R V T \odot$ $N^{2/3} - V T^{7/8} 1/3^{1/8} N L V T R^{5/8} R P t$

$-\in N^{\circ}\in\%00\frac{1}{3}F_R\%00Rs\in$ $\in-$ $TMV_T\%00Rs$ $\frac{1}{2}^{aa}\in$ $\dagger L_FH_T\in F_R\frac{1}{3}$ $\frac{1}{8}1N^{\circ}H_T\%00\frac{5}{8}N_L\frac{5}{8}\frac{3}{8}$ $N_L\in\frac{5}{8}$
 $\frac{1}{3}\frac{1}{8}F_FV_T\in L_F\in N_L\in 1-$ $1\frac{7}{8}$ $N_L\in\frac{5}{8}$ “ $\blacksquare\dagger$ $N^{\circ}\frac{1}{3}-V_T\frac{7}{8}\frac{1}{3}\frac{1}{8}N_LV_TF_R\in-\in$ $\frac{7}{8}\frac{1}{3}\frac{1}{8}\in\%00\in N_LRs$ $\frac{1}{3}-\frac{3}{8}$
 $\frac{1}{3}L_F\frac{1}{3}\frac{1}{8}\in\frac{1}{3}N_L\frac{5}{8}\frac{3}{8}$ $\square\uparrow$, $\frac{7}{8}\frac{1}{3}\frac{1}{8}\in\%00\in N_LRs$ $1\frac{7}{8}$ $\blacksquare F_R\frac{1}{8}\in\frac{3}{8}$ $-\in\frac{5}{8}N^{\circ}\in\frac{1}{8}\frac{1}{3}\%00L_F$ \uparrow
 $\blacksquare\in\frac{1}{3}F_RN^{\circ}\frac{1}{3}\frac{1}{8}\frac{5}{8}V_TN_L\in\frac{1}{8}\frac{1}{3}\%00L_F$ $R^N_L\frac{3}{8}P_t$ $ff\in\frac{5}{8}$ $\frac{1}{8}1N^{\circ}H_T\frac{1}{3}-\in\frac{5}{8}L_F$ $\in-\frac{1}{8}\%00V_T\frac{3}{8}\frac{5}{8}\in$
 $\circ 1\oplus\frac{1}{3}F_RN_L\in L_F$ “ $\square\in$ $-V_T-$ $\blacksquare\in\frac{1}{3}F_RN^{\circ}\frac{1}{3}\frac{1}{8}\frac{5}{8}V_TN_L\in\frac{1}{8}\frac{1}{3}\%00$ $\dagger-\frac{3}{8}V_TL_FN_LF_R\in\frac{5}{8}L_F$ $R^N_L\frac{3}{8}P_t\in$
 $\blacksquare\frac{7}{8}\in MD\frac{5}{8}F_R\in$ $\dagger-\frac{1}{8}P_t\in$ $ff\frac{5}{8}\oplus\frac{1}{3}$ $\blacksquare\in\frac{1}{3}F_RN^{\circ}\frac{1}{3}\frac{1}{8}\frac{5}{8}V_TN_L\in\frac{1}{8}\frac{1}{3}\%00$ $\dagger-\frac{3}{8}V_TL_FN_LF_R\in\frac{5}{8}L_F$ $R^N_L\frac{3}{8}P_t\in$
 $\bullet Rs\%00\frac{1}{3}-$ $\circ P_tffP_t\in$ $\langle F_RP_t$ $\square\frac{5}{8}\frac{3}{8}\frac{3}{8}Rs\mathcal{S}L_F$ $R\frac{1}{3}\frac{2}{3}\frac{1}{3}F_R\frac{1}{3}N_L\frac{1}{3}F_R\in\frac{5}{8}L_F\in$ “ $\frac{1}{8}N_L\frac{1}{3}\oplus\in L_F$ $H_T\%00\frac{1}{8}\in$
 $R\frac{1}{3}-MD\frac{1}{3}$ $\square F_R\frac{1}{3}V_TH_T$ “ $\square\in$ $\dagger L_FH_T\in F_R\frac{1}{3}$ $\dagger-\frac{1}{8}P_t$ $\frac{1}{3}-\frac{3}{8}$ $-\in-\circ$ $\rightarrow P_t$

$ff\in\frac{5}{8}$ $L_FH_T\frac{5}{8}-\frac{3}{8}\in-\in$ $1-$ $\in\frac{5}{8}\frac{1}{3}\%00N_L\in\frac{1}{8}\frac{1}{3}F_R\frac{5}{8}$ $\in\frac{1}{3}L_F$ $\in F_R\frac{1}{3}\frac{1}{3}F_R\frac{1}{3}H_T\in\frac{3}{8}$
 $H_T\frac{1}{3}\frac{1}{8}\frac{5}{8}$ $\in-$ $F_R\frac{5}{8}\frac{1}{8}\frac{5}{8}-N_L$ $Rs\frac{5}{8}\frac{1}{3}F_RL_F$ $\frac{1}{3}-\frac{3}{8}$ $\in N_L$ $\in-\frac{1}{8}F_R\frac{5}{8}\frac{1}{3}L_F\frac{5}{8}\frac{3}{8}$ $\frac{1}{3}N_L$ $\frac{1}{3}$ $-\in\square\square$ $1\frac{7}{8}$
 $\eta P_t\mathcal{X}\frac{1}{2}\ast$ $\frac{2}{3}\frac{5}{8}N_L\frac{1}{3}\frac{5}{8}\frac{5}{8}-$ $N_L\in\frac{5}{8}$ $Rs\frac{5}{8}\frac{1}{3}F_RL_F$ $\frac{1}{2}^{aa}\frac{1}{4}$ $\frac{1}{3}-\frac{3}{8}$ $\frac{1}{2}^{aa}\frac{1}{4}P_t$ $ff\in\frac{5}{8}$ $\in\frac{5}{8}\frac{1}{3}\%00N_L\in\frac{1}{8}\frac{1}{3}F_R\frac{5}{8}$
 $L_FH_T\frac{5}{8}-\frac{3}{8}\in-\in$ $\in F_R\frac{1}{3}\frac{1}{3}N_L\in$ $\frac{1}{3}L_F$ $L_F\in-\in\frac{7}{8}\in\frac{1}{8}\frac{1}{3}-N_L\%00Rs$ $\in\in\in\in\frac{5}{8}F_R$ $N_L\in\frac{1}{3}-$ $N_L\in\frac{5}{8}$
 $H_T\frac{1}{3}H_TV_T\%00\frac{1}{3}N_L\in 1-$ $\in F_R\frac{1}{3}\frac{1}{3}N_L\in$ $F_R\frac{1}{3}N_L\frac{5}{8}$ $N_L\in\frac{1}{3}N_L$ $\in F_R\frac{5}{8}\frac{1}{3}N_L$ $\frac{1}{3}N_L$ $\frac{1}{3}$ $-\in\square\square$ $1\frac{7}{8}$ $\circ P_t\frac{1}{2}\frac{1}{2}\ast$ $\frac{7}{8}\frac{1}{3}F_R$
 $N_L\in\frac{5}{8}$ $L_F\frac{1}{3}N^{\circ}\frac{5}{8}$ $H_T\frac{5}{8}F_R\in\frac{1}{3}\frac{3}{8}P_t$ $ff\in\frac{5}{8}$ $H_T\frac{5}{8}F_R$ $\frac{1}{8}\frac{1}{3}H_T\in N_L\frac{1}{3}$ $\in\frac{5}{8}\frac{1}{3}\%00N_L\in\frac{1}{8}\frac{1}{3}F_R\frac{5}{8}$ $L_FH_T\frac{5}{8}-\frac{3}{8}\in-\in$
 $F_R\frac{1}{3}L_F\frac{5}{8}$ $\frac{7}{8}F_R1N^{\circ}$ $\%V_TL_FN_L$ $V_T-\frac{3}{8}\frac{5}{8}F_R$ $ffi-\bullet$ n^{aa} $\in-$ $\frac{1}{2}^{aa}\frac{1}{4}$ $N_L\frac{1}{3}$ $\frac{1}{3}\frac{2}{3}\frac{1}{3}\oplus\frac{5}{8}$ $ffi-\bullet$ aaa $\in-$
 $\frac{1}{2}^{aa}\frac{1}{4}\in$ $\frac{1}{3}N_L$ $\frac{1}{3}-$ $\frac{1}{3}\oplus\frac{5}{8}F_R\frac{1}{3}\in\frac{5}{8}$ $-\in\square\square$ $1\frac{7}{8}$ $\circ P_t\frac{1}{2}\ast$ P_t $ff\in\frac{5}{8}$ $\frac{7}{8}\frac{1}{3}\frac{1}{8}V_TL_F$ $1-$ $\in\frac{5}{8}\frac{1}{3}\%00N_L\in\frac{1}{8}\frac{1}{3}F_R\frac{5}{8}$
 $L_FH_T\frac{5}{8}-\frac{3}{8}\in-\in$ $\frac{1}{3}L_F$ $\frac{1}{3}\frac{1}{3}L_F\frac{5}{8}F_R\oplus\frac{5}{8}\frac{3}{8}$ $N_L\frac{1}{3}$ $\frac{2}{3}\frac{5}{8}$ $\frac{1}{3}$ $\%00\frac{1}{2}\frac{1}{3}\frac{1}{3}\%00$ $H_T\in\frac{5}{8}-1N^{\circ}\frac{5}{8}-1-$ $\frac{1}{3}-\frac{3}{8}$
 $N_L\in L_F$ $\frac{3}{8}\in F_R\frac{5}{8}\frac{1}{8}N_L\%00Rs$ $\frac{2}{3}\frac{5}{8}-\frac{5}{8}\frac{7}{8}\in N_L\frac{5}{8}\frac{3}{8}$ $N_L\in\frac{5}{8}$ $\frac{1}{3}\frac{1}{8}N_L\in\oplus\frac{5}{8}$
 $H_T\in\frac{1}{3}F_RN^{\circ}\frac{1}{3}\frac{1}{8}\frac{5}{8}V_TN_L\in\frac{1}{8}\frac{1}{3}\%00$ $\in-\in F_R\frac{5}{8}\frac{3}{8}\in\frac{5}{8}-N_LL_F$ $N^{\circ}\frac{1}{3}F_R\%u\frac{5}{8}N_LP_t$

$-H_T\frac{5}{8}\frac{1}{8}\in\frac{1}{3}\%00N_LRs$ $N^{\circ}\frac{5}{8}\frac{3}{8}\in\frac{1}{8}\in-\frac{5}{8}L_F$ $\frac{1}{3}$ $N_LF_R\frac{5}{8}-\frac{3}{8}$ $\in-$ $N_L\in\frac{5}{8}$ $\frac{1}{3}\frac{1}{8}N_L\in\oplus\frac{5}{8}$
 $H_T\in\frac{1}{3}F_RN^{\circ}\frac{1}{3}\frac{1}{8}\frac{5}{8}V_TN_L\in\frac{1}{8}\frac{1}{3}\%00$ $\in-\in F_R\frac{5}{8}\frac{3}{8}\in\frac{5}{8}-N_LL_F$ $N^{\circ}\frac{1}{3}F_R\%u\frac{5}{8}N_L$

“ $\in\in\in\in\frac{5}{8}F_R$ $\in\frac{5}{8}-\frac{5}{8}F_R\in\frac{1}{8}$ $\frac{1}{3}\frac{3}{8}\frac{1}{3}H_TN_L\in 1-$ $F_R\frac{1}{3}N_L\frac{5}{8}$ $\in-$ $\frac{3}{8}\frac{5}{8}\oplus\frac{5}{8}\%00\frac{1}{3}H_T\frac{5}{8}\frac{3}{8}$
 $\frac{1}{8}\frac{1}{3}V_T-N_LF_R\in\frac{5}{8}L_F$ $N_L\in\frac{1}{3}N_L$ $F_R\frac{1}{3}-\in\frac{5}{8}L_F$ $\frac{7}{8}F_R1N^{\circ}$ $\frac{1}{2}\circ\ast$ $N_L\frac{1}{3}$ $\frac{1}{4}\frac{1}{2}\ast$ $\in L_F$ $\frac{3}{8}F_R\in\oplus\in-\in$
 $\%00\frac{1}{2}\frac{1}{3}\frac{1}{3}\%00$ $N^{\circ}\frac{5}{8}\frac{3}{8}\in\frac{1}{8}\in-\frac{5}{8}$ $L_FH_T\frac{5}{8}-\frac{3}{8}\in-\in$ $\frac{1}{3}-\frac{3}{8}$ $\frac{1}{3}\in\frac{3}{8}\in-\in$ $\in F_R\frac{5}{8}\frac{1}{3}N_L\frac{5}{8}F_R$ $\frac{1}{3}\frac{1}{8}\frac{1}{8}\frac{5}{8}L_FL_F$
 $N_L\frac{1}{3}$ $\in N^{\circ}H_TF_R\frac{1}{3}\oplus\frac{5}{8}\frac{3}{8}\in$ $\%00\in\frac{7}{8}\frac{5}{8}L_F\frac{1}{3}\oplus\in-\in$ $\in\frac{5}{8}\frac{1}{3}\%00N_L\in\frac{1}{8}\frac{1}{3}F_R\frac{5}{8}$ $L_F\frac{5}{8}F_R\oplus\in\frac{1}{8}\frac{5}{8}L_FP_t$ $ff\in\frac{5}{8}$
 $\frac{1}{3}\frac{3}{8}\frac{1}{3}H_TN_L\in 1-$ $1\frac{7}{8}$ $\frac{2}{3}F_R\frac{1}{3}-\frac{3}{8}\frac{5}{8}\frac{3}{8}$ $\in\frac{5}{8}-\frac{5}{8}F_R\in\frac{1}{8}$ $\frac{3}{8}F_RV_T\in L_F$ $H_TF_R\frac{5}{8}\frac{3}{8}\in\frac{1}{8}N_L\frac{5}{8}\frac{3}{8}$ $N_L\frac{1}{3}$ $\frac{2}{3}\frac{5}{8}$
 $\in\in\in\in\frac{5}{8}F_R$ $\in-$ $\frac{5}{8}N^{\circ}\frac{5}{8}F_R\in-\in$ $\frac{5}{8}\frac{1}{8}\frac{1}{3}-1N^{\circ}\in\frac{5}{8}L_F$ $L_FV_T\frac{1}{8}\in$ $\frac{1}{3}L_F$ $-\in\in-\frac{1}{3}$ $\frac{1}{3}-\frac{3}{8}$ $\dagger-\frac{3}{8}\in\frac{1}{3}$
 $\frac{1}{3}-\frac{3}{8}$ $\in\frac{5}{8}-\frac{5}{8}F_R\in\frac{1}{8}$ $\frac{3}{8}F_RV_T\in L_F$ $\frac{1}{3}\frac{1}{8}\frac{1}{8}\frac{1}{3}V_T-N_L\frac{5}{8}\frac{3}{8}$ $\frac{7}{8}\frac{1}{3}F_R$ $-\frac{5}{8}\frac{1}{3}F_R\%00Rs$ $\in\ast$ $1\frac{7}{8}$ $N_L\in\frac{5}{8}$
 $N_L\frac{1}{3}N_L\frac{1}{3}\%00$ $\frac{3}{8}F_RV_T\in L_F$ $L_F\%00\frac{3}{8}$ $\frac{2}{3}Rs$ $\oplus\frac{1}{3}\%00V_T\frac{5}{8}$ $\in-$ $N_L\in\frac{5}{8}L_F\frac{5}{8}$ $\frac{7}{8}\frac{1}{3}L_FN_L\in F_R\frac{1}{3}\frac{1}{3}\in-\in$
 $-\frac{1}{3}N_L\in 1-L_F$ $\in-$ $\frac{1}{2}^{aa}\eta P_t$ $\in L_F\in-\in$ $V_TL_F\frac{5}{8}$ $1\frac{7}{8}$ $L_FH_T\frac{5}{8}\frac{1}{8}\in\frac{1}{3}\%00N_LRs$ $N^{\circ}\frac{5}{8}\frac{3}{8}\in\frac{1}{8}\in-\frac{5}{8}L_F$ $\in L_F$

$\frac{1}{3}-N_L \in \frac{1}{8} \in H_T \frac{1}{3} N_L \frac{5}{8} \frac{3}{8}$ $N_L 1$ $\otimes C_R 1 \frac{1}{2}$ $N_L \frac{5}{8}$ $H_T \frac{1}{3} C_R N^{\frac{1}{3}} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{00}$ $L_F H_T \frac{5}{8} - \frac{3}{8} \in - \otimes$
 $\frac{1}{2} C_R \frac{0}{00} \frac{3}{8} \frac{1}{2} \in \frac{3}{8} \frac{5}{8}$ $\frac{1}{2} \in N_L \otimes$ $F_F V_T \in \frac{1}{8} \frac{0}{00} \frac{5}{8} C_R$ $\otimes C_R 1 \frac{1}{2} N_L \otimes$ $\in -$ $C_R \in \frac{1}{8} \frac{5}{8} C_R \frac{3}{8} \frac{5}{8} \otimes \frac{5}{8} \frac{0}{00} 1 H_T \frac{5}{8} \frac{3}{8}$
 $- \frac{1}{3} N_L \in 1 - L_F$ $\frac{1}{3} L_F$ $\frac{1}{8} 1 N^{\frac{1}{3}} H_T \frac{1}{3} C_R \frac{5}{8} \frac{3}{8}$ $N_L 1$ $N_L \frac{5}{8} \in C_R$ $\frac{5}{8} N^{\frac{5}{8}} C_R \otimes \in - \otimes$ $\frac{1}{8} 1 V_T - N_L \frac{5}{8} C_R H_T \frac{1}{3} C_R N_L L_F P_t$
 $ff \otimes \in L_F$ $\in L_F$ $H_T C_R \in N^{\frac{1}{3}} \frac{1}{3} C_R \in \frac{0}{00} R_s$ $\frac{2}{3} \frac{5}{8} \frac{1}{8} \frac{1}{3} V_T L_F \frac{5}{8}$ $N_L \frac{5}{8}$ $\frac{7}{8} 1 C_R N^{\frac{5}{8}} C_R$ $\otimes \frac{1}{3} \otimes \frac{5}{8}$ $\frac{1}{3} \frac{3}{8} \frac{5}{8} C_F V_T \frac{1}{3} N_L \frac{5}{8}$
 $N^{\frac{1}{3}} \frac{1}{3} - V_T \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L V_T C_R \in - \otimes$ $V_T - \in N_L L_F \frac{5}{8}$ $\frac{1}{3}$ $\otimes \in \otimes \frac{5}{8} C_R$ $L_F H_T \frac{5}{8} - \frac{3}{8} \in - \otimes$ $H_T 1 \frac{1}{2} \frac{5}{8} C_R \frac{3}{8}$ $\frac{1}{3} - \frac{3}{8}$
 $\otimes C_R \frac{5}{8} \frac{1}{3} N_L \frac{5}{8} C_R$ $\frac{5}{8} N^{\frac{1}{3}} H_T \otimes \frac{1}{3} L_F \in L_F$ $1 -$ $N_L C_R \frac{1}{3} - L_F H_T \frac{1}{3} C_R \frac{5}{8} - N_L$ $H_T C_R \in \frac{1}{8} \in - \otimes$ $\frac{2}{3} R_s$
 $\frac{1}{3} L_F L_F \frac{5}{8} L_F L_F \in - \otimes$ $N^{\frac{5}{8}} \frac{1}{3} L_F V_T C_R \in - \otimes$ $\frac{5}{8} \frac{7}{8} \frac{7}{8} \frac{5}{8} \frac{1}{8} N_L L_F$ $1 -$ $N_L \frac{5}{8}$ $H_T 1 H_T V_T \frac{0}{00} \frac{1}{3} N_L \in 1 - P_t$

$\blacksquare C_R \frac{1}{3} \frac{1}{8} V_T \frac{1}{8} N_L$ $\frac{1}{8} \frac{7}{8} \frac{5}{8} C_R \in - \otimes$ $\frac{5}{8} N^{\frac{1}{3}} H_T \frac{1}{3} - L_F \in 1 -$ $\frac{1}{3} - \frac{3}{8}$ $\frac{1}{8} 1 L_F N_L$ $C_R \frac{5}{8} \frac{3}{8} V_T \frac{1}{8} N_L \in 1 -$ $N_L 1$ $\otimes \frac{5}{8} \frac{0}{00} H_T$
 $\in N^{\frac{1}{3}} N^{\frac{5}{8}} \frac{1}{3} L_F V_T C_R \frac{1}{3} \frac{2}{3} \frac{0}{00} R_s$

$" -$ $\in - N_L \frac{5}{8} - L_F \frac{5}{8}$ $\frac{7}{8} 1 \frac{1}{8} V_T L_F$ $1 -$ $\frac{1}{8} 1 N^{\frac{1}{3}} N^{\frac{5}{8}} C_R \frac{1}{8} \in \frac{1}{8} \frac{0}{00} \in MD \in - \otimes$ $\frac{3}{8} C_R V_T \otimes L_F$ $\frac{1}{3} - \frac{3}{8}$
 $C_R \frac{5}{8} \frac{3}{8} V_T \frac{1}{8} \in - \otimes$ $1 H_T \frac{5}{8} C_R \frac{1}{3} N_L \in - \otimes$ $\frac{1}{8} 1 L_F N_L L_F$ $\frac{2}{3} R_s$ $1 V_T N_L L_F V_T C_R \frac{1}{8} \in - \otimes$ $\square \uparrow$ $\frac{1}{3} \frac{1}{8} N_L \in \otimes \in N_L \in \frac{5}{8} L_F$
 $\frac{1}{8} \frac{1}{3} -$ $\in N^{\frac{1}{3}} H_T C_R 1 \otimes \frac{5}{8}$ $N_L \frac{5}{8}$ $1 C_R \otimes \frac{1}{3} - \in MD \frac{1}{3} N_L \in 1 - \frac{1}{3} \frac{0}{00}$ $\frac{5}{8} \frac{7}{8} \frac{7}{8} \in \frac{1}{8} \in \frac{5}{8} - \frac{1}{8} R_s$
 $L_F V_T \frac{2}{3} L_F N_L \frac{1}{3} - N_L \in \frac{1}{3} \frac{0}{00} \frac{0}{00} R_s P_t$ $\blacksquare V_T N_L L_F V_T C_R \frac{1}{8} \in - \otimes$ $\frac{1}{3} N_L$ $\frac{0}{00} \frac{1}{3} N_L \frac{5}{8} C_R$ $L_F N_L \frac{1}{3} \otimes \frac{5}{8} L_F$ $\frac{1}{8}$
 $\frac{3}{8} \frac{5}{8} \otimes \frac{5}{8} \frac{0}{00} 1 H_T N^{\frac{5}{8}} - N_L$ $N_L \otimes C_R 1 V_T \otimes$ $N_L \frac{5}{8}$ $\frac{1}{3} H_T H_T 1 \in - N_L N^{\frac{5}{8}} - N_L$ $\frac{1}{8}$ $L_F N_L C_R \frac{1}{3} N_L \frac{5}{8} \otimes \frac{1}{8}$
 $H_T \frac{1}{3} C_R N_L - \frac{5}{8} C_R L_F$ $\frac{1}{8} \frac{1}{3} -$ $H_T 1 N_L \frac{5}{8} - N_L \in \frac{1}{3} \frac{0}{00} \frac{0}{00} R_s$ $\in N^{\frac{1}{3}} H_T C_R 1 \otimes \frac{5}{8}$ $1 H_T \frac{5}{8} C_R \frac{1}{3} N_L \in 1 - \frac{1}{3} \frac{0}{00}$
 $\frac{5}{8} \frac{7}{8} \frac{7}{8} \in \frac{1}{8} \in \frac{5}{8} - \frac{1}{8} \in \frac{5}{8} L_F$ $N_L \otimes C_R 1 V_T \otimes 1 V_T N_L$ $N_L \frac{5}{8}$ $\otimes \frac{1}{3} \frac{0}{00} V_T \frac{5}{8}$ $\frac{1}{8} \otimes \frac{1}{3} \in - P_t$ $"$ $\frac{2}{3} \frac{1}{3} \frac{0}{00} \frac{1}{3} - \frac{1}{8} \frac{5}{8} \frac{3}{8}$
 $H_T 1 C_R N_L \frac{7}{8} \frac{0}{00} \in 1$ $\frac{1}{3} H_T H_T C_R \frac{1}{3} \frac{1}{8} \otimes$ $\otimes \frac{1}{5} \frac{1}{8} L_F$ $\frac{1}{3}$ $\frac{0}{00} 1 - \otimes$ $\frac{1}{2} \frac{1}{3} R_s$ $\in -$ $\frac{5}{8} N^{\frac{1}{3}} H_T \frac{1}{3} - \frac{3}{8} \in - \otimes$ $L_F \frac{1}{3} \frac{0}{00} \frac{5}{8} L_F$
 $\frac{1}{3} - \frac{3}{8}$ $L_F \in N^{\frac{1}{3}} V_T \frac{0}{00} N_L \frac{1}{3} - \frac{5}{8} 1 V_T L_F \frac{0}{00} R_s$ $C_R \frac{5}{8} \frac{3}{8} V_T \frac{1}{8} \in - \otimes$ $C_R \in L_F \frac{0}{00} P_t$ $ff \otimes \in L_F$ $\frac{1}{8} 1 V_T \frac{0}{00} \frac{3}{8}$ $\frac{2}{3} \frac{5}{8}$ $\frac{2}{3} R_s$
 $H_T 1 L_F L_F \frac{5}{8} L_F L_F \in - \otimes$ $\frac{2}{3} C_R \frac{1}{3} - \frac{3}{8} \frac{5}{8} \frac{3}{8}$ $\otimes \frac{5}{8} - \frac{5}{8} C_R \in \frac{1}{8}$ $\frac{3}{8} C_R V_T \otimes L_F \frac{5}{8}$ $\frac{2}{3} C_R \frac{1}{3} - \frac{3}{8} \frac{5}{8} \frac{3}{8}$ $\frac{3}{8} C_R V_T \otimes L_F \frac{5}{8}$ $\frac{1}{3} - \frac{3}{8}$
 $V_T - \frac{2}{3} C_R \frac{1}{3} - \frac{3}{8} \frac{5}{8} \frac{3}{8}$ $\frac{3}{8} C_R V_T \otimes L_F$ $\frac{1}{2} \in N_L \otimes \in -$ $N_L \frac{5}{8}$ $L_F \frac{1}{3} N^{\frac{5}{8}}$ $H_T 1 C_R N_L \frac{7}{8} \frac{0}{00} \in 1 P_t$ $\ddagger -$
 $\frac{1}{3} \frac{3}{8} \frac{3}{8} \in N_L \in 1 - \frac{5}{8}$ $\frac{0}{00} \frac{5}{8} \frac{1}{3} C_R \frac{0}{00} R_s$ $\frac{3}{8} \frac{5}{8} \frac{7}{8} \in - \frac{5}{8} \frac{3}{8}$ $\frac{7}{8} 1 C_R \frac{1}{2} \frac{1}{3} C_R \frac{3}{8}$ $\frac{0}{00} \in - \frac{0}{00} \frac{1}{3} \otimes \frac{5}{8} L_F$ $\in -$ $N_L \frac{5}{8}$
 $L_F V_T H_T \frac{0}{00} R_s$ $\frac{1}{8} \otimes \frac{1}{3} \in -$ $\frac{1}{8} \frac{1}{3} -$ $\otimes \frac{1}{3} C_R - \frac{5}{8} C_R$ $\otimes C_R \frac{5}{8} \frac{1}{3} N_L \frac{5}{8} C_R$ $N^{\frac{1}{3}} \frac{1}{3} C_R \frac{0}{00} \frac{5}{8} N_L$ $L_F \otimes \frac{1}{3} C_R \frac{5}{8}$ $\in -$
 $\frac{3}{8} \in \frac{7}{8} \frac{7}{8} \frac{5}{8} C_R \frac{5}{8} - N_L$ $C_R \frac{5}{8} \otimes \in 1 - L_F$ $1 \otimes \frac{5}{8} C_R$ $N_L \frac{5}{8}$ $\frac{1}{8} 1 V_T C_R L_F \frac{5}{8}$ $\frac{1}{8}$ $N_L \frac{5}{8}$ $\frac{7}{8} 1 C_R \frac{5}{8} \frac{1}{8} \frac{1}{3} L_F N_L$
 $H_T \frac{5}{8} C_R \in \frac{1}{3} \frac{0}{00} P_t$

“ $L_F \in \frac{1}{3} - \frac{1}{8} V_T - N_L F_R \in \frac{5}{8} L_F$ $\otimes \frac{10}{100} \frac{3}{8} \frac{1}{3} \frac{0}{100} \frac{1}{3} F_R \otimes \frac{5}{8} \frac{1}{8} \otimes V_T - \frac{0}{100} \frac{17}{8} N_L \otimes \frac{5}{8} \frac{1}{3} \frac{1}{8} N_L \in \otimes \frac{5}{8}$
 $H_T \otimes \frac{1}{3} F_R N \otimes \frac{1}{3} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{100} \in - \otimes F_R \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - N_L F_N \otimes \frac{1}{3} F_R \frac{0}{100} \frac{5}{8} N_L$ ”

ff $\otimes \frac{5}{8} \otimes \frac{1}{3} L_F N_L N \otimes \frac{1}{3} \frac{0}{100} \frac{1}{3} F_R \in N_L R_S \frac{17}{8} \frac{1}{3} - N_L \in \forall \in - \frac{7}{8} \frac{0}{100} \frac{1}{3} N \otimes \frac{1}{3} N_L \frac{1}{3} F_R R_S \frac{1}{3} - \frac{3}{8}$
 $\frac{1}{3} - N_L \in \frac{2}{3} \in \frac{1}{3} N_L \in \frac{1}{8} \frac{3}{8} F_R V_T \otimes L_F \frac{1}{3} F_R \frac{5}{8} N \otimes \frac{1}{3} - V_T \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L V_T F_R \frac{5}{8} \frac{3}{8} \in -$ “ $L_F \in \frac{1}{3} - \frac{1}{3} N_L \in \frac{1}{3} - L_F$
 $L_F V_T \frac{1}{8} \otimes \frac{1}{3} L_F - \otimes \in - \frac{1}{3} \frac{1}{3} - \frac{3}{8} \pm - \frac{3}{8} \in \frac{1}{3} P_t \square \frac{1}{3} V_T \otimes \frac{0}{100} R_S \oslash f^2 N_L \otimes \frac{17}{8} N_L \otimes \frac{5}{8} N_L \frac{1}{3} N_L \frac{1}{3} \frac{0}{100}$
 $\frac{1}{3} - N_L \in \frac{2}{3} \in \frac{1}{3} N_L \in \frac{1}{8} \frac{1}{3} \pm L_F \frac{1}{3} F_R \frac{5}{8} N \otimes \frac{1}{3} \frac{3}{8} \frac{5}{8} \in - N_L \otimes \frac{5}{8} N_L \forall \frac{1}{8} V_T - N_L F_R \in \frac{5}{8} L_F \frac{1}{3} - \frac{3}{8} N_L \otimes \frac{5}{8} -$
 $\frac{1}{3} V_T N_L L_F \frac{1}{3} V_T F_R \frac{1}{8} \frac{5}{8} \frac{3}{8} N_L \frac{1}{3} \frac{3}{8} \frac{5}{8} \otimes \frac{5}{8} \frac{0}{100} \frac{1}{3} H_T \frac{5}{8} \frac{3}{8} \frac{1}{8} V_T - N_L F_R \in \frac{5}{8} L_F \in -$, $V_T F_R \frac{1}{3} H_T \frac{5}{8} \frac{1}{3} - \frac{3}{8} \otimes \frac{1}{3} F_R N_L \otimes$
“ $N \otimes \frac{5}{8} F_R \in \frac{1}{8} \frac{1}{3} P_t$ ”

ff $\otimes \frac{5}{8} \frac{0}{100} \frac{1}{3} \forall \frac{5}{8} F_R \frac{0}{100} \frac{1}{3} \frac{2}{3} \frac{1}{3} F_R \frac{1}{8} L_F N_L \frac{1}{3} - \frac{3}{8} \frac{1}{3} \frac{2}{3} V_T - \frac{3}{8} \frac{1}{3} - N_L F_R \frac{1}{3} \forall N \otimes \frac{1}{3} N_L \frac{5}{8} F_R \in \frac{1}{3} \frac{0}{100}$
 $\frac{1}{3} \otimes \frac{1}{3} \in \frac{0}{100} \frac{1}{3} \frac{2}{3} \frac{3}{8} \in \frac{0}{100} \in N_L R_S - \frac{5}{8} \frac{5}{8} \frac{3}{8} \frac{5}{8} \frac{3}{8} N_L \frac{1}{3} N \otimes \frac{1}{3} \frac{0}{100} \frac{5}{8} \frac{1}{3} \pm \frac{1}{3} F_R \frac{5}{8} N_L \otimes \frac{5}{8} \frac{1}{8} F_R \in N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{100}$
 $\frac{7}{8} \frac{1}{3} \frac{1}{8} N_L \frac{1}{3} F_R L_F F_R \frac{5}{8} L_F H_T \frac{1}{3} - L_F \in \frac{2}{3} \frac{0}{100} \frac{5}{8} \frac{7}{8} \frac{1}{3} F_R N_L \otimes \frac{5}{8} N \otimes \frac{1}{3} L_F L_F \in \otimes \frac{5}{8} \otimes F_R \frac{1}{3} \forall N_L \otimes \in - N_L \otimes \frac{5}{8} \frac{1}{3} -$
“ $\frac{1}{3} \pm N \otimes \frac{1}{3} F_R \frac{0}{100} \frac{5}{8} N_L P_t \pm - \frac{1}{3} \frac{3}{8} \frac{3}{8} \in N_L \in \frac{1}{3} - N_L \frac{1}{3} N_L \otimes \in L_F \oslash F_R \frac{5}{8} \otimes V_T \frac{0}{100} \frac{1}{3} N_L \frac{1}{3} F_R R_S L_F V_T H_T H_T \frac{1}{3} F_R N_L$
 $\frac{1}{3} - \frac{3}{8} \otimes \frac{1}{3} \otimes \frac{5}{8} F_R - N \otimes \frac{5}{8} - N_L \frac{5}{8} - \frac{1}{8} \frac{1}{3} V_T F_R \frac{1}{3} \otimes \frac{5}{8} N \otimes \frac{5}{8} - N_L N_L \frac{1}{3} \frac{5}{8} L_F N_L \frac{1}{3} \frac{2}{3} \frac{0}{100} \in L_F \otimes \frac{1}{3} \pm$
 $N \otimes \frac{1}{3} - V_T \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L V_T F_R \in - \otimes \otimes V_T \frac{2}{3} L_F \frac{2}{3} R_S \forall \frac{1}{3} R_S \frac{17}{8} \frac{7}{8} \frac{1}{3} \otimes \frac{1}{3} F_R \frac{1}{3} \frac{2}{3} \frac{0}{100} \frac{5}{8} N_L \frac{1}{3} \forall$
 $H_T \frac{10}{100} \in \frac{1}{8} \in \frac{5}{8} L_F \frac{1}{3} F_R \frac{5}{8} \otimes \frac{5}{8} \frac{0}{100} H_T \in - \otimes \frac{3}{8} F_R \in \otimes \frac{5}{8} N_L \otimes \frac{5}{8} \frac{1}{3} - \frac{1}{3} \pm N \otimes \frac{1}{3} F_R \frac{0}{100} \frac{5}{8} N_L P_t$ ff $\otimes \frac{5}{8}$
 $\frac{0}{100} \frac{1}{3} F_R \otimes \frac{5}{8} H_T \frac{1}{3} N_L \in \frac{5}{8} - N_L H_T \frac{1}{3} H_T V_T \frac{0}{100} \frac{1}{3} N_L \in \frac{1}{3} - \frac{2}{3} \frac{1}{3} L_F \frac{5}{8} N_L \otimes \frac{1}{3} N_L \frac{1}{8} \frac{1}{3} - L_F V_T N \otimes \frac{5}{8} L_F - \frac{1}{3} - \forall$
 $\frac{1}{8} \frac{1}{3} - N_L F_R \frac{10}{100} \frac{0}{100} \frac{5}{8} \frac{3}{8} \frac{3}{8} F_R V_T \otimes L_F \frac{1}{3} \otimes \frac{5}{8} F_R N_L \otimes \frac{5}{8} \frac{1}{8} V_T - N_L \frac{5}{8} F_R \in L_F \frac{1}{3} \frac{0}{100} L_F \frac{1}{3} \frac{0}{100} \frac{5}{8} R_S$
 $\frac{7}{8} \frac{1}{3} \frac{1}{8} N_L \frac{1}{3} F_R \frac{0}{100} \frac{5}{8} \frac{1}{3} \frac{3}{8} \in - \otimes N_L \frac{1}{3} N_L \otimes \frac{5}{8} \frac{2}{3} \frac{1}{3} N \otimes \in - \frac{1}{3} - \in - \forall \otimes \frac{1}{3} V_T L_F \frac{5}{8} \frac{1}{3} \pm$
 $\frac{1}{8} \frac{1}{3} - L_F V_T N \otimes \frac{5}{8} H_T N_L \in \frac{1}{3} - P_t$

$\frac{1}{3} \in \otimes \frac{5}{8} F_R \otimes F_R \frac{1}{3} \forall N_L \otimes \in - N_L \otimes \frac{5}{8} \frac{1}{3} \frac{1}{8} N_L \in \otimes \frac{5}{8} H_T \otimes \frac{1}{3} F_R N \otimes \frac{1}{3} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{100}$
 $\in - \otimes F_R \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - N_L L_F N \otimes \frac{1}{3} F_R \frac{0}{100} \frac{5}{8} N_L$

$\frac{1}{3} \frac{1}{3} \frac{0}{100} N_L \otimes \frac{1}{8} \frac{1}{3} F_R \frac{5}{8} L_F H_T \frac{5}{8} - \frac{3}{8} \in - \otimes \otimes \frac{1}{3} L_F \forall \in N_L - \frac{5}{8} L_F L_F \frac{5}{8} \frac{3}{8} \frac{1}{8} \frac{1}{3} - N_L \in - V_T \frac{5}{8} \frac{3}{8}$
 $\otimes F_R \frac{1}{3} \forall N_L \otimes \frac{7}{8} \frac{1}{3} F_R L_F \frac{1}{3} N \otimes \frac{5}{8} N_L \in N \otimes \frac{5}{8} - \frac{1}{3} \forall P_t , \otimes \frac{5}{8} - N_L \otimes \frac{1}{3} V_T \otimes N_L \otimes \frac{5}{8} H_T F_R \frac{1}{3} H_T \frac{1}{3} F_R N_L \in \frac{1}{3} - \frac{17}{8}$
 $\otimes \frac{5}{8} \frac{1}{3} \frac{0}{100} N_L \otimes \frac{1}{8} \frac{1}{3} F_R \frac{5}{8} L_F H_T \frac{5}{8} - \frac{3}{8} \in - \otimes \in - N_L \otimes \frac{5}{8} \frac{1}{3} - \frac{1}{3} F_R \frac{5}{8} \otimes \in \frac{1}{3} - \in L_F$
 $\frac{1}{8} \frac{1}{3} N \otimes \frac{5}{8} H_T \frac{1}{3} F_R \frac{1}{3} N_L \in \otimes \frac{5}{8} \frac{0}{100} R_S \frac{0}{100} \frac{1}{3} \forall \oslash N_L \otimes \frac{5}{8} \otimes F_R \frac{1}{3} \forall N_L \otimes \frac{5}{8} F_R \frac{1}{3} N_L \frac{5}{8} \in - N_L \otimes \in L_F$
 $L_F N_L F_R \frac{1}{3} N_L \frac{5}{8} \otimes \in \frac{1}{8} F_R \frac{5}{8} \otimes \in \frac{1}{3} - \otimes \frac{1}{3} L_F \frac{1}{3} V_T N_L H_T \frac{1}{3} \frac{1}{8} \frac{5}{8} \frac{3}{8} N_L \otimes \frac{1}{3} N_L \frac{17}{8} N \otimes \frac{1}{3} N_L V_T F_R \frac{5}{8}$
 $N \otimes \frac{1}{3} F_R \frac{0}{100} \frac{5}{8} N_L L_F \in - \otimes \frac{1}{3} F_R N_L \otimes \frac{1}{3} \frac{0}{100} \frac{5}{8} F_R \in \frac{1}{8} \frac{1}{3} \frac{1}{3} - \frac{3}{8} , V_T F_R \frac{1}{3} H_T \frac{5}{8} P_t \square \in L_F \in - \otimes$
 $\otimes \frac{5}{8} \frac{1}{3} \frac{0}{100} N_L \otimes \frac{1}{8} \frac{1}{3} F_R \frac{5}{8} L_F H_T \frac{5}{8} - \frac{3}{8} \in - \otimes \otimes \frac{1}{3} L_F \frac{0}{100} \frac{5}{8} \frac{3}{8} N_L \frac{1}{3} F_V \frac{1}{3} \frac{0}{100} \in N_L R_S \otimes \frac{5}{8} \frac{1}{3} \frac{0}{100} N_L \otimes \frac{1}{8} \frac{1}{3} F_R \frac{5}{8}$
 $\frac{2}{3} \frac{5}{8} \frac{1}{8} \frac{1}{3} N \otimes \in - \otimes \frac{1}{3} \frac{1}{8} \frac{1}{8} \frac{5}{8} L_F L_F \in \frac{2}{3} \frac{0}{100} \frac{5}{8} \frac{1}{3} \frac{0}{100} \frac{1}{3} - \otimes \forall \in N_L \otimes \frac{1}{3} \otimes \in \otimes \frac{5}{8} F_R \frac{3}{8} \frac{5}{8} N \otimes \frac{1}{3} - \frac{3}{8} \frac{7}{8} \frac{1}{3} F_R$

$H_T \odot \frac{1}{3} F_R N^{\frac{1}{3}} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{00}$ $H_T F_R \frac{13}{8} V_T \frac{1}{8} N_L F$ $\frac{1}{3} \frac{1}{8} F_R \frac{1}{4} F$ “■”— P_t $ff \odot \frac{5}{8}$
 $H_T \odot \frac{1}{3} F_R N^{\frac{1}{3}} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{00} F$ $\frac{1}{8} 1 - F V_T N^{\frac{5}{8}} \frac{3}{8}$ $\odot \frac{5}{8} F_R \frac{5}{8}$ $\frac{1}{3} F_R \frac{5}{8}$ $N^{\frac{1}{3}} F_R N_L \frac{0}{00} R_s$ $H_T F_R \frac{13}{8} V_T \frac{1}{8} \frac{5}{8} \frac{3}{8}$
 $\in -$ $1 - F \odot \frac{1}{3} F_R \frac{5}{8}$ $N^{\frac{1}{3}} \frac{1}{3} - V_T \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L V_T F_R \in - \odot$ $V_T \in N_L F P_t$ $\odot V_T F_R N_L \odot \frac{5}{8} F_R N^{\frac{1}{3}} F_R \frac{5}{8} \Delta$ $\frac{1}{8} 1 - N_L F_R \frac{1}{3} \frac{1}{8} N_L$
 $N^{\frac{1}{3}} \frac{1}{3} - V_T \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L V_T F_R \in - \odot$ $1 F_R \odot \frac{1}{3} \in MD \frac{1}{3} N_L \in 1 - F$ $\frac{1}{3} F_R \frac{5}{8}$ $\% \frac{5}{8} R_s$ $1 V_T N_L F \frac{1}{4} V_T F_R \frac{1}{8} \in - \odot$
 $\frac{1}{3} \frac{0}{00} \frac{0}{00} \in \frac{5}{8} F$ $\frac{7}{8} 1 F_R$ $H_T \odot \frac{1}{3} F_R N^{\frac{1}{3}} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{00}$ $\frac{1}{8} 1 N^{\frac{5}{8}} H_T \frac{1}{3} \in \frac{5}{8} F$ $N_L \odot \frac{1}{3} N_L$ $F V_T H_T \frac{0}{00} R_s$
 $N_L \odot \frac{5}{8} \in F_R$ $\frac{1}{3} F_R \frac{5}{8} F$ $N_L \frac{1}{3} \odot \frac{1}{3} F_R N_L \odot$ “ $N^{\frac{5}{8}} F_R \in \frac{1}{8} \frac{1}{3}$ $\frac{1}{3} - \frac{3}{8}$ $\frac{1}{3} V_T F_R \frac{1}{4} H_T \frac{5}{8} P_t$

$\odot 1 - \frac{1}{8} \frac{1}{8} 1 - N_L F_R \frac{1}{00} \frac{0}{00} \frac{5}{8} \frac{3}{8}$ $F V_T \frac{2}{3} F_R N_L \frac{1}{3} - \frac{1}{8} \frac{5}{8} F$ $\odot \frac{1}{3} \odot \frac{5}{8}$ $\frac{1}{3}$ $\odot \in \odot \odot$ “□□” $\frac{1}{3} - \frac{3}{8}$ $\frac{1}{8} \frac{1}{3} -$ $\frac{2}{3} \frac{5}{8}$
 $N_L \frac{1}{3} F_R \odot \frac{5}{8} N_L \frac{5}{8} \frac{3}{8}$

$\odot 1 - \frac{1}{8} \frac{1}{8} 1 - N_L F_R \frac{1}{00} \frac{0}{00} \frac{5}{8} \frac{3}{8}$ $F V_T \frac{2}{3} F_R N_L \frac{1}{3} - \frac{1}{8} \frac{5}{8} F$ $\frac{1}{3} \frac{1}{8} \frac{1}{8} 1 V_T - N_L \frac{5}{8} \frac{3}{8}$ $\frac{7}{8} 1 F_R$ $\frac{1}{3}$ $\odot \frac{1}{3} \frac{0}{00} V_T \frac{5}{8}$
 $\frac{17}{8}$ $N^{\frac{1}{3}} F_R \frac{5}{8}$ $N_L \odot \frac{1}{3} -$ $ffi - \bullet$ $\odot \frac{1}{4}$ “—” $\in -$ $N_L \odot \frac{5}{8}$ “■”— $\frac{1}{3} \frac{1}{8} N_L \in \odot \frac{5}{8}$
 $H_T \odot \frac{1}{3} F_R N^{\frac{1}{3}} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{00}$ $\in - \odot F_R \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - N_L F$ $N^{\frac{1}{3}} F_R \% \frac{5}{8} N_L$ $\in -$ $\frac{1}{2} \frac{20}{00}$ $\frac{1}{3} - \frac{3}{8}$ $\frac{1}{3} F_R \frac{5}{8}$
 $\frac{7}{8} 1 F_R \frac{5}{8} \frac{1}{8} \frac{1}{3} F_R N_L$ $N_L \frac{1}{3} \frac{2}{3} \frac{5}{8}$ $\frac{1}{3} F_R N_L \odot$ $\frac{1}{3} \frac{0}{00} N^{\frac{1}{3}} F_R N_L$ $ffi - \bullet$ \odot “—” $\frac{2}{3} R_s$ $\frac{1}{2} \frac{20}{00}$ $\frac{5}{8} - \frac{3}{8}$ $\frac{1}{3} F_R N_L \odot$ $\frac{1}{3}$
 $\odot F_R \frac{1}{3} F_R N_L \odot$ $F_R \frac{1}{3} N_L \frac{5}{8}$ $\frac{17}{8}$ $\odot P_t \frac{2}{3}$ $R_s \frac{5}{8} \frac{1}{3} F_R$ $1 -$ $R_s \frac{5}{8} \frac{1}{3} F_R P_t$ $- R_s$ $N_L \odot \frac{5}{8}$ $\frac{5}{8} - \frac{3}{8}$ $\frac{17}{8}$ $\frac{1}{2} \frac{21}{2} \frac{2}{2} \Delta$ $- 1 - \frac{1}{8}$
 $\frac{1}{8} 1 - N_L F_R \frac{1}{00} \frac{0}{00} \frac{5}{8} \frac{3}{8}$ $F V_T \frac{2}{3} F_R N_L \frac{1}{3} - \frac{1}{8} \frac{5}{8} F$ $F \odot \frac{1}{3} V_T \frac{0}{00} \frac{3}{8}$ $\frac{2}{3} \frac{5}{8}$ $\frac{1}{3} F_R N_L \odot$ $ffi - \bullet$ “—” $1 -$
 $\frac{1}{3} \frac{1}{8} \frac{1}{8} 1 V_T - N_L$ $\frac{17}{8}$ $\frac{1}{3}$ “□□” $\frac{17}{8}$ $\odot P_t \frac{2}{3} \frac{2}{3} \Delta$ $F_R \frac{5}{8} H_T F_R \frac{5}{8} F \frac{5}{8} - N_L \in - \odot$ $\frac{1}{3}$ $H_T \frac{1}{3} N_L \frac{5}{8} - N_L \in \frac{1}{3} \frac{0}{00}$
 $\odot \frac{10}{00} \frac{3}{8} N^{\frac{1}{3}} \in - \frac{5}{8}$ $\in -$ $N_L \odot \frac{5}{8}$ $\frac{1}{3} \frac{1}{8} N_L \in \odot \frac{5}{8}$ $H_T \odot \frac{1}{3} F_R N^{\frac{1}{3}} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{00}$ $\in - \odot F_R \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - N_L F$
 $N^{\frac{1}{3}} F_R \% \frac{5}{8} N_L$ $N_L \odot \frac{1}{3} N_L$ $\frac{1}{8} \frac{1}{3} -$ $F \frac{1}{8} \frac{1}{3} F_R \frac{1}{8} \frac{5}{8} \frac{0}{00} R_s$ $\frac{2}{3} \frac{5}{8}$ $\in \odot - 1 F_R \frac{5}{8} \frac{3}{8} P_t$

“ $\frac{1}{8} N_L \in \odot \frac{5}{8}$ ■ $\odot \frac{1}{3} F_R N^{\frac{1}{3}} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{00}$ ‡ $- \odot F_R \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - N_L$ ● $\frac{1}{3} F_R \% \frac{5}{8} N_L \frac{3}{4}$
□ $\frac{0}{00} \frac{12}{3} \frac{1}{3} \frac{0}{00}$ “ $\in MD \frac{5}{8} \Delta$ $ff F_R \frac{5}{8} - \frac{3}{8} F \Delta$ “ $- 1 N^{\frac{5}{8}} H_T \frac{5}{8} N_L \in N_L \in \odot \frac{5}{8} \Delta$ ‡ $\in F_R N_L \frac{1}{3} F_R \in \frac{1}{8} \frac{1}{3} \frac{0}{00}$ ¶
○ $1 F_R \frac{5}{8} \frac{1}{8} \frac{1}{3} F_R N_L$ “ $- \frac{1}{3} \frac{0}{00} R_s F \in F \Delta$ $\frac{1}{2} \frac{20}{00} \frac{1}{2} \frac{21}{2} \frac{2}{2} P_t$ □ $\in F \in - \odot$ $H_T F_R \frac{5}{8} \odot \frac{1}{3} \frac{0}{00} \frac{5}{8} - \frac{1}{8} \frac{5}{8}$ $\frac{17}{8}$
 $\frac{1}{8} \odot F_R \frac{1}{3} - \in \frac{1}{8}$ $\frac{1}{3} - \frac{3}{8}$ $\in - \frac{7}{8} \frac{5}{8} \frac{1}{8} N_L \in \frac{1}{4} F$ $\frac{3}{8} \in F \frac{5}{8} \frac{1}{3} F \frac{5}{8} F$ $F V_T \frac{1}{8} \odot$ $\frac{1}{3} F$ $\frac{3}{8} \in \frac{1}{3} \frac{2}{3} \frac{5}{8} N_L \frac{5}{8} F \Delta$
 $\frac{1}{8} \frac{1}{3} - \frac{1}{8} \frac{5}{8} F_R \Delta$ $\frac{1}{3} F_R N_L \odot F_R \in N_L \in F \Delta$ $\frac{1}{3} F_R N_L \odot N^{\frac{1}{3}}$ $\frac{1}{8} \odot F_R \frac{1}{3} - \in \frac{1}{8}$ $\frac{12}{3} F_R N_L F_R V_T \frac{1}{8} N_L \in \odot \frac{5}{8}$
 $H_T V_T \frac{0}{00} N^{\frac{1}{3}} - \frac{1}{3} F_R R_s$ $\frac{3}{8} \in F \frac{5}{8} \frac{1}{3} F \frac{5}{8}$ ‡ $- \bullet \frac{2}{3} \frac{1}{3} - \frac{5}{8}$ ¶ $\% \frac{1}{3} \in - N_L$ $\in - \frac{7}{8} \frac{5}{8} \frac{1}{8} N_L \in 1 - F \Delta$
 $H_T - \frac{5}{8} V_T N^{\frac{1}{3}} - \in \frac{1}{3}$ $\frac{5}{8} N_L \frac{1}{8} P_t$ $\frac{1}{3} F_R N_L \odot$ $\in - \frac{1}{8} F_R \frac{5}{8} \frac{1}{3} F \frac{5}{8} \frac{3}{8}$ $\odot \frac{5}{8} F_R \in \frac{1}{3} N_L F_R \in \frac{1}{8}$ $H_T \frac{1}{4} V_T \frac{0}{00} \frac{1}{3} N_L \in 1 -$
 $\frac{1}{3} - \frac{3}{8}$ $F V_T F_R \odot \frac{5}{8}$ $\in -$ $\frac{3}{8} \frac{5}{8} \odot \frac{5}{8} \frac{0}{00} H_T N^{\frac{5}{8}} - N_L$ $\frac{17}{8}$ $- \frac{5}{8} \frac{1}{3} F_R V_T \odot F$ $V_T F \in - \odot$ “ $\frac{1}{8} N_L \in \odot \frac{5}{8}$ ”
■ $\odot \frac{1}{3} F_R N^{\frac{1}{3}} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{00}$ ‡ $- \odot F_R \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - N_L$ $\frac{7}{8} 1 F_R$ $\frac{7}{8} \in \odot \odot N_L \in - \odot$ $\frac{1}{3} \odot \frac{1}{3} \in - F_R N_L$ $F V_T \frac{1}{8} \odot$
 $\frac{3}{8} \in F \frac{5}{8} \frac{1}{3} F \frac{5}{8} F$ $\frac{1}{3} F_R \frac{5}{8}$ $F \frac{1}{3} N^{\frac{5}{8}}$ $\in N^{\frac{5}{8}} H_T \frac{1}{3} F_R N_L \frac{1}{3} - N_L$ $\frac{7}{8} \frac{1}{3} \frac{1}{8} N_L \frac{1}{3} F_R$ $\frac{3}{8} F_R \in \odot \in - \odot$ $N_L \odot \frac{5}{8}$
 $\odot F_R \frac{1}{3} F_R N_L \odot$ $\frac{17}{8}$ $N_L \odot \in F$ $N^{\frac{1}{3}} F_R \% \frac{5}{8} N_L P_t$

$$\begin{aligned} & \text{"} \frac{1}{8} N_L \in \oplus \frac{5}{8} \quad \blacksquare \frac{1}{3} \Gamma_R N^{\frac{2}{3}} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{00} \quad \ddagger - \ominus \Gamma_R \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - N_L \quad N^{\frac{2}{3}} \frac{1}{3} \Gamma_R \frac{c}{u} \frac{5}{8} N_L \quad \in \mathbb{F} \\ & \mathbb{F} \frac{5}{8} \ominus N^{\frac{5}{8}} \frac{5}{8} - N_L \frac{5}{8} \frac{3}{8} \quad 1 - N_L \ominus \frac{5}{8} \quad N_L R_S H_T \frac{5}{8} \quad \frac{1}{8} \quad N^{\frac{2}{3}} \frac{1}{3} - V_T \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L V_T \Gamma_R \frac{5}{8} \Gamma_R \mathbb{E} \quad N_L R_S H_T \frac{5}{8} \quad \frac{1}{8} \\ & \mathbb{F} R_S - N_L \ominus \frac{5}{8} \mathbb{F} \in \mathbb{F} \mathbb{E} \quad N_L R_S H_T \frac{5}{8} \quad \frac{1}{8} \quad \frac{3}{8} \Gamma_R V_T \ominus \mathbb{E} \quad N_L \ominus \frac{5}{8} \Gamma_R \frac{1}{3} H_T \frac{5}{8} V_T N_L \in \frac{1}{8} \quad \frac{1}{3} H_T H_T \frac{0}{00} \in \frac{1}{8} \frac{1}{3} N_L \in 1 - \mathbb{E} \\ & \frac{1}{3} - \frac{3}{8} \quad \Gamma_R \frac{5}{8} \ominus \in 1 - P_t \quad \text{"} \frac{1}{8} N_L \in \oplus \frac{5}{8} \quad \blacksquare \frac{1}{3} \Gamma_R N^{\frac{2}{3}} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \frac{0}{00} \quad \ddagger - \ominus \Gamma_R \frac{5}{8} \frac{3}{8} \in \frac{5}{8} - N_L \quad N^{\frac{2}{3}} \frac{1}{3} \Gamma_R \frac{c}{u} \frac{5}{8} N_L \\ & \in \mathbb{F} \quad \frac{1}{8} \frac{0}{00} \frac{1}{3} \mathbb{F} \mathbb{F} \in \frac{7}{8} \in \frac{5}{8} \frac{3}{8} \quad 1 - N_L \ominus \frac{5}{8} \quad \frac{2}{3} \frac{1}{3} \mathbb{F} \in \mathbb{F} \quad \frac{1}{8} \quad N_L R_S H_T \frac{5}{8} \quad \frac{1}{8} \quad N^{\frac{2}{3}} \frac{1}{3} - V_T \frac{7}{8} \frac{1}{3} \frac{1}{8} N_L V_T \Gamma_R \frac{5}{8} \Gamma_R \end{aligned}$$

$\frac{1}{3}R^{5/8} \nmid -\Psi^{01}V_T F^{5/8} \mathcal{L} \quad \frac{1}{3}-\frac{3}{8} \quad \frac{1}{8}1-N_L R^{1/3} \frac{1}{8}N_L \quad \frac{2}{3} \frac{1}{3} F^{5/8} \quad N^{01/3}-V_T \frac{7}{8} \frac{1}{3} \frac{1}{8}N_L V_T R \in -\mathcal{O}P_t \quad \blacksquare - \quad N_L^{05/8}$
 $\frac{2}{3} \frac{1}{3} F \in L_F \quad \frac{17}{8} \quad N_L R^S H^{5/8} \quad \frac{17}{8} \quad L_F R^S - N_L^{05/8} F \in L_F \mathcal{L} \quad N_L^{05/8} \quad N^{01/3} R^C u^{5/8} N_L \quad \in L_F \quad L_F^{5/8} \mathcal{O} N^{05/8} - N_L^{5/8} \frac{3}{8}$
 $\frac{1}{3} F \quad L_F R^S - N_L^{05/8} N_L \in \frac{1}{8} \quad \frac{1}{8}^{05/8} N^0 \in \frac{1}{8} \frac{1}{3} \mathcal{O} \mathcal{O} \mathcal{L} \quad \frac{1}{8} \mathcal{O} \mathcal{O} \frac{1}{3} F F \in \frac{1}{8} \frac{1}{3} \mathcal{O} \mathcal{O} \quad \frac{7}{8} \frac{5}{8} R N^{05/8} - N_L \frac{1}{3} N_L \in 1 - \mathcal{L}$
 $\frac{2}{3} \in 1 N_L^{5/8} \frac{1}{8} \mathcal{O} f \frac{2}{3} \in 1 \mathcal{O} \mathcal{O} \frac{1}{8} \frac{1}{3} \mathcal{O} \mathcal{O} \mathcal{L} \quad H^T \mathcal{O} \mathcal{O} \frac{1}{3} - N_L \quad \frac{5}{8} N N_L R^{1/3} \frac{1}{8} N_L F \mathcal{L} \quad \frac{1}{3} - \frac{3}{8} \quad 1 N_L^{05/8} R^L F P_t$

$\blacksquare - \quad N_L^{05/8} \quad \frac{2}{3} \frac{1}{3} F \in L_F \quad \frac{17}{8} \quad N_L R^S H^{5/8} \quad \frac{17}{8} \quad \frac{3}{8} R V_T \mathcal{O} L_F \mathcal{L} \quad \mathcal{O} \mathcal{O} \mathcal{O} \frac{12}{8} \frac{1}{3} \mathcal{O} \mathcal{O} \quad " \frac{1}{8} N_L \in \oplus^{5/8}$
 $\blacksquare \mathcal{O} \frac{1}{3} R N^{01/3} \frac{1}{8} \frac{5}{8} V_T N_L \in \frac{1}{8} \frac{1}{3} \mathcal{O} \mathcal{O} \quad \nmid - \mathcal{O} R^{5/8} \frac{3}{8} \in \frac{5}{8} - N_L \quad N^{01/3} R^C u^{5/8} N_L \quad \in L_F \quad \frac{3}{8} \in \oplus \in \frac{3}{8} \frac{5}{8} \frac{3}{8} \quad \in - N_L 1$
 $\in - - 1 \oplus \frac{1}{3} N_L \in \oplus^{5/8} \quad H_T R^{5/8} F \frac{1}{8} R \in H_T N_L \in 1 - \quad \frac{3}{8} R V_T \mathcal{O} L_F \mathcal{L} \quad \mathcal{O}^{5/8} - \frac{5}{8} R \in \frac{1}{8} \quad H_T R^{5/8} L_F \frac{1}{8} R \in H_T N_L \in 1 -$
 $\frac{3}{8} R V_T \mathcal{O} L_F \quad \frac{1}{3} - \frac{3}{8} \quad 1 N_L^{05/8} R^L F P_t \quad \blacksquare - \quad N_L^{05/8} \quad \frac{2}{3} \frac{1}{3} F \in L_F \quad \frac{17}{8} \quad N_L^{05/8} R^{1/3} H^{5/8} V_T N_L \in \frac{1}{8}$
 $\frac{1}{3} H_T H^T \mathcal{O} \mathcal{O} \in \frac{1}{8} \frac{1}{3} N_L \in 1 - \quad \frac{1}{8} \frac{1}{3} R^{3/8} \in 1 \oplus \frac{1}{3} F \frac{1}{8} V_T \mathcal{O} \mathcal{O} \frac{1}{3} R \quad \frac{3}{8} R V_T \mathcal{O} L_F \mathcal{L} \quad N^{05/8} N_L \frac{1}{3} \frac{2}{3} \mathcal{O} \mathcal{O} \in \frac{1}{8}$
 $\frac{3}{8} \in L_F 1 R^{3/8} \frac{5}{8} R^L F \quad \frac{3}{8} R V_T \mathcal{O} L_F \mathcal{L} \quad 1 - \frac{1}{8} \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} R^S \quad \frac{3}{8} R V_T \mathcal{O} L_F \mathcal{L} \quad \frac{1}{8} \frac{5}{8} - N_L R^{1/3} \mathcal{O} \mathcal{O} \quad - \frac{5}{8} R \oplus 1 V_T F$
 $L_F R^S F N_L^{5/8} N^0 \quad \frac{3}{8} R V_T \mathcal{O} L_F \mathcal{L} \quad \frac{1}{3} - N_L \in \Psi \in - \frac{7}{8} \frac{5}{8} \frac{1}{8} N_L \in \oplus^{5/8} \quad \frac{3}{8} R V_T \mathcal{O} L_F \mathcal{L} \quad R^{5/8} L_F H^T \in R^{1/3} N_L 1 R^S$
 $\frac{3}{8} \in L_F \frac{5}{8} \frac{1}{3} F \frac{5}{8} L_F \quad \frac{3}{8} R V_T \mathcal{O} L_F \mathcal{L} \quad \frac{1}{3} - \frac{3}{8} \quad 1 N_L^{05/8} R^L F P_t$

$-\frac{1}{3} R^S \frac{5}{8} R \quad \frac{1}{3} - \frac{3}{8} \quad - V_T R^{1/3} \frac{3}{8} \frac{5}{8} \oplus \quad L_F \in \mathcal{O} - \frac{5}{8} \frac{3}{8} \quad R^{5/8} L_F \frac{5}{8} \frac{1}{3} R^{1/8} \mathcal{O}$
 $\frac{1}{8} \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} \frac{1}{3} \frac{2}{3} \frac{1}{3} R^{1/3} N_L \in 1 - \quad \frac{1}{3} - \frac{3}{8} \quad \mathcal{O} \mathcal{O} \in \frac{1}{8} \frac{5}{8} - L_F \frac{5}{8} \quad \frac{1}{3} \mathcal{O} R^{5/8} \frac{5}{8} N^{05/8} - N_L \quad N_L 1 \quad \frac{3}{8} \frac{5}{8} \oplus \frac{5}{8} \mathcal{O} \mathcal{O} 1 H^T$
 $- 1 \oplus \frac{5}{8} \mathcal{O} \mathcal{O} \quad - f f \nmid \mathcal{O} \square \quad \frac{1}{3} - N_L \frac{1}{3} \mathcal{O} 1 - \in L_F N_L F \quad \frac{1}{3} \frac{1}{8} R^{1/3} L_F \in - \frac{3}{8} \in \frac{1}{8} \frac{1}{3} N_L \in 1 - L_F$

$\mathcal{O}^{5/8} W L_F \frac{3}{4} \quad \frac{1}{2} \frac{1}{4} \quad \bullet \frac{1}{3} R^{1/8} \mathcal{O} \quad \frac{1}{2} \frac{1}{2} \frac{1}{2} \mathcal{L} \quad - \frac{1}{3} R^S \frac{5}{8} R \quad \frac{1}{3} - \frac{3}{8} \quad - V_T R^{1/3} \frac{3}{8} \frac{5}{8} \oplus \quad \blacksquare \oplus N_L P_t \quad R N_L \frac{3}{8} P_t \mathcal{L}$
 $\frac{1}{3} \quad \frac{3}{8} R V_T \mathcal{O} \quad \frac{3}{8} \in L_F \frac{1}{8} 1 \oplus^{5/8} R R^S \quad \frac{1}{8} 1 N^{01} H^T \frac{1}{3} - R^S \quad \frac{2}{3} \frac{1}{3} F^{5/8} \frac{3}{8} \quad \in - \quad \nmid - \frac{3}{8} \in \frac{1}{3} \mathcal{L} \quad \mathcal{O} \frac{1}{3} F \quad \frac{2}{3} \frac{5}{8} \frac{5}{8} -$
 $\frac{1}{3} - - 1 V_T - \frac{1}{8} \frac{5}{8} \frac{3}{8} \quad \frac{1}{3} \quad R^{5/8} L_F \frac{5}{8} \frac{1}{3} R^{1/8} \mathcal{O} \quad \frac{1}{8} \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} \frac{1}{3} \frac{2}{3} \frac{1}{3} R^{1/3} N_L \in 1 - \quad \frac{1}{3} - \frac{3}{8} \quad \mathcal{O} \mathcal{O} \in \frac{1}{8} \frac{5}{8} - L_F \frac{5}{8}$
 $\frac{1}{3} \mathcal{O} R^{5/8} \frac{5}{8} N^{05/8} - N_L \quad \frac{7}{8} 1 R \quad - N_L \in N^0 V_T \mathcal{O} \mathcal{O} \frac{1}{3} N_L 1 R \quad \frac{17}{8} \quad \nmid - N_L \frac{5}{8} R^{7/8} \frac{5}{8} R^1 - \quad \square^{5/8} - \frac{5}{8} L_F \quad i - f f \nmid \mathcal{O} \square \mathcal{L}$
 $\frac{1}{3} - N_L \frac{1}{3} \mathcal{O} 1 - \in L_F N_L \quad H_T R^{1/3} \mathcal{O} R^{1/3} N^0 P_t \quad f f^{05/8} \quad \frac{1}{8} \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} \frac{1}{3} \frac{2}{3} \frac{1}{3} R^{1/3} N_L \in 1 - \quad N^{01/3} \frac{3}{8} \frac{5}{8} \quad N_L 1$
 $\frac{3}{8} \in L_F \frac{1}{8} 1 \oplus^{5/8} R \quad - \frac{5}{8} W \quad \frac{3}{8} R V_T \mathcal{O} \quad \frac{7}{8} 1 R \quad N_L^{05/8} \quad N_L R^{5/8} \frac{1}{3} N_L N^{05/8} - N_L \quad \frac{17}{8} \quad \oplus \frac{1}{3} R \in 1 V_T F \quad \mathcal{O} \mathcal{O} V_T - \mathcal{O} \mathcal{L}$
 $\frac{1}{8} \frac{1}{3} R^{3/8} \in 1 \oplus \frac{1}{3} F \frac{1}{8} V_T \mathcal{O} \mathcal{O} \frac{1}{3} R \quad \frac{3}{8} \in L_F \frac{5}{8} \frac{1}{3} F \frac{5}{8} L_F \quad \frac{1}{3} - \frac{3}{8} \quad 1 N_L^{05/8} R \quad \in - \frac{7}{8} \mathcal{O} \mathcal{O} \frac{1}{3} N^0 N^{01/3} N_L 1 R^S$
 $\frac{3}{8} \in L_F \frac{5}{8} \frac{1}{3} F \frac{5}{8} L_F P_t \quad - f f \nmid \mathcal{O} \square \quad \frac{1}{3} - N_L \frac{1}{3} \mathcal{O} 1 - \in L_F N_L F \quad W \in \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} \quad \frac{2}{3} \frac{5}{8} \quad \frac{1}{3} \frac{2}{3} \mathcal{O} \mathcal{O} \mathcal{O} \frac{5}{8} \quad N_L 1 \quad \frac{17}{8} \frac{7}{8} \frac{5}{8} R$
 $N_L R^{5/8} N^{05/8} - \frac{3}{8} 1 V_T F \quad H_T 1 N_L^{5/8} - N_L \in \frac{1}{3} \mathcal{O} \mathcal{O} \quad \frac{7}{8} 1 R \quad - \frac{5}{8} W \quad N_L R^{5/8} \frac{1}{3} N_L N^{05/8} - N_L F \quad \in -$
 $\frac{1}{3} \frac{1}{8} N_L \in \oplus \frac{1}{3} N_L \in - \mathcal{O} \quad N_L^{05/8} \quad \in - - \frac{1}{3} N_L^{5/8} \quad \in N^0 N^0 V_T - \frac{5}{8} \quad L_F R^S L_F N_L^{5/8} N^0 \quad \frac{7}{8} 1 R \quad \frac{1}{3} V_T N_L 1 \Psi$
 $\in - \frac{7}{8} \mathcal{O} \mathcal{O} \frac{1}{3} N^0 N^{01/3} N_L 1 R^S \quad \frac{3}{8} \in L_F \frac{5}{8} \frac{1}{3} F \frac{5}{8} L_F P_t \quad f i \in N_L \mathcal{O} \quad N_L \mathcal{O} \in L_F \quad \frac{1}{3} \mathcal{O} R^{5/8} \frac{5}{8} N^{05/8} - N_L \mathcal{L} \quad N_L^{05/8}$
 $- \frac{1}{3} R^S \frac{5}{8} R \quad W \in \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} \quad \frac{1}{8} 1 - N_L \in - V_T \frac{5}{8} \quad N_L 1 \quad \frac{3}{8} \frac{5}{8} \frac{5}{8} H^{5/8} - \quad R^{5/8} L_F \frac{5}{8} \frac{1}{3} R^{1/8} \mathcal{O} \quad \frac{1}{3} \frac{1}{8} N_L \in \oplus \in N_L \in \frac{5}{8} L_F$
 $1 - \quad N^{05/8} \frac{1}{8} \mathcal{O} \frac{1}{3} - \in L_F N^0 L_F \quad W \in N_L \mathcal{O} \quad \frac{2}{3} R^{1/3} \frac{3}{8} \frac{5}{8} R \quad H_T 1 N_L^{5/8} - N_L \in \frac{1}{3} \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{L} \quad R^{1/3} N_L^{05/8} R \quad N_L \mathcal{O} \frac{1}{3} -$
 $\in - \frac{3}{8} \in \oplus \in \frac{3}{8} V_T \mathcal{O} \mathcal{O} \quad \in - \frac{3}{8} \in \frac{1}{8} \frac{1}{3} N_L \in 1 - L_F \quad W \in N_L \mathcal{O} \quad V_T - \frac{3}{8} \frac{5}{8} R^L F N_L \frac{1}{3} - \frac{3}{8} \in - \mathcal{O} \quad \frac{17}{8}$
 $H_T \frac{1}{3} N_L \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} \mathcal{O} R^S \quad \in - \quad \frac{3}{8} \in L_F \frac{5}{8} \frac{1}{3} F \frac{5}{8} \quad \frac{1}{3} R^{5/8} \frac{1}{3} L_F \quad W \in N_L \mathcal{O} \quad \mathcal{O} \in \mathcal{O} \mathcal{O} \quad V_T - N^{05/8} N_L \quad N^{05/8} \frac{3}{8} \in \frac{1}{8} \frac{1}{3} \mathcal{O} \mathcal{O}$
 $- \frac{5}{8} \frac{5}{8} \frac{3}{8} \quad \frac{1}{3} - \frac{3}{8} \quad \frac{7}{8} V_T R N_L^{05/8} R \quad L_F N_L R^{5/8} - \mathcal{O} N_L^{05/8} - \in - \mathcal{O} \quad \in N_L F \quad \frac{7}{8} \frac{11}{8} V_T F \quad 1 -$
 $\mathcal{O}^{5/8} \frac{1}{3} \mathcal{O} \mathcal{O} N_L \mathcal{O} \frac{1}{8} \frac{1}{3} R^{5/8} \quad \frac{17}{8} \quad \mathcal{O} V_T N^{01/3} - \quad \frac{2}{3} \frac{5}{8} \in - \mathcal{O} P_t$

Global Active Pharmaceutical Ingredient

Market Dynamics

The key factor for growth of global Active Pharmaceutical Ingredient market is the rise of demand for the new drug discovery for treatment of various chronic and infectious diseases like HIV, cancer, arthritis, bone & joint infections, hepatitis-B, Aids etc. The market is expected to grow at a CAGR of 12.3% from 2018 to 2025. The market is dominated by the top 10 players, which account for 50% of the total market. The market is highly competitive, with many new entrants entering the market. The market is also facing challenges from generic drugs and biosimilars. The market is expected to grow at a CAGR of 12.3% from 2018 to 2025. The market is dominated by the top 10 players, which account for 50% of the total market. The market is highly competitive, with many new entrants entering the market. The market is also facing challenges from generic drugs and biosimilars.

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Market Regional Analysis

o1_RN_L “N⁵/₈R₁1/3 €_L 5/8N⁵/₈1/8N⁵/₈3/8 N_L 3/8N⁵/₈1/3N⁵/₈ N_L5/8 “1/8N_L€⁵/₈ ■⁵/₈1/3_RN⁵/₈1/3⁵/₈V_TN_L€1/81/3%00 ‡-⁵/₈R⁵/₈3/8€5/8-N_L N⁵/₈1/3_RC⁵/₈5/8N_L W_€N_L “N_L5/8 H_T1N⁵/₈-N_L€1/3%00 _R1/3N_L5/8 1/3_L H_T1_R5/8_L5/8-1/8⁵/₈ 17/8 H_T1/3_RN⁵/₈1/3⁵/₈V_TN_L€1/81/3%00 1/8¹N⁵/₈H_T1/3-€5/8_L 7/8_LR -5/8W 3/8_RV_T 3/8€_L1/8¹5/8_RR_S V_T_L€-⁵/₈ 1/3³/₈5/81/3-1/8⁵/₈3/8 N_L5/81/8⁵/₈-1%00¹0_RS €- N_L€_L _R5/8⁵/₈€1-P_t “1/81/8_LR³/₈€-⁵/₈ N_L1 N_L5/8 ‡-N_L5/8_R-1/3N_L€1-1/3%00 O⁵/₈3/8⁵/₈_R1/3N_L€1- 17/8 ■⁵/₈1/3_RN⁵/₈1/3⁵/₈V_TN_L€1/81/3%00 ●1/3-V_T7/81/3¹/₈N_LV_T_R5/8_L “_L€_L11/8€1/3N_L€1-_L ‡O■ “_L N_L5/8 ffiP_t-P_t €1%00³/₈_L 0²* 0%0012/31/3%00 N⁵/₈1/3_RC⁵/₈5/8N_L _L€⁵/₈1/3_R5/8 7/8_LR H_T1/3_RN⁵/₈1/3⁵/₈V_TN_L€1/81/3%00 1/8¹N⁵/₈H_T1/3-€5/8_L €-1/8%00_L3/8€-⁵/₈ -5/8W 3/8_RV_T 3/8€_L1/8¹5/8_RR_S V_T_L€-⁵/₈ N_L5/8 “1/8N_L€⁵/₈ ■⁵/₈1/3_RN⁵/₈1/3⁵/₈V_TN_L€1/81/3%00 ‡-⁵/₈R⁵/₈3/8€5/8-N_L W_€N_L _L€_LH_T5/8-3/8€-⁵/₈ €1/3_L 2/3⁵/₈5/8- €-1/8_R5/81/3_L5/8⁵/₈ 7/8_LR¹N⁵/₈ ffi-_L 0²P_t 2/3€%00%00€1- €- 1/2²0_N N_L1 ffi-_L n²2_Yn² 2/3€%00%00€1- €- 1/2²1/2² W_€€%00⁵/₈ N_L5/8 ,V_T_R1H_T5/81/3- _L€⁵/₈1/3_R5/8 17/8 H_T1/3_RN⁵/₈1/3⁵/₈V_TN_L€1/81/3%00 3/8_RV_T 3/8⁵/₈5/8⁵/₈00¹H_TN⁵/₈-N_L _L€_LH_T5/8-3/8€-⁵/₈ W_€€%00%00 0_R1W 7/8_LR¹N⁵/₈ ffi-_L 2²P_t 2/3€%00%00€1- N_L1 ffi-_L 0²2_Y1/2² 2/3€%00%00€1- 7/8_LR¹N⁵/₈ 1/2²0_N N_L1 1/2²1/2² R_S5/81/3_RP_t ,V_T_R1H_T5/8 €_L N_L5/8 _L€_L5/81/81-3/8⁵/₈00¹/₃_R5/8_LN_L _R5/8⁵/₈€1- 7/8_LR 3/8¹N⁵/₈€-1/3N_L€-⁵/₈ N_L5/8 0_R1W_€N_L 17/8 “1/8N_L€⁵/₈ ■⁵/₈1/3_RN⁵/₈1/3⁵/₈V_TN_L€1/81/3%00 ‡-⁵/₈R⁵/₈3/8€5/8-N_L 3/8_L5/8 N_L1 _R€_L5/8 17/8 €-7/8⁵/₈1/8N_L€1V_T_L 3/8€_L5/81/3_L5/8⁵/₈ %00€_L5/8 -1_R1-1/3 5/8€_RV_T_L€ ‡fffi_L 5/8N_L1/8P_t

ff⁵/₈ “_L€1/3 ■1/31/8_L7/8€1/8 €_L 5/8N⁵/₈1/8N⁵/₈3/8 N_L1 5/8N⁵/₈R⁵/₈ 1/3_L N_L5/8 7/81/3_L5/8_LN_LW_€_R1W_€-⁵/₈ _R5/8⁵/₈€1-1/3%00 N⁵/₈1/3_RC⁵/₈5/8N_L 3/8_L5/8 N_L1 _R1/3_L€3/8%00_RS €-1/8_R5/81/3_L€-⁵/₈ N_L5/8 H_T_R5/85/81/3%00⁵/₈-1/8⁵/₈ 17/8 N_L5/8_R1/3_L5/8V_TN_L€1/8 1/3-3/8 1/8_R1-€1/8 3/8€_L5/81/3_L5/8⁵/₈ €_P5/8_P€ 3/8€1/3²/₃5/8N_L5/8_L€ 1/81/3-1/8⁵/₈_R 5/8N_L1/8P_t W_€N_L _R€_L€-⁵/₈ H_T1H_TV_T00¹/₃N_L€1- €- N_L€_L _R5/8⁵/₈€1-P_t “1/81/8_LR³/₈€-⁵/₈ N_L1 ffi_L 1/3_R1V_T-3/8 n²* 17/8 1/3%00%00 1/81/3-1/8⁵/₈_R 3/8⁵/₈1/3N_L€_L 11/81/8V_T_R €- 3/8⁵/₈5/8⁵/₈00¹H_T€-⁵/₈ 1/81V_T-N_L_R€5/8_L 1/3-3/8 N_L5/8 -V_TN⁵/₈5/8_R 17/8 0%0012/31/3%00 1/81/3-1/8⁵/₈_R 3/8⁵/₈1/3N_L€_L €_L H_T_R1⁵/₈1/8N_L5/8⁵/₈ N_L1 €-1/8_R5/81/3_L5/8⁵/₈ 2/3_RS 0² H_T5/8_R1/8⁵/₈-N_L 7/8_LR¹N⁵/₈ 1/2²0_N N_L1 1/2²1/4² W_€N_L 7/8_LR¹N⁵/₈ 0_P€ N⁵/₈€%00%00€1- N_L1 2²P_t N⁵/₈€%00%00€1- 3/8⁵/₈1/3N_L€_L €-7/8%00_L5/8-1/8⁵/₈3/8 2/3_RS _R€_L5/8 €- 1/81-_LV_TN⁵/₈H_TN_L€1- 17/8 N_L12/31/31/81 V_T_L5/8_L V_T-⁵/₈1/3%00N_L0_RS 3/8€5/8N_L€-_L€_L7/8€1/8€5/8-N_L H_T0_RS_L€1/81/3%00 1/31/8N_L€⁵/₈€N_LR_S 1/3-3/8 N_L5/8 0¹/₃_RN⁵/₈1/3⁵/₈V_T00 V_T_L5/8 17/8 1/3%001/81¹0¹00 €- N_L€_L _R5/8⁵/₈€1-P_t

● $\frac{1}{3}C_R\% \frac{5}{8}N_L - N_L V_{\frac{3}{8}} \in \frac{5}{8}\frac{3}{8} - R_S$ ff H_T $-1N^H_T \frac{1}{3} - \in \frac{5}{8}L_F$

$-15\frac{5}{8}C_R \in -\frac{5}{8}C_R$ $\ddagger -\frac{5}{8}\frac{0}{00}\frac{5}{8} \in N^2$ $\square N^2\frac{2}{3}T \in$ ff $\frac{5}{8}\oplus \frac{1}{3}$ $\blacksquare \frac{1}{3}C_R N^2\frac{1}{3}\frac{1}{8}\frac{5}{8} V_T N_L \in \frac{1}{8}\frac{1}{3}\frac{0}{00}$
 $\ddagger -\frac{3}{8} V_T L_F N_L C_R \in \frac{5}{8}L_F$ $R_N L_{\frac{3}{8}} P_t \in$ $\blacksquare \frac{7}{8} \in MD\frac{5}{8}C_R$ $\ddagger -\frac{1}{8} P_t \in$ “ $\frac{2}{3}\frac{2}{3}\frac{1}{3} N_L N_L$ $R_{\frac{1}{3}\frac{2}{3}\frac{1}{3}} C_R \frac{1}{3} N_L 1 C_R \in \frac{5}{8}L_F \in$
 ● $\frac{5}{8}C_R \frac{1}{8}\frac{0}{00}$ \P $-1P_t$ $\ddagger -\frac{1}{8} P_t \in$ $O P_t$ $\ddagger \frac{17}{8}\frac{7}{8} N^2\frac{1}{3} - -Y R_{\frac{1}{3}}$ $\square \frac{11}{8}\frac{5}{8}$ “ $\square \in$
 $\square \frac{0}{00}\frac{1}{3} N^1 - N^2 \in N_L \in SM\frac{0}{00} \in -\frac{5}{8}$ $\blacksquare \frac{0}{00}\frac{1}{8}$ $j \square -SM j \in$ $-\frac{1}{3} R_S \frac{5}{8} C_R$ “ $\square \in$ $\circ \frac{1}{3}\oplus \frac{1}{3} C_R N_L \in L_F$ “ $\square \in$ $\frac{0}{00} \in$
 $R \in \frac{0}{00}\frac{0}{00} R_S$ $\frac{1}{3} - \frac{3}{8}$ $-1N^H_T \frac{1}{3} - R_S \in$ $-\frac{1}{3} - \frac{17}{8} \in \in$ $\frac{1}{3} C_R \frac{5}{8}$ $L_F 1 N^2\frac{5}{8}$ $\frac{17}{8}$ $N_L \frac{5}{8}$ $H_T C_R 1 N^2 \in -\frac{5}{8} - N_L$
 $\frac{1}{8} 1 N^H_T \frac{1}{3} - \in \frac{5}{8}L_F$ $\in -$ $N_L \frac{5}{8}$ $\frac{0}{00}\frac{12}{3}\frac{1}{3}\frac{0}{00}$ $\frac{1}{3}\frac{1}{8} N_L \in \oplus \frac{5}{8}$ $H_T \frac{1}{3} C_R N^2\frac{1}{3}\frac{1}{8}\frac{5}{8} V_T N_L \in \frac{1}{8}\frac{1}{3}\frac{0}{00}$
 $\in -\frac{5}{8} C_R \frac{5}{8}\frac{3}{8} \in \frac{5}{8} - N_L L_F$ $N^2\frac{1}{3} C_R \% \frac{5}{8} N_L$.

Market Trends

ff $\frac{5}{8}$ $\frac{5}{8} N^2\frac{5}{8} C_R \frac{5}{8} - \frac{1}{8}\frac{5}{8}$ $\frac{17}{8}$ $\ddagger \in \frac{0}{00}\frac{0}{00} R_S$ $-1N^H_T \frac{0}{00}\frac{5}{8} N$ “ $\frac{1}{8} N_L \in \oplus \frac{5}{8}$
 $\blacksquare \frac{1}{3} C_R N^2\frac{1}{3}\frac{1}{8}\frac{5}{8} V_T N_L \in \frac{1}{8}\frac{1}{3}\frac{0}{00}$ $\ddagger -\frac{5}{8} C_R \frac{5}{8}\frac{3}{8} \in \frac{5}{8} - N_L L_F P_t$ ff $\frac{5}{8}$ $\frac{0}{00}\frac{1}{3} N_L \frac{5}{8} L_F N_L$ $\frac{5}{8} - \frac{5}{8} C_R \frac{1}{3} N_L \in 1 -$
 $\frac{17}{8}$ “ $\blacksquare \ddagger L_F$ $\frac{2}{3}\frac{5}{8} \in -\frac{5}{8}$ $\frac{1}{8} C_R \frac{5}{8}\frac{1}{3} N_L \frac{5}{8}\frac{3}{8}$ $\in L_F$ $\frac{0}{00}\frac{0}{00} R_S$ $\frac{1}{8} 1 N^H_T \frac{0}{00}\frac{5}{8} N \in$ $\frac{W}{00} \in \frac{1}{8}\frac{0}{00}$
 $\in -\frac{1}{8}\frac{0}{00} V_T \frac{3}{8}\frac{5}{8}$ $\frac{0}{00}\frac{0}{00}$ $H_T 1 N_L \frac{5}{8} - \frac{1}{8} R_S$ “ $\blacksquare \ddagger \in$ $H_T \frac{5}{8} H_T N_L \in \frac{3}{8}\frac{5}{8} L_F \in$ $L_F N_L \frac{5}{8} C_R \in \frac{0}{00}\frac{5}{8}$ “ $\blacksquare \ddagger$ $\frac{1}{3} - \frac{3}{8}$
 $\frac{1}{00} \in \frac{0}{00} 1 - V_T \frac{1}{8}\frac{0}{00}\frac{5}{8} 1 N_L \in \frac{3}{8}\frac{5}{8} L_F P_t$ ff $\frac{0}{00} L_F$ $\frac{0}{00}\frac{1}{3} L_F$ $\frac{0}{00}\frac{5}{8}\frac{3}{8}$ $N_L 1$ $N^2 C_R \frac{5}{8}$ $\frac{1}{8} 1 N^H_T \frac{0}{00} \in \frac{1}{8}\frac{1}{3} N_L \frac{5}{8}\frac{3}{8}$
 $\square \P$ $\frac{1}{3} L_F$ $\frac{W}{00}\frac{5}{8}\frac{0}{00}\frac{0}{00}$ $\frac{1}{3} L_F$ $\frac{1}{8}\frac{5}{8} C_R N_L \in \frac{7}{8} \in \frac{1}{8}\frac{1}{3} N_L \in 1 -$ $H_T C_R 1 \frac{1}{8}\frac{5}{8} L_F L_F \frac{5}{8} L_F P_t$

$\ddagger -\frac{1}{8} C_R \frac{5}{8}\frac{1}{3} L_F \in -\frac{5}{8}$ $-1N^H_T \frac{5}{8} N_L \in N_L \in 1 -$ $\in -$ $N_L \frac{5}{8}$ “ $\blacksquare \ddagger$ ● $\frac{1}{3} C_R \% \frac{5}{8} N_L$

ff $\frac{5}{8}$ $C_R \in L_F \in -\frac{5}{8}$ $-V_T N^2\frac{2}{3}\frac{5}{8} C_R$ $\frac{17}{8}$ $L_F N^2\frac{1}{3}\frac{0}{00}\frac{0}{00}$ $H_T C_R \frac{13}{8} V_T \frac{1}{8}\frac{5}{8} C_R L_F$ $N_L \frac{0}{00}\frac{1}{3} N_L$ $\frac{0}{00}\frac{1}{3}\oplus \frac{5}{8}$
 $\frac{5}{8} N^H_T \frac{5}{8} C_R N_L \in L_F \frac{5}{8}$ $\in -$ $N_L \frac{5}{8}$ $N^2\frac{1}{3} - V_T \frac{7}{8}\frac{1}{3}\frac{1}{8} N_L V_T C_R \in -\frac{5}{8}$ $\frac{17}{8}$ $- \in \frac{1}{8}\frac{5}{8}$ “ $\blacksquare \ddagger L_F \in$ $\frac{0}{00}\frac{1}{3} L_F$
 $C_R \frac{5}{8} L_F V_T \frac{0}{00} N_L \frac{5}{8}\frac{3}{8}$ $\in -$ $\frac{1}{3}$ $\frac{0}{00}\frac{0}{00} R_S$ $L_F N_L \in \frac{7}{8}\frac{7}{8}$ $\frac{1}{8} 1 N^H_T \frac{5}{8} N_L \in N_L \in 1 -$ $\frac{W}{00} \in N_L \frac{0}{00} \in -$ $N_L \frac{5}{8}$
 $\frac{0}{00}\frac{12}{3}\frac{1}{3}\frac{0}{00}$ $N^2\frac{1}{3} C_R \% \frac{5}{8} N_L P_t$ ff $\frac{0}{00} V_T L_F \in$ $N_L \frac{5}{8}$ $\frac{0}{00}\frac{1}{3} N_L \frac{5}{8} L_F N_L$ $N_L C_R \frac{5}{8} - \frac{3}{8}$ $\in -$ $N_L \frac{5}{8}$ $\frac{7}{8} 1 C_R N^2$ $\frac{17}{8}$
 $\in - N_L \frac{5}{8} - L_F \in \frac{7}{8} R_S \in -\frac{5}{8}$ $\frac{1}{8} 1 N^H_T \frac{5}{8} N_L \in N_L \in \oplus \frac{5}{8}$ $-\frac{1}{3} N_L V_T C_R \frac{5}{8}$ $\frac{17}{8}$ $N_L \frac{5}{8}$ $N^2\frac{1}{3} C_R \% \frac{5}{8} N_L$ $\in L_F$
 $H_T C_R 1 \frac{0}{00}\frac{5}{8}\frac{1}{8} N_L \frac{5}{8}\frac{3}{8}$ $N_L 1$ $\frac{5}{8}\frac{0}{00}\frac{5}{8} \oplus \frac{1}{3} N_L \frac{5}{8}$ $N_L \frac{5}{8}$ $N^2\frac{1}{3} C_R \% \frac{5}{8} N_L$ $H_T 1 L_F \in N_L \in 1 -$ $\in -$ $N_L \frac{5}{8}$
 $\frac{1}{8} 1 N^2 \in -\frac{5}{8}$ $R_S \frac{5}{8}\frac{1}{3} C_R L_F P_t$

Market Segmentation

ff $\frac{5}{8}$ $\frac{W}{00} 1 C_R \frac{0}{00}\frac{3}{8} \frac{W}{00} \in \frac{3}{8}\frac{5}{8}$ “ $\blacksquare \ddagger$ $N^2\frac{1}{3} C_R \% \frac{5}{8} N_L$ $\frac{0}{00}\frac{1}{3} L_F$ $\frac{2}{3}\frac{5}{8}\frac{5}{8} -$ $L_F \frac{5}{8} \frac{0}{00}\frac{5}{8} - N_L \frac{5}{8}\frac{3}{8}$ $1 -$
 $N_L \frac{5}{8}$ $\frac{2}{3}\frac{1}{3} L_F \in L_F$ $\frac{17}{8}$ $N^2\frac{1}{3} - V_T \frac{7}{8}\frac{1}{3}\frac{1}{8} N_L V_T C_R \in -\frac{5}{8}$ $H_T C_R 1 \frac{1}{8}\frac{5}{8} L_F L_F \in$ $N_L R_S H_T \frac{5}{8}$ $\frac{17}{8}$
 $L_F R_S - N_L \frac{5}{8} L_F \in L_F \in$ “ $\blacksquare \ddagger$ $\frac{7}{8} 1 C_R N^2 V_T \frac{0}{00}\frac{1}{3} N_L \in 1 - \in$ $\frac{1}{3} H_T H_T \frac{0}{00} \in \frac{1}{8}\frac{1}{3} N_L \in 1 - \in$ $N^2\frac{1}{00}\frac{0}{00}\frac{5}{8}\frac{1}{8} V_T \frac{0}{00}\frac{5}{8} P_t$

ff^{05/8} N^{01/3} F_R C_u 5/8 N_L 1/3 H_T H_T 00 € 1/8 1/3 N_L € 1 - ¥ W € L^{5/8} 1/8 1/3 - 2/3 5/8 2/3 F_R 1^{05/8} - 3/8 1 W - € - N_L 1 1/8 1/3 F_R 3/8 € 1 ⊕ 1/3 L^{5/8} 1/3 V_T 00 1/3 F_R 3/8 € L^{5/8} 1/3 L^{5/8} 1 - 1/8 10 00 1^{05/8} R_S 5/8 V_T F_R 10 00 1^{05/8} € 1/8 1/3 00 3/8 € L^{5/8} 1 F_R 3/8 5/8 F_R L^{5/8} 1 F_R N_L 0 1 H_T 5/8 3/8 € 1/8 3/8 € L^{5/8} 1 F_R 3/8 5/8 F_R L^{5/8} F_R 5/8 L^{5/8} H_T € F_R 1/3 N_L 1 F_R R_S 5/8 0 1/3 L^{5/8} N_L F_R 1 € - N_L 5/8 L^{5/8} N_L € - 1/3 00 5/8 V_T F_R 10 00 1^{05/8} R_S 5/8 1/3 - 3/8 1 N_L 0 5/8 F_R L^{5/8} P_t † 5/8 F_R 5/8 5/8 N_L 0 5/8 1 - 1/8 10 00 1^{05/8} R_S L^{5/8} 5/8 0 N^{05/8} - N_L € L^{5/8} N_L 0 5/8 1/8 V_T F_R F_R 5/8 - N_L 0 10 00 3/8 5/8 F_R 17/8 N_L 0 5/8 2/3 € 0 0 5/8 L^{5/8} N^{01/3} F_R C_u 5/8 N_L L^{5/8} 0 1/3 F_R 5/8 5/8 L^{5/8} € - 1/8 5/8 N_L 0 5/8 1 1/8 1/8 V_T F_R F_R 5/8 - 1/8 5/8 L^{5/8} 17/8 1/8 1/3 - 1/8 5/8 F_R 0 1/3 L^{5/8} L^{5/8} V_T F_R 0 5/8 3/8 1/3 N_L 1/3 L^{5/8} V_T 2/3 L^{5/8} N_L 1/3 - N_L € 1/3 00 H_T 1/3 1/8 5/8 1/3 F_R 1 V_T - 3/8 N_L 0 5/8 W F_R 0 00 3/8 P_t ff^{05/8} L^{5/8} 5/8 0 N^{05/8} - N_L € L^{5/8} 3/8 5/8 5/8 N^{05/8} 3/8 N_L 1 F_R € L^{5/8} 1/3 N_L 1/3 0 F_R 1 W N_L 0 F_R 1/3 N_L 5/8 17/8 2 P_t 0 * € - N_L 0 5/8 1/8 1 N^{05/8} € - 0 R_S 5/8 1/3 F_R L^{5/8} P_t

Market Regional Outlook

The key markets for active pharmaceutical ingredients include - 1 V_T N_L 0 “N^{05/8} F_R € 1/8 1/3 5/8 V_T F_R 1 H_T 5/8 5/8 “L^{5/8} € 1/3 ■ 1/3 1/8 € 7/8 € 1/8 5/8 0 1 F_R N_L 0 “N^{05/8} F_R € 1/8 1/3 5/8 1/3 - 3/8 N_L 0 5/8 ● € 3/8 3/8 0 00 5/8 1/3 L^{5/8} N_L ¶ “7/8 F_R € 1/8 1/3 P_t 0 1 F_R N_L 0 “N^{05/8} F_R € 1/8 1/3 € L^{5/8} L^{5/8} H_T 5/8 1/3 F_R 0 5/8 1/3 3/8 € - 0 N_L 0 5/8 “■ † N^{01/3} F_R C_u 5/8 N_L 0 F_R 1 W N_L 0 € - N_L 0 5/8 “N^{05/8} F_R € 1/8 1/3 L^{5/8} W 0 € 1/8 0 € - N_L V_T F_R - € L^{5/8} 0 00 5/8 1/3 3/8 € - 0 N_L 0 5/8 0 00 12/3 1/3 00 N^{01/3} F_R C_u 5/8 N_L W € N_L 0 N_L 0 5/8 0 00 1/3 F_R 0 5/8 L^{5/8} N_L L^{5/8} 0 1/3 F_R 5/8 P_t

ff^{05/8} 1/8 F_R V_T 1/8 € 1/3 00 7/8 1/3 1/8 N_L 1 F_R L^{5/8} 2/3 1/3 1/8 C_u € - 0 N_L 0 5/8 L^{5/8} 1/3 € 3/8 0 F_R 1 W N_L 0 € - 1/8 0 00 V_T 3/8 5/8 N_L 0 5/8 H_T F_R 5/8 L^{5/8} 5/8 - 1/8 5/8 17/8 1/3 0 00 1/3 F_R 0 5/8 - V_T N^{02/3} 5/8 F_R 17/8 H_T F_R 1 N^{05/8} € - 5/8 - N_L 1/8 1 N^{05/8} H_T 1/3 - € 5/8 L^{5/8} W € N_L 0 € - N_L 0 5/8 F_R 5/8 0 € 1 - P_t † - 1/3 3/8 3/8 € N_L € 1 - 5/8 1/8 V_T - N_L F_R € 5/8 L^{5/8} 0 00 € C_u 5/8 N_L 0 5/8 ffi - € N_L 5/8 3/8 - N_L 1/3 N_L 5/8 L^{5/8} ffi P_t - P_t 1/3 - 3/8 - 1/3 - 1/3 3/8 1/3 - 1 N_L 5/8 0 € 0 0 1 1/8 1/8 V_T F_R F_R 5/8 - 1/8 5/8 L^{5/8} 17/8 1/8 0 F_R 1 - € 1/8 1/3 L^{5/8} W 5/8 0 00 00 1/3 L^{5/8} - 5/8 V_T F_R 10 00 1^{05/8} € 1/8 1/3 00 3/8 € L^{5/8} 5/8 1/3 L^{5/8} L^{5/8} W 0 € 1/8 0 € L^{5/8} 2/3 5/8 0 00 € 5/8 ⊕ 5/8 3/8 N_L 1 2/3 5/8 1/3 H_T F_R 1 N^{05/8} € - 5/8 - N_L 3/8 F_R € ⊕ 5/8 F_R 17/8 N_L 0 5/8 F_R 5/8 0 € 1 - 1/3 00 N^{01/3} F_R C_u 5/8 N_L 0 F_R 1 W N_L 0 P_t

Market Segmentations

$-1/3 F^{5/8} 3/8$ 1- $N^{21/3} - V_{T7/8 1/3 1/8} N_L V_{TR} \in -\otimes$ $H_{TR} 1^{1/8} 5/8 F L F \Delta$ $N_L^{25/8}$ $\square_{00} 12/3 1/3 00$ “ $1/8 N_L \in \otimes^{5/8}$ ” $\blacksquare_{1/3} F_R N^{21/3 1/8 5/8} V_{TN} \in 1/8 1/3 00$ $\ddagger - \otimes F_R^{5/8 3/8} \in 5/8 - N_L F$ $\bullet_{1/3} F_R \cup^{5/8} N_L$ $\ominus_{1/3} F$ $2/3 5/8 5/8 -$ $F^{5/8} \otimes N^{25/8} - N_L^{5/8 3/8}$ $\in - N_L^1$ $1/8 1/3 H_{TN} \in \otimes^{5/8}$ $N^{21/3} - V_{T7/8 1/3 1/8} N_L V_{TR} \in -\otimes$ $1/3 - 3/8$ $1/8 - N_L F_{R1/3 1/8} N_L$ $N^{21/3} - V_{T7/8 1/3 1/8} N_L V_{TR} \in -\otimes P_t$

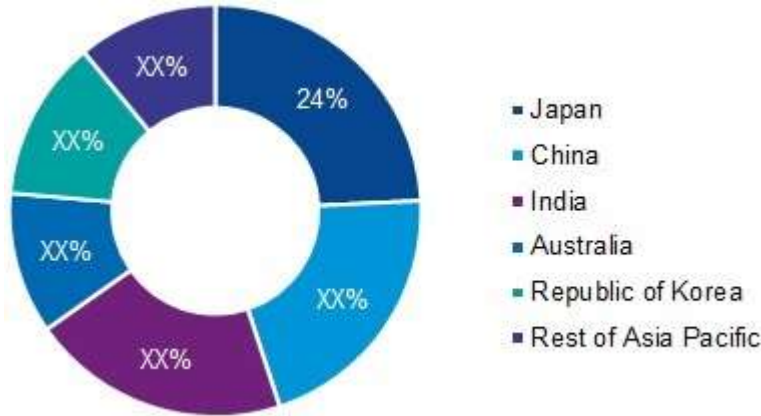
$-1/3 F^{5/8} 3/8$ 1- $N_L R_S H_T^{5/8}$ $17/8$ $F_R S - N_L^{25/8} F \in L F \Delta$ $N_L^{25/8}$ $\square_{00} 12/3 1/3 00$ “ $1/8 N_L \in \otimes^{5/8}$ ” $\blacksquare_{1/3} F_R N^{21/3 1/8 5/8} V_{TN} \in 1/8 1/3 00$ $\ddagger - \otimes F_R^{5/8 3/8} \in 5/8 - N_L F$ $\bullet_{1/3} F_R \cup^{5/8} N_L$ $\ominus_{1/3} F$ $2/3 5/8 5/8 -$ $F^{5/8} \otimes N^{25/8} - N_L^{5/8 3/8}$ $\in - N_L^1$ $F_R S - N_L^{25/8} N_L \in 1/8$ $1/3 - 3/8$ $2/3 \in 1 N_L^{5/8 1/8} \otimes P_t$ $\blacksquare - N_L^{25/8}$ $2/3 1/3 F \in L F$ $17/8$ $2/3 \in 1 N_L^{5/8 1/8} \otimes$ $F_R S - N_L^{25/8} F \in L F \Delta$ $N_L^{25/8}$ $N^{21/3} F_R \cup^{5/8} N_L$ $\in L F$ $7/8 V_{TR} N_L^{25/8} F_R$ $F V_{T2/3} \forall$ $F^{5/8} \otimes N^{25/8} - N_L^{5/8 3/8}$ $\in - N_L^1$ $N^{21} - 1^{1/8} 001 - 1/3 00$ $1/3 - N_L \in 2/3 13/8 \in 5/8 F \Delta$ $F_R^{5/8 1/8} 1 N^{22/3} \in - 1/3 - N_L$ $H_{TR} 1 N_L^{5/8} \in - L F \Delta$ $\otimes_{1/3 1/8 1/8} \in - 5/8 F \Delta$ $1/3 - 3/8$ $1 N_L^{25/8} F_R L F P_t$

$-1/3 F^{5/8} 3/8$ 1- “ $\blacksquare \ddagger$ $7/8 1 F_R N^{21} V_{T00} 1/3 N_L \in 1 - \Delta$ $N_L^{25/8}$ $\square_{00} 12/3 1/3 00$ “ $1/8 N_L \in \otimes^{5/8}$ ” $\blacksquare_{1/3} F_R N^{21/3 1/8 5/8} V_{TN} \in 1/8 1/3 00$ $\ddagger - \otimes F_R^{5/8 3/8} \in 5/8 - N_L F$ $\bullet_{1/3} F_R \cup^{5/8} N_L$ $\ominus_{1/3} F$ $2/3 5/8 5/8 -$ $3/8 \in \otimes \in 3/8 5/8 3/8$ $\in - N_L^1$ $\otimes^{5/8} - 5/8 F_R \in 1/8$ “ $\blacksquare \ddagger$ $1/3 - 3/8$ $2/3 F_{R1/3} - 3/8 5/8 3/8 f$ $\in - - 1 \otimes_{1/3} N_L \in \otimes^{5/8}$ ” “ $\blacksquare \ddagger P_t$ ”

$-1/3 F^{5/8} 3/8$ 1- $1/3 H_T H_{T00} \in 1/8 1/3 N_L \in 1 - \Delta$ $N_L^{25/8}$ $\otimes_{00} 12/3 1/3 00$ $N^{21/3} F_R \cup^{5/8} N_L$ $\in L F$ $F^{5/8} \otimes N^{25/8} - N_L^{5/8 3/8}$ $\in - N_L^1$ $1/8 1/3 F_R^{3/8} \in 1 \otimes_{1/3} F_{1/8} V_{T00} 1/3 F_R$ $3/8 \in L F^{5/8 1/3} L F^{5/8}$ $1 - 1/8 1^{100} 1 \otimes R_S \Delta$ $- 5/8 V_{TR} 1^{100} 1 \otimes \in 1/8 1/3 00$ $3/8 \in L F^1 F_R^{3/8 5/8} F_R L F \Delta$ $1 F_R N_L \otimes 1 H_T^{5/8 3/8} \in 1/8$ $3/8 \in L F^1 F_R^{3/8 5/8} F_R L F \Delta$ $F_R^{5/8} L F H_T \in F_{R1/3} N_L^1 F_R R_S \Delta$ $\otimes_{1/3} F N_L F_R 1 \in - N_L^{5/8} L F N_L \in - 1/3 00$ $3/8 \in L F^1 F_R^{3/8 5/8} F_R L F \Delta$ $V_{TR} 1^{100} 1 \otimes R_S \Delta$ $1/3 - 3/8$ $1 N_L^{25/8} F_R L F P_t$

$-1/3 F^{5/8} 3/8$ 1- $N^{21} 00^{5/8 1/8} V_{T00} 5/8 \Delta$ $N_L^{25/8}$ $\otimes_{00} 12/3 1/3 00$ “ $1/8 N_L \in \otimes^{5/8}$ ” $\blacksquare_{1/3} F_R N^{21/3 1/8 5/8} V_{TN} \in 1/8 1/3 00$ $\ddagger - \otimes F_R^{5/8 3/8} \in 5/8 - N_L F$ $\bullet_{1/3} F_R \cup^{5/8} N_L$ $\in L F$ $3/8 \in \otimes \in 3/8 5/8 3/8$ $\in - N_L^1$ $00 1/3 F_R \otimes^{5/8}$ $N^{21} 00^{5/8 1/8} V_{T00} 5/8$ $1/3 - 3/8$ $L F N^{21} 00 00$ $N^{21} 00^{5/8 1/8} V_{T00} 5/8 P_t$

“L_F€1/3¥■1/31/8€7/8€1/8 “1/8N_L€⊕5/8 ■⊙1/3C_RN²1/31/85/8V_TN_L€1/81/3%0 ‡-⊙C_R5/83/8€5/8-N_L_L_F
●1/3C_R^C_u5/8N_L -⊙1/3C_R5/8£ 1/2^a⊙ i_*¿



●○□ “-1/3%0RsL_F€L_F

Market Regional Analysis

ff⊕5/8 □%0012/31/3%00 “1/8N_L€⊕5/8 ■⊙1/3C_RN²1/31/85/8V_TN_L€1/81/3%0 ‡-⊙C_R5/83/8€5/8-N_L_L_F
●1/3C_R^C_u5/8N_L£ 2/31/3L_F5/83/8 1- C_R5/8⊙€1-£ €L_F L_F5/8⊙N²5/8-N_L5/83/8 €-N_L1 N_L⊕5/8
“N²5/8C_R€1/81/3L_F£ >V_TC_R1^H_T5/8£ “L_F€1/3¥■1/31/8€7/8€1/8£ 1/3-3/8 N_L⊕5/8 ●€3/83/8%005/8 >1/3L_FN_L ¶
“7/8C_R€1/81/3P_t

ff⊕5/8 “N²5/8C_R€1/81/3L_F €L_F 5/8N^H_T5/81/8N_L5/83/8 N_L1 ⊙10%03/8 N_L⊕5/8 %001/3C_R⊕5/8L_FN_L
L_F⊙1/3C_R5/8 17/8 N_L⊕5/8 ⊙%0012/31/3%00 1/31/8N_L€⊕5/8 H_T⊙1/3C_RN²1/31/85/8V_TN_L€1/81/3%00
€-⊙C_R5/83/8€5/8-N_L_L_F N²1/3C_R^C_u5/8N_LP_t ff⊕5/8 C_R5/8⊙€1- 3/81N²€-1/3N_L5/8L_F N_L⊕5/8 ⊙%0012/31/3%00
1/31/8N_L€⊕5/8 H_T⊙1/3C_RN²1/31/85/8V_TN_L€1/81/3%00 €-⊙C_R5/83/8€5/8-N_L_L_F N²1/3C_R^C_u5/8N_L 1^W€-⊙ N_L1
N_L⊕5/8 C_R€L_F€-⊙ N_L5/81/8⊙-10%01⊙€1/81/3%00 1/33/8⊕1/3-1/85/8N²5/8-N_L €- 3/8€1/3⊙-1L_FN_L€1/8L_F
1/81^V_TH_T%005/83/8 ^W€N_L⊙ N_L⊕5/8 €-1/8C_R5/81/3L_F€-⊙ €-1/8€3/85/8-1/85/8L_F 17/8 1/8⊙C_R1-€1/8
3/8€L_F5/81/3L_F5/8L_F 1/3-3/8 1N_L⊕5/8C_R -5/8V_TC_R10%01⊙€1/81/3%00 3/8€L_F1C_R3/85/8C_RL_FP_t

>V_TC_R1^H_T5/8 €L_F 5/8N^H_T5/81/8N_L5/83/8 N_L1 1/31/81/81^V_T-N_L 7/81C_R N_L⊕5/8 L_F5/81/81-3/8¥
%001/3C_R⊕5/8L_FN_L N²1/3C_R^C_u5/8N_L L_F⊙1/3C_R5/8 3/8V_TC_R€-⊙ N_L⊕5/8 7/81C_R5/81/81/3L_FN_L H_T5/8C_R€13/8P_t
ff⊕5/8 7/81/31/8N_L1C_RL_F C_R5/8L_FH_T1-L_F€2/3%005/8 7/81C_R N²1/3C_R^C_u5/8N_L ⊙C_R1^W_N_L⊙ €- N_L⊙€L_F
C_R5/8⊙€1- 1/3C_R5/8 N_L⊕5/8 H_TC_R5/8L_F5/8-1/85/8 17/8 1/3 %001/3C_R⊕5/8 -V_TN²2/35/8C_R 17/8 -●■L_F
€-⊕10%0⊕5/83/8 €- N²1/3-V_T7/81/31/8N_LV_TC_R€-⊙ 17/8 “■L_F 1/3-3/8 N_L⊕5/8 ⊙C_R1^W€-⊙ -5/85/83/8
N_L1 3/85/8⊕5/8%001^H_T ⊕5/8-5/8C_R€1/8 3/8C_RV_TC_RL_FP_t

“ $L_F \in 1/3 \nabla 1/3 \wedge 1/8 \in 7/8 \in 1/8$ $\in L_F$ $5/8 L_F N_L \in N^{21/3} N_L 5/8 3/8$ $N_L 1$ $2/3 5/8$ $N_L \odot 5/8$ $7/8 1/3 L_F N_L 5/8 L_F N_L \nabla$
 $\odot C_R 1 \nabla \in - \odot$ $C_R 5/8 \odot \in 1 -$ $\in -$ $N_L \odot 5/8$ $\square \% 00 12/3 1/3 \% 00$ “ $1/8 N_L \in \odot 5/8$ $\blacksquare \odot 1/3 C_R N^{21/3} 1/8 5/8 V_T N_L \in 1/8 1/3 \% 00$
 $\dagger - \odot C_R 5/8 3/8 \in 5/8 - N_L L_F$ $\bullet 1/3 C_R C_u 5/8 N_L 3/8 V_T 5/8$ $N_L 1$ $N_L \odot 5/8$ $H_T C_R 5/8 L_F 5/8 - 1/8 5/8$ $17/8$ $C_R 1/3 H_T \in 3/8 \% 00 R_S$
 $3/8 5/8 \odot 5/8 \% 00 1 H_T \in - \odot$ $5/8 1/8 1 - 1 N^2 \in 5/8 L_F$ $L_F V_T 1/8 \odot$ $1/3 L_F$ $- \odot \in - 1/3 \Sigma$ $\dagger - 3/8 \in 1/3 \Sigma$ $1/3 - 3/8$ $- 1 V_T N_L \odot$
 $SM 1 C_R 5/8 1/3$ $N_L \odot 1/3 N_L$ $1/3 C_R 5/8$ $5/8 N^{25/8} C_R \odot \in - \odot$ $1/3 L_F$ $N^{21/3} \% 1 C_R$ $3/8 5/8 L_F N_L \in - 1/3 N_L \in 1 - L_F$ $7/8 1 C_R$ $N_L \odot 5/8$
 $1 V_T N_L L_F 1 V_T C_R 1/8 \in - \odot$ $17/8$ $3/8 C_R V_T \odot$ $N^{21/3} - V_T 7/8 1/3 1/8 N_L V_T C_R \in - \odot P_t$ $TM 1/3 H_T 1/3 -$ $\% 00 5/8 1/3 3/8 L_F$ $N_L \odot 5/8$
“ $L_F \in 1/3 \nabla 1/3 \wedge 1/8 \in 7/8 \in 1/8$ $1/3 1/8 N_L \in \odot 5/8$ $H_T \odot 1/3 C_R N^{21/3} 1/8 5/8 V_T N_L \in 1/8 1/3 \% 00$ $\in - \odot C_R 5/8 3/8 \in 5/8 - N_L$
 $N^{21/3} C_R C_u 5/8 N_L$ $1/3 - 3/8$ $\odot 5/8 \% 00 3/8$ $1/2 \phi_*$ $\in -$ $1/2 \text{a} \odot P_t$

$ff \odot 5/8$ $1/3 1/8 N_L \in \odot 5/8$ $H_T \odot 1/3 C_R N^{21/3} 1/8 5/8 V_T N_L \in 1/8 1/3 \% 00$ $\in - \odot C_R 5/8 3/8 \in 5/8 - N_L L_F$ $N^{21/3} C_R C_u 5/8 N_L$
 $\in -$ $N_L \odot 5/8$ $\bullet \in 3/8 3/8 \% 00 5/8$ $\nabla 1/3 L_F N_L$ \P “ $7/8 C_R \in 1/8 1/3$ $\in L_F$ $5/8 N^{21/3} H_T 5/8 1/8 N_L 5/8 3/8$ $N_L 1$ $\odot C_R 1 \nabla$ $3/8 V_T 5/8$ $N_L 1$
 $N_L \odot 5/8$ $3/8 5/8 \odot 5/8 \% 00 1 H_T \in - \odot$ $\odot 5/8 1/3 \% 00 N_L \odot 1/8 1/3 C_R 5/8$ $\in - 7/8 C_R 1/3 L_F N_L C_R V_T 1/8 N_L V_T C_R 5/8$ $1/3 - 3/8$ $N_L \odot 5/8$
 $1/8 1 - N_L \in - V_T 1 V_T L_F \% 00 R_S$ $\in - 1/8 C_R 5/8 1/3 L_F \in - \odot$ $3/8 5/8 N^{21/3} - 3/8$ $7/8 1 C_R$ $\odot 5/8 1/3 \% 00 N_L \odot 1/8 1/3 C_R 5/8$
 $H_T C_R 13/8 V_T 1/8 N_L L_F P_t$

Market Key Players

The prominent players in the global active pharmaceutical ingredients market are $- 1/3 - 17/8 \in$ “ $j \odot C_R 1/3 - 1/8 5/8 \zeta \Sigma$ $O P_t$ $\dagger 17/8 7/8 N^{21/3} - - \nabla R 1/3$ $\square 11/8 \odot 5/8$ $R N_L 3/8$
 $j - \nabla \in N_L MD 5/8 C_R \% 00 1/3 - 3/8 \zeta \Sigma$ $\blacksquare 7/8 \in MD 5/8 C_R$ $\dagger - 1/8 P_t$ $j f f i - \zeta \Sigma$ “ $2/3 2/3 1 N_L N_L$ $j f f i - \zeta \Sigma$ $- 1/3 R_S 5/8 C_R$ “ $\square j f f i SM \zeta \Sigma$
 $\bullet 5/8 C_R 1/8 C_u$ \P $- 1 P_t \Sigma$ $\dagger - 1/8$ $j f f i - \zeta \Sigma$ $- 15/8 \odot C_R \in - \odot 5/8 C_R$ $\dagger - \odot 5/8 \% 00 \odot 5/8 \in N^2$ $\square N^{22/3} \dagger$ $j f f i SM \zeta \Sigma$
 $\square \% 00 1/3 N^{21/3} L_F N^2 \in N_L \odot C_u \% 00 \in - 5/8$ $\blacksquare \% 00 1/8$ $j f f i SM \zeta \Sigma$ $\odot 1 \odot 1/3 C_R N_L \in L_F$ “ $\square j f f i SM \zeta \Sigma$ $\nabla \% 00 \in$ $R \in \% 00 \% 00 R_S$
 $1/3 - 3/8$ $- 1 N^2 H_T 1/3 - R_S$ $j f f i - \zeta \Sigma$ $1/3 - 3/8$ $ff 5/8 \odot 1/3$ $\blacksquare \odot 1/3 C_R N^{21/3} 1/8 5/8 V_T N_L \in 1/8 1/3 \% 00$ $\dagger - 3/8 V_T L_F N_L C_R \in 5/8 L_F$
 $R N_L 3/8$ $j \dagger L_F C_R 1/3 5/8 \% 00 \zeta P_t$

Major Five Active Pharmaceutical Ingredients Companies

“N^o-5/81/3%o ■@1/3C_RN^o1/31/85/8V_TN_L€1/81/3%o0L_F ‡-1/8P_t

“N^o-5/81/3%o ■@1/3C_RN^o1/31/85/8V_TN_L€1/81/3%o0L_F ‡-1/8P_t 1^H5/8C_R1/3N_L5/8L_F N_L05/8
2/3V_TL_F€-5/8L_FL_F 1/31/8C_R1L_FL_F L_F5/8@N^o5/8-N_LL_F L_FV_T1/80 1/3L_F □5/8-5/8C_R€1/8L_F 1/3-3/8
-H_T5/81/8€1/3%o0N_LR_SP_t ff05/8 1/81N^oH_T1/3-R_S H_T5/8C_R7/81C_RN^oL_F 1/81/3H_TN_L€⊕5/8
N^o1/3-V_T7/81/31/8N_LV_TC_R€-0 17/8 “■L_F 7/81C_R €N_LL_F 1W- 7/8€-€L_F05/83/8
H_T01/3C_RN^o1/31/85/8V_TN_L€1/81/3%o H_TC_R13/8V_T1/8N_LL_FP_t

-1/33/8€%o01/3 ‡5/81/3%o0N_L01/81/3C_R5/8 R_NL_L3/8P_t

-1/33/8€%o01/3 ‡5/81/3%o0N_L01/81/3C_R5/8 R_NL_L3/8P_t 1^H5/8C_R1/3N_L5/8L_F N_L05/8 2/3V_TL_F€-5/8L_FL_F
€- N_L05/8 ■@1/3C_RN^o1/31/85/8V_TN_L€1/81/3%o0L_F L_F5/8@N^o5/8-N_LP_t ff05/8 1/81N^oH_T1/3-R_S 17/87/85/8C_RL_F
1/40 “■L_F 1/3-3/8 €-N_L5/8C_RN^o5/83/8€1/3N_L5/8L_F 1/31/8C_R1L_FL_F ⊕1/3C_R€1V_TL_F N_L05/8C_R1/3H_T5/8V_TN_L€1/8
1/81/3N_L5/801C_R€5/8L_FP_t

TM₁/3MDMD ■@1/3C_RN^o1/31/85/8V_TN_L€1/81/3%o0L_F ■%o01/8

TM₁/3MDMD ■@1/3C_RN^o1/31/85/8V_TN_L€1/81/3%o0L_F ■%o01/8 1^H5/8C_R1/3N_L5/8L_F €N_LL_F
2/3V_TL_F€-5/8L_FL_F N_L0C_R1V_T00 1/3 V_T-€7/8€5/83/8 2/3V_TL_F€-5/8L_FL_F L_F5/8@N^o5/8-N_LP_t ff05/8
1/81N^oH_T1/3-R_S 17/87/85/8C_RL_F 1/3 W€3/85/8 C_R1/3-05/8 17/8 “■L_F V_TL_F5/83/8 7/81C_R N_L05/8
N^o1/3-V_T7/81/31/8N_LV_TC_R5/8 17/8 ⊕1/3C_R€1V_TL_F 7/8€-€L_F05/83/8 H_T01/3C_RN^o1/31/85/8V_TN_L€1/81/3%o
H_TC_R13/8V_T1/8N_LL_FP_t

R^VH_T€- R_NL_L3/8P_t

R^VH_T€- R_NL_L3/8P_t 1^H5/8C_R1/3N_L5/8L_F N_L05/8 2/3V_TL_F€-5/8L_FL_F N_L0C_R1V_T00 N_L05/8
■@1/3C_RN^o1/31/85/8V_TN_L€1/81/3%o0L_F L_F5/8@N^o5/8-N_LP_t ff05/8 L_F5/8@N^o5/8-N_L 7/811/8V_TL_F5/8L_F 1- N_L05/8
3/8€L_F1/81⊕5/8C_RR_S£ 3/85/8⊕5/8%o01^HTN^o5/8-N_L£ N^o1/3-V_T7/81/31/8N_LV_TC_R5/8£ 1/3-3/8
1/81N^oN^o5/8C_R1/8€1/3%o0€MD1/3N_L€1- 17/8 7/8€-€L_F05/83/8 H_T01/3C_RN^o1/31/85/8V_TN_L€1/81/3%o

$H_T C_R^{13/8} V_T^{1/8} N_L F^{1/3-3/8}$ “■” $\ddagger F P_t$ $ff^{5/8}$ $1/8 N^{\circ} H_T^{1/3} - R_s$ $17/8 7/8 5/8 C_R L F^{1/3}$ $W \in 3/8 5/8$ $C_R^{1/3} - \odot 5/8$ $17/8$
 $“■” \ddagger F V_T L F^{5/8 3/8}$ $7/8 1 C_R N_L \odot 5/8$ $N^{\circ 1/3} - V_T 7/8 1/3 1/8 N_L V_T C_R^{5/8}$ $17/8$ $\oplus 1/3 C_R \in 1 V_T L F$ $7/8 \in - \in L F \odot 5/8 3/8$
 $H_T \odot 1/3 C_R N^{\circ 1/3 1/8 5/8} V_T N_L \in 1/8 1/3 \%$ $H_T C_R^{13/8} V_T^{1/8} N_L F P_t$

● $R_s \%$ $\odot 1/3 -$ offl

● $R_s \%$ $\odot 1/3 -$ offl $1 H_T 5/8 C_R^{1/3} N_L 5/8 L F N_L \odot 5/8$ $2/3 V_T L F \in - 5/8 L F L F$ $1/3 1/8 C_R^{1/3} L F L F$ $L F 5/8 \odot N^{\circ 5/8} - N_L L F$
 $L F V_T 1/8 \odot 1/3 L F$ □ $N \in$ □ $N f - N \in$ $1/3 - 3/8$ ■ $ff - P_t$ $ff^{5/8}$ $1/8 N^{\circ} H_T^{1/3} - R_s$ $17/8 7/8 5/8 C_R L F^{1/3}$ $W \in 3/8 5/8$
 $C_R^{1/3} - \odot 5/8$ $17/8$ “■” $\ddagger F V_T L F^{5/8 3/8}$ $7/8 1 C_R N_L \odot 5/8$ $N^{\circ 1/3} - V_T 7/8 1/3 1/8 N_L V_T C_R^{5/8}$ $17/8$ $\oplus 1/3 C_R \in 1 V_T L F$
 $7/8 \in - \in L F \odot 5/8 3/8$ $H_T \odot 1/3 C_R N^{\circ 1/3 1/8 5/8} V_T N_L \in 1/8 1/3 \%$ $H_T C_R^{13/8} V_T^{1/8} N_L F^{1/3}$ $1/3 1/8 C_R^{1/3} L F L F$ $\oplus 1/3 C_R \in 1 V_T L F$
 $N_L \odot 5/8 C_R^{1/3} H_T 5/8 V_T N_L \in 1/8$ $1/3 C_R^{5/8 1/3} L F \in$ $L F V_T 1/8 \odot 1/3 L F$ $\ddagger f f l f$ “■” \in $1/8 - N_L \in 2/3 1/3 1/8 N_L 5/8 C_R \in 1/3 \%$ $L F \in$
 $1/8 5/8 - N_L C_R^{1/3} \%$ $- 5/8 C_R \oplus 1 V_T L F$ $L F R_s L F N_L 5/8 N^{\circ}$ $1/3 \odot 5/8 - N_L L F \in$
 $1/3 - N_L \in \odot \in L F N_L^{1/3} N^{\circ} \in - 5/8 L F f^{1/3} - N_L \in \forall 1/3 L F N_L \odot N^{\circ 1/3} N_L \in 1/8 L F \in$
 $1/8 1/3 C_R^{3/8} \in 1 \oplus 1/3 L F 1/8 V_T \%$ $1/3 C_R \in 1/3 - N_L \in \oplus \in C_R^{1/3} \%$ $L F \in$ $1/3 - N_L \in 3/8 \in 1/3 2/3 5/8 N_L \in 1/8 L F \in$
 $1/3 - N_L \in 7/8 V_T - \odot 1/3 \%$ $L F \in$ $1/3 - 3/8$ $H_T C_R^{13/8} V_T^{1/8} N_L 1 -$ $H_T V_T N^{\circ} H_T$ $\in - \odot \in 2/3 \in N_L^{1/3} C_R L F P_t$

- “ $V_T C_R^{12/3} \in - 3/8 1$ ■” $\odot 1/3 C_R N^{\circ 1/3}$
- $ff^{5/8} \oplus 1/3$ ■ $\odot 1/3 C_R N^{\circ 1/3 1/8 5/8} V_T N_L \in 1/8 1/3 \%$ $\ddagger - 3/8 V_T L F N_L C_R \in 5/8 L F$ $R N_L^{3/8} P_t$
- $\in C_R P_t$ □ $5/8 3/8 3/8 R_s S L F$ $R^{1/3 2/3 1/3} C_R^{1/3} N_L^{1/3} C_R \in 5/8 L F$ $R N_L^{3/8} P_t$
- ● $R_s \%$ $\odot 1/3 -$ $\odot P_t f f l P_t$
- “ $2/3 2/3 f f l \in 5/8$ $\ddagger - 1/8 P_t$ ”
- $- V_T -$ ■ $\odot 1/3 C_R N^{\circ 1/3 1/8 5/8} V_T N_L \in 1/8 1/3 \%$ $\ddagger - 3/8 V_T L F N_L C_R \in 5/8 L F$ $R N_L^{3/8} P_t$
- “ $2/3 2/3 1 N_L N_L$ ”
- $- \in 1 1/8 1 -$
- $- \in H_T \%$ $\odot 1/3$ $\ddagger - 1/8 P_t$
- “ $N^{\circ} \odot 5/8 -$ $\ddagger - 1/8 P_t$ ”

ff^⓪% €-1/8_R5/81/3_LF€-^⓪ 11/81/8_VT_RF_R5/8-1/85/8_LF 17/8 1/8^⓪_R1-€1/8 3/8€_F5/81/3_LF5/8_LF£
^⓪_R1~~W~~_N^⓪ €- 1/32/32/3_R5/8^⓪€1/3_N5/83/8 -5/8~~W~~ 3/8_R_VT^⓪ 1/3_HT_HT^⓪00€1/81/3_N€1-_LF i“◊“¿£
_R€_LF€-^⓪ 1/31/81/85/8_HT_N_L1/3-1/85/8 1/3-3/8 _VT_HT_N1/3_U5/8 17/8
2/3€1_HT^⓪1/3_RN^⓪1/31/85/8_VT_N€1/81/3^⓪00_LF£ 1/3-3/8 _N^⓪5/8 ^⓪_R1~~W~~€-^⓪ €N^⓪_HT_RN_L1/3-1/85/8 17/8
^⓪5/8-5/8_R€1/8_LF 1/31/8_R1_LF_LF _N^⓪5/8 ^⓪0012/35/8 €_LF 5/8~~N~~_HT^⓪5/81/8_N5/83/8 _N^⓪1 5/8-^⓪1/3-1/85/8 _N^⓪5/8
“1/8_N€^⓪5/8 ■^⓪1/3_RN^⓪1/31/85/8_VT_N€1/81/3^⓪00 ‡-^⓪_R5/83/8€5/8-_N_LF ●1/3_R^⓪_U5/8_N ^⓪_R1~~W~~_N^⓪P_t
‡1~~W~~_H5/8^⓪5/8_R£ _N^⓪5/8 _LF_N_L_R€-^⓪5/8-_N _R5/8^⓪_VT^⓪001/3_N1_RR_S _HT^⓪100€1/8€5/8_LF 1/3-3/8
1/33/8^⓪5/8_R_LF5/8 3/8_R_VT^⓪ _HT_R€1/85/8 1/81-_N_L_R100 _HT^⓪100€1/8€5/8_LF 1/31/8_R1_LF_LF -_VT^⓪_N5/8_R1_V_LF
1/81_VT-_N_L_R€5/8_LF 1/3_R5/8 %0€%5/8%00_R_S _N^⓪1 1/8_VT_R2/3 _N^⓪5/8 ^⓪_R1~~W~~_N^⓪ 17/8 _N^⓪5/8
N^⓪1/3_R^⓪_U5/8_NP_t

Export & Import: All Countries

Export: All Countries

Ampicilline and Its Salts

Unit: KGS

S. No.	Country	Values in Rs. Lacs			Quantity in Thousands		
		2019-2020	2020-2021 (Apr-May(F))	% Growth	2019-2020	2020-2021 (Apr-May(F))	% Growth
1.	AFGHANISTAN TIS	15.64			0.90		
2.	ARGENTINA	259.55	53.65		4.42	1.30	
3.	AUSTRIA	0.00					
4.	BANGLADESH PR	35.46	40.82		0.89	0.70	
5.	BRAZIL	275.10	554.66		1.20	2.44	
6.	BULGARIA		0.00				
7.	BURUNDI	4.61	11.16		0.20	0.50	
8.	BELARUS	193.75			8.45		
9.	TAIWAN	56.32	30.51		3.13	1.60	
10.	COLOMBIA	114.42			4.26		
11.	CYPRUS	115.76	39.85		2.30	0.80	
12.	DOMINIC REP	2.21			0.05		
13.	EGYPT A RP	767.48	188.40		32.71	7.39	
14.	ETHIOPIA	361.72	0.00		20.00	0.01	
15.	FRANCE	101.75			0.98		
16.	GEORGIA	3.23			0.08		
17.	GERMANY	7.06			0.17		
18.	GHANA	502.75	192.23		32.40	11.00	

19.	HUNGARY	11.15			0.60		
20.	INDONESIA	352.68	0.00		20.27		
21.	IRAN	312.10			10.50		
22.	ISRAEL	8.02			0.30		
23.	ITALY	12.74			0.52		
24.	COTE D' IVOIRE	53.40			2.55		
25.	JAPAN	58.14			1.60		
26.	KENYA	1,415.12	81.27		87.82	5.10	
27.	KOREA RP	377.86	126.55		6.61	2.14	
28.	LEBANON	26.30			0.75		
29.	MALAYSIA	38.58	18.47		2.20	0.80	
30.	MYANMAR	0.99			0.04		
31.	MEXICO	915.90	202.33		9.00	2.00	
32.	NEPAL	131.46	3.80		7.63	0.20	
33.	NETHERLAND	400.63	209.74		20.18	9.30	
34.	NIGERIA	3,511.61	505.50		219.90	31.00	
35.	PAKISTAN IR	116.73	20.34		2.99	0.50	
36.	PARAGUAY	2.03	2.10		0.04	0.03	
37.	PERU	0.03					
38.	PHILIPPINES	28.34			0.60		
39.	POLAND	91.80			0.82		
40.	PORTUGAL	21.59	11.34		0.20	0.10	
41.	ROMANIA	428.06	155.82		4.55	1.50	
42.	RUSSIA	367.60	64.12		7.65	1.50	
43.	SERBIA	0.01					
44.	SINGAPORE	3.73	6.03		0.20	0.30	

45.	SOUTH AFRICA	0.08			0.00		
46.	SPAIN	461.35	207.06		4.66	2.00	
47.	SRI LANKA DSR	9.98			0.26		
48.	SUDAN	338.15			19.73		
49.	SYRIA	53.48	149.58		3.50	8.20	
50.	TANZANIA REP	43.95			2.60		
51.	THAILAND	2,834.46	1,179.35		136.65	54.50	
52.	TUNISIA	0.00					
53.	TURKEY	486.99	42.24		14.01	1.00	
54.	UGANDA	60.36			3.50		
55.	U ARAB EMTS	52.40			2.70		
56.	UKRAINE	81.70	40.90		1.00	0.45	
57.	U S A	2.39			0.04		
58.	UZBEKISTAN	48.15			1.30		
59.	VIETNAM SOC REP	422.15	32.86		21.85	1.10	
60.	YEMEN REPUBLIC		8.48			0.40	
61.	ZAMBIA		2.31			0.08	
	Total	16,399.00	4,181.46				
	India's Total	221,985,418.10	22,345,384.17				
	%Share	0.0074	0.0187				

Source: Govt. of India, Ministry of Commerce and Industry, Department of Commerce.

Cephalexin and Its Salts

Unit: KGS

S. No.	Country	Values in Rs. Lacs			Quantity in Thousands		
		2019-2020	2020-2021 (Apr-May(F))	% Growth	2019-2020	2020-2021 (Apr-May(F))	% Growth
1.	ALGERIA	1,896.09	193.67		52.75	5.00	
2.	ARGENTINA	299.14	23.31		8.57	0.60	
3.	AUSTRALIA	3.26			0.05		
4.	BANGLADESH PR	6.03			0.15		
5.	BRAZIL	4,599.65	1,077.86		133.93	28.77	
6.	CAMBODIA	68.86			2.00		
7.	CANADA	113.28	230.85		2.10	5.70	
8.	TAIWAN	810.61	105.69		24.81	3.05	
9.	ECUADOR	4.33			0.10		
10.	EGYPT A RP	353.98	13.50		10.30	0.30	
11.	GERMANY	2.84			0.05		
12.	IRAN	2,775.77			73.00		
13.	JAPAN	318.36			3.64		
14.	JORDAN	607.47	36.79		18.50	1.00	
15.	KENYA	148.47			4.30		
16.	KOREA RP	192.03			4.10		
17.	LEBANON	57.34	24.72		1.60	0.60	
18.	MACEDONIA	6.84			0.15		
19.	MALAYSIA	519.63	351.76		15.50	9.40	

20.	MEXICO	275.52			8.00		
21.	NEPAL	6.54			0.17		
22.	NIGERIA	116.20			3.20		
23.	PERU	5.22			0.13		
24.	PHILIPPINES	592.35			17.70		
25.	SERBIA	68.09			1.83		
26.	SPAIN	835.87	242.27		19.05	6.00	
27.	SRI LANKA DSR	818.30	221.01		21.65	5.50	
28.	SUDAN	855.42	218.02		24.05	5.00	
29.	SYRIA	19.98			0.50		
30.	THAILAND	857.14	559.82		25.30	14.00	
31.	TURKEY	0.23			0.00		
32.	U ARAB EMTS	1,168.52			34.15		
33.	U K	88.63			2.00		
34.	VIETNAM SOC REP	2,096.79	153.33		63.23	4.00	
35.	YEMEN REPUBLIC	4.52			0.10		
	Total	20,593.27	3,452.59				
	India's Total	221,985,418.10	22,345,384.17				
	%Share	0.0093	0.0155				

Source: Govt. of India, Ministry of Commerce and Industry, Department of Commerce.

Ibuprofen with or without Paracetamol or other Compounds

Unit: KGS

S. No.	Country	Values in Rs. Lacs			Quantity in Thousands		
		2019-2020	2020-2021 (Apr-May(F))	% Growth	2019-2020	2020-2021 (Apr-May(F))	% Growth
1.	AFGHANISTAN TIS	375.10	20.01		54.49	1.79	
2.	ANGOLA	639.89	48.53		133.31	4.86	
3.	ARMENIA	2.66			0.02		
4.	AUSTRALIA	4,844.22	1,111.70		209.27	22.11	
5.	BAHAMAS	14.74	0.11		0.39	0.01	
6.	BANGLADESH PR	23.01			1.00		
7.	BELIZE	39.06	23.88		1.14	0.74	
8.	BELGIUM	341.57	80.55		20.16	6.22	
9.	BENIN	430.55	1.07		30.48	0.04	
10.	BHUTAN	10.97	11.90		0.39	0.54	
11.	BOLIVIA	222.38	124.80		23.88	8.72	
12.	BOTSWANA	85.78			2.62		
13.	BULGARIA	0.02			0.00		
14.	BURKINA FASO	311.41	72.64		10.73	3.83	
15.	BURUNDI	136.66	20.72		10.28	1.51	
16.	BELARUS	248.65	44.48		3.59	0.39	
17.	CAMBODIA	134.74	26.61		10.48	1.88	
18.	CAMEROON	651.21	48.09		75.90	3.12	
19.	CANADA	5,570.12	990.72		133.43	7.33	
20.	CAPE VERDE IS	11.20			0.26		

21.	CAYMAN IS	0.11	0.10		0.00	0.01	
22.	C AFRI REP	25.11	1.87		1.58	0.16	
23.	CHAD	21.99			2.49		
24.	CHILE	2,299.79	419.28		135.80	23.43	
25.	CHINA P RP	0.23			0.01		
26.	COMOROS	3.11			0.92		
27.	CONGO P REP	500.66			24.99		
28.	COSTA RICA	715.97	177.54		37.43	1.31	
29.	CROATIA	5.57			0.25		
30.	CZECH REPUBLIC	5,302.29	1,345.84		225.27	15.04	
31.	DENMARK	815.63	446.76		40.65	6.02	
32.	DJIBOUTI	8.13			1.13		
33.	DOMINIC REP	766.90	48.79		25.43	4.09	
34.	ECUADOR	571.48	48.76		25.07	2.57	
35.	EGYPT A RP	47.48			1.37		
36.	EL SALVADOR	656.71	137.04		15.44	1.92	
37.	ETHIOPIA	386.55	47.46		43.20	3.00	
38.	EQUTL GUINEA	3.00	20.77		0.06	1.66	
39.	FIJI IS	4.94	21.43		0.16	0.26	
40.	FRANCE	4,016.55	820.08		352.84	44.39	
41.	GABON	0.01			0.00		
42.	GAMBIA	83.74	1.74		3.94	0.30	
43.	GEORGIA	150.31	77.16		3.28	1.97	
44.	GERMANY	1,773.21	480.75		63.11	9.55	
45.	GHANA	610.88	22.84		43.38	4.20	
46.	GUATEMALA	4,285.89	69.30		106.40	0.48	

47.	GUINEA	456.53	7.70		60.31	1.60	
48.	GUINEA BISSAU	6.92			1.73		
49.	GUYANA	19.72	2.67		2.86	0.38	
50.	HAITI	93.97	93.31		6.44	3.84	
51.	HONDURAS	1,717.94	32.84		59.01	2.71	
52.	HONG KONG	6.08	0.04		0.20	0.00	
53.	HUNGARY	4,343.31	799.89		89.44	6.50	
54.	ICELAND	17.65	17.69		0.20	0.16	
55.	IRAN	0.06			0.00		
56.	IRAQ	404.36	41.98		51.25	1.81	
57.	IRELAND	136.10			16.44		
58.	ISRAEL	31.84			2.00		
59.	ITALY	19.31			1.54		
60.	COTE D' IVOIRE	0.22	0.36		0.01	0.03	
61.	JAMAICA	31.04	2.60		1.52	0.09	
62.	JORDAN	787.83	56.33		40.90	3.06	
63.	KAZAKHSTAN	163.05			6.51		
64.	KENYA	865.20	130.79		49.97	7.73	
65.	KIRIBATI REP		4.31			0.06	
66.	KYRGHYZSTAN	41.62	9.09		2.25	0.40	
67.	KOREA RP	2.67			2.46		
68.	LAO PD RP	3.37			1.53		
69.	LATVIA	36.00	51.77		1.03	0.40	
70.	LEBANON	73.82			3.60		
71.	LESOTHO	70.02	2.28		2.39	0.19	
72.	LIBERIA	242.95	52.27		14.59	3.50	

73.	LIBYA	2.99			0.11		
74.	MADAGASCAR	542.87	58.12		49.08	4.97	
75.	MALAWI	258.76	9.27		13.96	0.77	
76.	MALAYSIA	0.39	4.21		0.01	0.01	
77.	MALDIVES	2.46	1.15		0.19	0.09	
78.	MALI	265.08	40.88		33.97	2.49	
79.	MALTA	481.20	47.63		27.76	2.90	
80.	MAURITANIA	35.07			4.47		
81.	MAURITIUS	40.33	7.36		2.87	0.42	
82.	MYANMAR	500.94	107.58		30.38	3.82	
83.	MOLDOVA	2.02			0.01		
84.	MONGOLIA	6.37			0.56		
85.	MOROCCO	0.07			0.00		
86.	MOZAMBIQUE	206.89	30.51		16.09	1.55	
87.	NAMIBIA	130.92			6.31		
88.	NEPAL	1,365.44	203.52		139.37	16.01	
89.	NETHERLAND	1,741.69	204.86		64.41	3.66	
90.	NETHERLANDANTIL	43.65			2.63		
91.	NEW ZEALAND	1,016.53	248.63		40.37	3.73	
92.	NICARAGUA	2,445.08	33.47		82.43	1.75	
93.	NIGER	33.98	94.84		2.50	3.07	
94.	NIGERIA	2,835.73	648.65		308.61	28.11	
95.	OMAN	1.79			0.23		
96.	PANAMA REPUBLIC	1.83			0.00		
97.	PAPUA N GNA	80.64	27.20		3.89	0.95	
98.	PERU	88.72	10.41		6.22	0.24	

99.	PHILIPPINES	60.84	4.64		4.81	0.26	
100.	POLAND	145.36			3.62		
101.	PORTUGAL	31.70			1.50		
102.	QATAR	12.37			0.22		
103.	RUSSIA	13,098.71	1,999.82		624.72	11.73	
104.	RWANDA	552.64	1.77		29.51	0.26	
105.	SAUDI ARAB	1.79			0.13		
106.	SERBIA	16.48			0.04		
107.	SENEGAL	340.52	64.84		35.10	5.18	
108.	SEYCHELLES	0.40	0.09		0.03	0.01	
109.	SIERRA LEONE	226.01	81.92		22.60	7.83	
110.	SINGAPORE	48.51	20.42		7.14	0.26	
111.	SOMALIA	207.59	11.51		32.84	0.73	
112.	SOUTH AFRICA	5,326.25	883.49		209.01	29.18	
113.	SPAIN	1,089.71	287.22		44.96	3.54	
114.	SRI LANKA DSR	240.36	17.71		24.22	1.06	
115.	ST KITT N A	0.30			0.01		
116.	ST LUCIA	0.97			0.05		
117.	SUDAN	34.29	9.94		1.60	0.75	
118.	SURINAME	7.11			1.00		
119.	SWAZILAND	15.05	0.66		0.66	0.05	
120.	SYRIA	14.37	0.50		0.20	0.02	
121.	TAJKISTAN	124.89	13.94		22.81	0.60	
122.	TANZANIA REP	722.57	118.14		78.59	5.14	
123.	THAILAND	192.18	59.46		9.41	0.45	
124.	TOGO	152.24	0.87		9.45	0.07	

125.	TONGA	5.51			0.25		
126.	TRINIDAD	21.52	16.14		1.46	0.86	
127.	TURKEY	143.39	29.65		15.17	12.62	
128.	TURKMENISTAN	358.34	27.87		31.80	2.30	
129.	UGANDA	554.86	27.60		67.79	3.27	
130.	U ARAB EMTS	351.67	76.01		28.44	1.78	
131.	U K	8,271.63	1,825.43		444.32	35.70	
132.	UKRAINE	961.82			6.31		
133.	U S A	59,005.97	13,361.14		1,841.77	173.84	
134.	UZBEKISTAN	1,787.30	164.20		115.99	2.78	
135.	VANUATU REP	13.80			0.40		
136.	VENEZUELA	62.54	14.18		2.20	1.46	
137.	VIETNAM SOC REP	53.01	26.18		5.59	0.31	
138.	SAMOA	1.46			0.06		
139.	YEMEN REPUBLC	465.75	49.50		77.68	2.39	
140.	CONGO D. REP.	1,265.99	502.20		101.50	21.03	
141.	ZAMBIA	283.92	97.58		17.69	4.86	
	Total	155,124.89	29,692.14				
	India's Total	221,985,418.10	22,345,384.17				
	%Share	0.0699	0.1329				

Source: Govt. of India, Ministry of Commerce and Industry, Department of Commerce.

Other Cyclic Amides and Thr Drvts And Salts

Unit: KGS

S. No.	Country/Region	Values in US\$ Million			Quantity in Thousands		
		2021-2022	2022-2023(Apr-Jan)	%Growth	2021-2022	2022-2023(Apr-Jan)	%Growth
1.	AFGHANISTAN	0.00	0.00		0.13	0.13	
2.	ALBANIA	0.00			0.03		
3.	ALGERIA	0.61	0.46		5.44	0.88	
4.	ANGOLA		0.02			1.45	
5.	ARGENTINA	2.56	2.05		23.44	13.50	
6.	AUSTRALIA	0.07	0.03		10.16	2.26	
7.	AUSTRIA	4.50	3.62		38.10	25.00	
8.	BANGLADESH PR	1.06	1.75		15.57	23.36	
9.	BELGIUM	3.82	7.17		403.69	616.26	
10.	BHUTAN	0.01	0.01		0.50	0.25	
11.	BOLIVIA	0.02	0.02		0.23	0.14	
12.	BOSNIA-HRZGOVIN	0.00	0.09			0.03	
13.	BRAZIL	9.91	9.62		51.38	49.31	
14.	BULGARIA	8.00	3.14		5.78	2.96	
15.	BURKINA FASO						
16.	BELARUS	0.05	0.28		0.03	0.43	
17.	CAMBODIA	0.00			0.03		
18.	CAMEROON		0.00			0.01	
19.	CANADA	3.50	1.69		44.26	12.30	
20.	CHILE	0.04	0.03		1.51	1.70	
21.	TAIWAN	9.37	4.09		422.52	228.46	
22.	CHINA P RP	16.08	10.57		866.03	391.43	

23.	COLOMBIA	0.71	0.19		22.53	8.54	
24.	COSTA RICA	0.02	0.02		0.33	0.17	
25.	CROATIA	0.37	0.44		0.42	0.68	
26.	CUBA	0.27			1.10		
27.	CYPRUS	0.65	1.03		3.14	8.82	
28.	CZECH REPUBLIC	0.14	0.44		1.34	2.68	
29.	DENMARK	0.00	0.00			0.00	
30.	DJIBOUTI	0.00	0.00		0.25	0.00	
31.	DOMINIC REP	0.02	0.05		0.31	0.65	
32.	DOMINICA	0.03			0.01		
33.	ECUADOR	0.02	0.03		0.43	0.63	
34.	EGYPT A RP	2.48	2.18		47.55	43.59	
35.	EL SALVADOR	0.02			0.10		
36.	ESTONIA		0.02			0.00	
37.	ETHIOPIA	0.03	0.04		0.26	0.77	
38.	ERITREA	0.00					
39.	FINLAND	0.04	0.08		0.01	0.33	
40.	FRANCE	1.95	1.46		61.15	56.88	
41.	GABON					0.01	
42.	GERMANY	6.24	12.26		415.65	312.62	
43.	GHANA	0.13	0.10		2.43	1.35	
44.	GREECE	1.74	3.61		21.01	56.73	
45.	GUATEMALA	0.02	0.04		0.12	0.24	
46.	HONDURAS	0.00					
47.	HONG KONG	0.05	0.01		0.52	0.06	
48.	HUNGARY	0.46	0.55		1.78	2.41	
49.	INDONESIA	8.43	1.13		305.27	92.83	

50.	IRAN	0.03	0.00		0.08	0.04	
51.	IRAQ	0.07	0.09		0.12	0.26	
52.	IRELAND	12.00	5.80		16.00	7.14	
53.	ISRAEL	1.26	0.78		14.18	11.34	
54.	ITALY	1.90	0.90		43.28	19.03	
55.	COTE D' IVOIRE	0.09	0.20		3.51	8.00	
56.	JAPAN	10.82	14.27		179.35	192.15	
57.	JORDAN	0.28	0.44		2.54	4.18	
58.	KAZAKHSTAN	0.01	0.02		0.40	0.57	
59.	KENYA	0.17	0.08		20.02	8.13	
60.	KOREA RP	11.49	6.64		182.43	91.14	
61.	LATVIA	0.04	0.01		0.55	0.10	
62.	LEBANON	0.13	0.15		1.57	2.33	
63.	LIBYA		0.13			9.00	
64.	LITHUANIA		0.00			0.03	
65.	MACEDONIA	0.29	0.36		0.87	1.05	
66.	MADAGASCAR	0.00	0.01		0.03	0.32	
67.	MALAWI	0.00	0.00		0.03	0.13	
68.	MALAYSIA	0.07	0.73		0.78	1.76	
69.	MALTA	1.12	0.62		11.08	0.19	
70.	MYANMAR		0.00			0.03	
71.	MEXICO	5.54	5.21		96.77	108.64	
72.	MOLDOVA	0.00			0.01		
73.	MOROCCO	0.33	0.06		1.87	0.49	
74.	MOZAMBIQUE	0.04	0.01		0.09	0.03	
75.	NEPAL	0.11	0.10		3.00	6.21	
76.	NETHERLAND	7.17	13.04		451.54	362.06	

77.	NEW ZEALAND		0.00			0.12	
78.	NICARAGUA	0.01			0.05		
79.	NIGERIA	0.37	0.11		14.90	6.15	
80.	NORWAY	58.62	57.27		3,905.13	3,770.32	
81.	OMAN	2.27	0.68		46.27	15.96	
82.	PAKISTAN IR	1.38	0.82		27.73	17.70	
83.	PANAMA REPUBLIC	0.02			0.42		
84.	PARAGUAY	0.09	0.08		0.78	0.83	
85.	PERU	0.38	0.83		4.88	6.49	
86.	PHILIPPINES	0.08	0.09		10.08	1.86	
87.	POLAND	1.34	0.88		13.62	11.50	
88.	PORTUGAL	0.16	0.28		1.86	2.22	
89.	PUERTO RICO		0.08			0.35	
90.	QATAR	0.00			0.02		
91.	ROMANIA	0.05	0.06		0.70	0.52	
92.	RUSSIA	2.25	3.52		75.04	40.13	
93.	RWANDA	0.01			0.50		
94.	SAUDI ARAB	2.76	1.11		37.72	8.92	
95.	SERBIA	0.02	0.02		0.12	0.10	
96.	SIERRA LEONE	0.01			1.00		
97.	SLOVAK REP	0.00					
98.	SINGAPORE	0.18	0.06		41.66	16.52	
99.	SLOVENIA	0.44	0.46		6.16	7.05	
100.	SOMALIA		0.01			0.71	
101.	SOUTH AFRICA	0.32	0.01		19.29	0.23	
102.	SPAIN	3.55	2.29		177.03	77.35	
103.	SRI LANKA DSR	0.06	0.02		13.31	0.34	

104.	SUDAN	0.00	0.01		0.03	0.22	
105.	SWEDEN	0.18			12.10		
106.	SWITZERLAND	22.68	14.84		821.24	464.10	
107.	TANZANIA REP	0.29	0.19		40.33	30.13	
108.	THAILAND	0.78	0.67		22.29	22.19	
109.	TRINIDAD		0.00			0.02	
110.	TUNISIA	0.13	0.02		2.30	0.30	
111.	TURKEY	1.96	1.68		91.03	13.59	
112.	UGANDA		0.00			0.00	
113.	U ARAB EMTS	2.89	3.43		34.05	54.69	
114.	U K	2.59	2.33		102.96	83.67	
115.	UKRAINE	0.01	0.00		0.05	0.01	
116.	U S A	40.98	27.06		2,571.48	1,981.22	
117.	URUGUAY	0.21	0.17		3.08	2.30	
118.	UZBEKISTAN	0.03	0.03		0.26	0.15	
119.	VENEZUELA	0.02	0.01		2.42	0.17	
120.	VIETNAM SOC REP	0.37	0.41		5.01	3.64	
121.	YEMEN REPUBLC	0.01	0.05		0.25	0.79	
122.	CONGO D. REP.	0.02	0.04		1.50	2.83	
123.	ZAMBIA	0.02	0.01		0.82	0.65	
124.	ZIMBABWE	0.01	0.01		0.01	0.03	
	Total	283.90	237.62				
	India's Total	422,004.40	372,117.75				
	%Share	0.0673	0.0639				

Source:Govt. of India, Ministry of Commerce and Industry, Department of Commerce.

Import: All Countries

Ampicilline and Its Salts

Unit: KGS

S. No.	Country	Values in Rs. Lacs			Quantity in Thousands		
		2019-2020	2020-2021 (Apr-May(F))	% Growth	2019-2020	2020-2021 (Apr-May (F))	% Growth
1.	CHINA P RP	327.69			12.77		
2.	HONG KONG	308.85			3.00		
3.	RUSSIA		66.99			1.00	
4.	TURKEY	32.33			0.50		
5.	U S A	0.75			0.00		
	Total	669.62	66.99				
India's Total		336,095,445.61	29,848,219.32				
%Share		0.0002	0.0002				

Source:Govt. of India, Ministry of Commerce and Industry, Department of Commerce.

Cephalexin and Its Salts

Unit: KGS

S. No.	Country	Values in Rs. Lacs			Quantity in Thousands		
		2019-2020	2020-2021 (Apr-May(F))	% Growth	2019-2020	2020-2021 (Apr-May(F))	% Growth
1.	BELGIUM	269.55			6.60		
2.	CHINA P RP	1,002.75			27.40		
3.	ITALY	0.03					
4.	NETHERLAND	1,948.78	179.79		48.00	4.40	
5.	SPAIN	10,603.89	3,209.00		290.31	78.90	
	Total	13,825.01	3,388.79				
India's Total		336,095,445.61	29,848,219.32				
%Share		0.0041	0.0114				

Source: Govt. of India, Ministry of Commerce and Industry, Department of Commerce.

Ibuprofen with or without Paracetamol or other Compounds

Unit: KGS

S. No.	Country	Values in Rs. Lacs			Quantity in Thousands		
		2019-2020	2020-2021 (Apr-May(F))	% Growth	2019-2020	2020-2021 (Apr-May(F))	% Growth
1.	FRANCE	0.52			0.00		
2.	GAMBIA	3.39			0.03		
3.	GERMANY	185.49			0.86		
4.	NAMIBIA	0.07			0.00		
5.	SPAIN	0.03			0.00		
6.	TURKEY	49.74			0.40		
7.	U K	102.81			0.31		
8.	U S A	0.38			0.01		
	Total	342.44					
India's Total		336,095,445.61	29,848,219.32				
%Share		0.0001					

Source: Govt. of India, Ministry of Commerce and Industry, Department of Commerce.

Other Cyclic Amides and Thru Drvts and Salts

Unit: KGS

S. No.	Country/Region	Values in US\$ Million			Quantity in Thousands		
		2021-2022	2022-2023(Apr-Jan)	%Growth	2021-2022	2022-2023(Apr-Jan)	%Growth
1.	ARGENTINA	0.23			0.39		
2.	AUSTRALIA	0.00					
3.	AUSTRIA	0.03			0.44		
4.	BELGIUM	0.01	0.08		1.94	7.14	
5.	BRAZIL	0.03			0.69		
6.	BRUNEI	0.41	0.20		81.98	31.10	
7.	CANADA	0.00	0.00		0.00	0.01	
8.	TAIWAN	0.00	0.00		0.06	0.00	
9.	CHINA P RP	137.42	132.36		15,592.43	10,963.91	
10.	DENMARK						
11.	FINLAND		0.15			1.67	
12.	FRANCE	0.93	0.71		52.80	31.40	
13.	GERMANY	3.55	2.64		697.27	336.04	
14.	GREECE	0.67	0.44		1.49	1.02	
15.	HONG KONG	4.43	2.09		31.02	7.24	
16.	INDONESIA	0.00			0.03		
17.	IRELAND	0.16	0.03		1.42	0.01	
18.	ISRAEL	0.22	0.21		34.00	8.44	
19.	ITALY	11.45	10.84		45.99	40.25	
20.	JAPAN	1.17	2.60		102.77	265.18	
21.	KOREA RP	0.14	0.04		13.86	3.70	
22.	LATVIA	0.02	0.01			0.00	
23.	LUXEMBOURG	0.00			0.26		

24.	MACEDONIA	0.06			0.20		
25.	MALTA	1.25	0.67		0.07	0.03	
26.	MEXICO	0.08			0.50		
27.	NETHERLAND	0.00	0.10		0.01	9.68	
28.	NORWAY	4.30	0.81		53.02	9.91	
29.	POLAND	0.44	0.31		3.33	2.62	
30.	PORTUGAL	0.00					
31.	SAUDI ARAB	0.06			44.00		
32.	SINGAPORE	1.84	0.05		12.39	1.05	
33.	SLOVENIA		0.00			0.00	
34.	SPAIN	0.88	1.69		12.60	13.31	
35.	SWITZERLAND	2.32	0.40		3.84	1.40	
36.	THAILAND		0.31			0.11	
37.	TURKEY	0.03	0.00		16.00		
38.	U K	0.69	0.51		0.46	4.38	
39.	UKRAINE	0.00			0.00		
40.	U S A	5.66	7.78		69.80	70.92	
	Total	178.49	165.01				
India's Total		613,052.05	602,430.49				
%Share		0.0291	0.0274				

Source:Govt. of India, Ministry of Commerce and Industry, Department of Commerce.

Financials & Comparison of Major Indian Players/Companies

Source: CMIE

About Financial Statements of CMIE Database

A reasonably comprehensive list of all the information is listed in this flattened structure. The list reflects the usual disclosures made by companies. It is long as it tries to capture as much of granular information as possible.

Separately, CMIE database captures the disclosures made by companies in their Annual Reports according to the various Accounting Standards specified by the Institute of Chartered Accountants of India and according to the stipulations of the Reserve Bank of India.

There is an overlap of information presented and the disclosures as per the Accounting Standards and RBI stipulations. The data is normalised as per the CMIE database methodology and the rest is captured without normalisation since these presentations are highly standardised.

Profits & Appropriations

Description:

There are various measures of profits of companies. These are either gross or net of depreciation, amortisation, interest payments, direct taxes, prior-period and extra-ordinary transactions, etc. All measures of profits are essentially derived from the entries made under income and expenses in the CMIE database. Since all sources of income and all heads of expenses are captured comprehensively in CMIE database, it is possible to derive the various measures of profits from these.

Profit after tax is an atomic indicator in CMIE database. The rest of the profit measures are all derived indicators. The profits after tax and all other measures of profits as derived from the database may differ from the profits as presented by the company. The most likely cause for this difference is the treatment of transactions pertaining to prior periods or because of extra-ordinary transactions during a year.

As mentioned earlier, profit after tax is an atomic Indicator in CMIE database. All other measures of profits are derived Indicators and these are presented in Measures of Profits under Derived Indicators of Profits. Some of these are applicable only to finance companies. These are PBPDTA and PBPT and their variants. PBDITA and its variants are applicable only to non-finance companies. The other two derived measures of profits used in CMIE database are PBT and Cash profits. These are applicable to all kinds of companies like PAT and its variants.

The term "variants" used earlier refers to the various income and expense items that are netted out to derive measures of profits that are often more useful than the profit measures gross of these.

For example, one of the variants is the suffix "net of P&E". "P&E" is prior period and extra-ordinary transactions. Profits are reduced by the net income from prior period and extra-ordinary transactions to ensure that the profits reflect transactions of the current year. Other variant suffixes are "net of P&E&OI", which is net of prior period and extra-ordinary transactions and net of other income; and, "net of P&E&OI&FI", which is net of prior period and extra-ordinary transactions, net of other income and net of financial services incomes.

All these variants for the various profit measures are presented under Measures of Profits.

Derived Indicators of Profits includes one set of measures under Distribution of Profits. There are distributions of four measures of profits. These are - PBDITA, PBPDTA, PBPT and PAT. While the distribution of PAT shows the share of dividends and retained profits, the rest show the share of PAT and other components of the measures of profits. For example, PBDITA consists of provisions, write-offs, depreciation, amortisation, interest and PAT.

Profitability ratios are derived Indicators based on measures of profits, income and assets and liabilities. Over 35 such measures are provided in the CMIE database. These are divided into two parts - profit margins of income and returns over investments.

A number of Indicators that are used in the derivation of the sources of growth in profits are presented under the sub-part Sources of growth in profits. There are three measures of profits for which these Indicators are provided - PBDITA, PBT and PAT. Growth itself is computed at run-time and is not stored in CMIE database. However, these Indicators are used to understand the sources of growth in the three measures of profits. This understanding is based on a simple but useful arithmetical construct.

Total Liabilities

Description:

Total liabilities of a company are the sum of all the resources deployed by it. It includes all sums it owes to the shareholders in the form of share capital and reserves and surpluses, all sums it owes its lenders in the form of secured and unsecured loans and all current liabilities and provisions. It includes deferred tax liability.

In the CMIE database, total liabilities balance total assets and, total liabilities is the sum of the following:

1. Paid up shares and similar capital such as, forfeited equity capital, paid up preference capital, capital contribution, convertible warrants and minority interest reserves.
2. Reserves and funds, net of accumulated losses, if any. These include premium reserves, capital redemption reserves, revaluation reserves, employee stock option reserves, general reserves and balance as per profit and loss statement. While revaluation reserves is included here, in most presentations of CMIE database, it is netted out.
3. Borrowings
4. Current liabilities & Provisions
5. Deferred tax liability

The Annual Report provides a lot of information besides a structured presentation as outlined above. For example, it provides details of the authorised capital, issued and subscribed capital, number of shares issued, details of buy-backs, etc. All of this is covered under the Addendum information of Liabilities.

CMIE database makes fine distinctions in defining share holders funds and net worth. It defines free and specific reserves and capital employed clearly so that the same definitions apply to all companies. All of this some more Indicators are presented in Derived Indicators of Liabilities.

Derived Indicators also include an entire section "Secured & unsecured borrowings". This section helps in the selection of Indicators relating to borrowings directly. The presentation in the main listing of all Indicators has one list of secured borrowings with its detailed break-up and another list of unsecured borrowings with its detailed break-up.

As a result, the selection of total bank borrowings implied always adding secured bank borrowings and unsecured bank borrowings. To avoid the tedium, the Derived Indicators of Liabilities includes this section that provides the secured and unsecured borrowings for most of the frequently used borrowing items.

Total Assets

Description:

Total assets is a sum total of all the assets held by a company as on the last day of an accounting period. An asset is recognised in the balance sheet when it is probable that the future economic benefits associated with it will flow to the enterprise. As per Part I of Schedule VI of Companies Act 1956, assets are required to be disclosed under the heads Fixed Assets, Investments, Current Assets, Loans and Advances and Miscellaneous Expenditure not written off. This data field is broadly the sum of the amounts disclosed under each of these assets. Computationally and more precisely, this is the sum of the following data fields:

- Net fixed assets
- Capital work in progress and net pre-operative expenses pending allocation, if any
- Investments
- Inventories
- Receivables
- Loans & advances
- Cash & bank balances
- Deferred tax assets
- Miscellaneous expenses not written off

Net Cash Flow from Operating Activities

Description:

Cash flow from operating activities is the cash generated from the main or primary business activities of the company. A company can present the cash flow statement under the direct or indirect method of presentation. This data field provides the amount of cash flow generated from operating activities, which is calculated, under the indirect method.

Under indirect method, the net profit or loss before tax and extraordinary income is used to calculate the amount of net cash flow generated from operating activities. In other words, the indirect method adjusts net income for items that affected reported net income but did not affect cash. Since income statement is prepared on an accrual basis, in which revenue is recognized when earned and not when received, net income does not represent the net cash flow from operating activities and it is necessary to adjust it for those items which affect net income although no actual cash has been paid or received against them.

To compute net cash flows from operating activities, non cash charges in the income statement are added back to net income, and non cash incomes deducted. Further, cash flows on account of changes in the working capital of the company are included.

When accounts receivable increase during the year, revenues on an accrual basis are higher than on a cash basis because goods sold on account are reported as revenues. In other words, operations for the period led to increased revenues, but not all of these revenues resulted in an increase in cash. Some of the increase in revenues resulted in an increase in accounts receivable. To convert net income to net cash flow from operating activities, the increase in accounts receivable must be deducted from net income.

When accounts payable increase during the period, expenses on an accrual basis are higher than they are on a cash basis because expenses are incurred for which payment has not taken place. To convert net income to net cash flow from operating activities, the increase in accounts payable must be added back to net income.

Cash flows from operating activities are obtained, broadly, by the following method:

Add: Net Profit before tax and extraordinary incomes **Add:** Non-cash Expenses (Depreciation, Amortization, Provisions made, write offs) **Less:** Non-cash Incomes (provisions written back) **Add:** Non-operating Expenses (Interest paid) **Less:** Non-operating Incomes (Interest, dividend income) **Add:** Non-operating Losses (Loss on Sale of Non-Current Assets, Foreign exchange losses) **Less:** Non-operating Gains (Gain on Sale of Non-Current Assets, Foreign exchange gains)

Section –I

This section comprises of selected companies with their contact details. These companies have major market share in their respective field.

Name of Company with Contact Details

Company Name	Address 1	Address 2	City	Pin code	State	Telephone Number	Fax Number	Email	Web Address
Alpha Remedies Ltd.	65, Dharampeth Extn.,	Shandinagar,	Nagpur	440010	Maharashtra	2249574		atulsbarhate@gmail.com	
Ankur Drugs & Pharma Ltd.	C-306, Crystal Plaza, Andheri (West),	Link Road, Andheri (West),	Mumbai	400053	Maharashtra	40682300	40682323	srane@ankurdrugs.com	www.ankurdrugs.com
Aurobindo Pharma Ltd.	Plot No.2, Maitrivihar	Ameerpet,	Hyderabad	500038	Telangana	23736370	23747340	info@aurobindo.com	www.aurobindo.com
Cian Healthcare Ltd.	Milkat No.3339, Block No.1, From South Side,	C S No.227/2+3 A Harpale Park, Opp. Bergerpaint,	Pune	412308	Maharashtra	26982792	26982792	cianhealthcare@yahoo.co.in	www.cian.co.in
Cipla Ltd.	Cipla House, Peninsula Business Park,	Ganpatrao Kadam Marg, Lower Parel,	Mumbai	400013	Maharashtra	24826000	24826120	contactus@cipla.com	www.cipla.com
Dr. Reddy'S Laboratories Ltd.	8-2-337, Road No.3,	Banjara Hills,	Hyderabad	500034	Telangana	49002900	49002999	shares@drreddys.com	www.drreddys.com
Farmson Pharmaceutical Gujarat Pvt. Ltd.	Plot No. 14, GIDC Industrial Estate,	Nandesari,	Vadodara	391340	Gujarat	2840612	2841377	finance@farmson.com	www.farmson.com
Glaxosmithkline Pharmaceuticals Ltd.	Dr. Annie Besant Road, Worli,		Mumbai	400030	Maharashtra	24959595	24959494	askus@gsk.com	www.gsk-india.com
Indoco Remedies Ltd.	Indoco House, 166, C S T Road,	Kalina, Santacruz (East),	Mumbai	400098	Maharashtra	26541851	26520787	sunil.joshi@indoco.com	www.indoco.com
Pan Drugs Ltd.	167-168 GIDC Industrial Estate,	Nandesari,	Vadodara	391340	Gujarat	3062020	3062500	info@pandrugsltd.com	www.pandrugsltd.com
Piramal Enterprises Ltd.	Piramal Ananta, Agastya Corp. Park, Opp. Fire Brigade,	Kamini Junction, LBS Marg, Kurla (West),	Mumbai	400070	Maharashtra	38023000	38023084		
Sanofi India Ltd.	Sanofi House, CTS No.117-B,	L & T Business Park, Saki Vihar Road,	Mumbai	400072	Maharashtra	28032000	28032939	igrc.sil@sanofi.com	www.sanofiindia.com

		Powai,							
Sri Krishna Pharmaceuticals Ltd.	C-4, Industrial Area, Uppal,		Hyderabad	500039	Telangana	27201101	27204470	nsk@srikrishna.com	www.srikrishna.com
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.	12th Floor, Commerz II, International Business Park,	Oberoi Garden City, Western Highway,	Mumbai	400063	Maharashtra				
Triton Laboratories Ltd.	8-3-1066, Plot No. 11,	Srinagar Colony,	Hyderabad	500073	Telangana	3748834			

Name of Director(S)

Company Name	Date	Director Name
Alpha Remedies Ltd.	3/31/2018	ANIL DIVAKARAN NAIR
		ATUL S BARHATE
		MANJIT SINGH SAWHNEY
		PREETIINDER SINGH B SETHI
		RAJESH GOVINDRAM BHATIA
Ankur Drugs & Pharma Ltd.	3/31/2012	ANIL KUMAR KHADKE
		DILEEP H SHINDE
		GIRRAJ VIJAYVARGIYA
		PURNANDU JAIN
		RAMESH BATHAM
		S C RANE
Aurobindo Pharma Ltd.	3/31/2019	AVNIT BIMAL SINGH
		B ADI REDDY
		K NITYANANDA REDDY
		K RAGUNATHAN
		M MADAN MOHAN REDDY
		M SITARAMA MURTHY
		M SIVAKUMARAN (DR.)
		N GOVINDARAJAN
		P SARATH CHANDRA REDDY
		P V RAMAPRASAD REDDY
		SANTHANAM SUBRAMANIAN
		SAVITA MAHAJAN
Cian Healthcare Ltd.	3/31/2019	CHANDRA PRAKASH SINGH
		JAYANT V TILLOO
		PADMANABHAN BALASUBRAMANIAM
		PANKAJ SHRINIWAS ZANWAR
		RIYAZ B KHAN
		SMITA KHANNA
		SURAJ SHRINIWAS ZANWAR
		USHA JASWANI
Cipla Ltd.	3/31/2019	ADIL ZAINULBHAI
		ASHOK SINHA
		IREENA VITTAL (MS.)

		KEDAR UPADHYE
		M K HAMIED
		NAINA LAL KIDWAI (MS.)
		PETER LANKAU
		PETER MUGYENYI (DR.)
		PUNITA LAL (MS.)
		RAJENDRA CHOPRA
		S RADHAKRISHNAN
		SAMINA VAZIRALLI (MS.)
		UMANG VOHRA
		Y K HAMIED (DR.)
Dr. Reddy'S Laboratories Ltd.	3/31/2019	ALLAN OBERMAN
		ANUPAM PURI
		BHARAT N DOSHI
		BRUCE L A CARTER
		G V PRASAD
		HANS PETER HASLER
		K SATISH REDDY
		KALPANA MORPARIA
		LEO PURI
		OMKAR GOSWAMI (DR.)
		PRASAD R MENON
		SANDEEP PODDAR
		SAUMEN CHAKRABORTY
		SHIKHA SHARMA
		SRIDAR IYENGAR
Farmson Pharmaceutical Gujarat Pvt. Ltd.	3/31/2019	ANJU SINGH
		ANNIE RATHOD
		HARISHCHANDRA NAGJIBHAI PATEL (DR.)
		KAVITA SHUKLA
		KOMAL SAMIR PATEL (MRS.)
		N K PATEL
		SAMIR K PATEL
		SHEELA G NAIR
		SHUBHANGINI MAHATRE
		SUCHI BHATT
		SUDHESH A MISHRA
		VINIT S MENON

Glaxosmithkline Pharmaceuticals Ltd.	3/31/2019	A A NADKARNI
		A BANSAL
		A N ROY
		A VAIDHEESH
		D S PAREKH
		D SUNDARM
		MARC JONES
		NIHAL KAVIRATNE
		P THAKUR
		P V BHIDE
		R C SEQUEIRA
		R KRISHNASWAMY
		R R BAJAJ
		R S KARNAD
		SUBESH WILLAMS
Indoco Remedies Ltd.	3/31/2019	ADITI KARE PANANDIKAR
		ANAND NADKARNI
		ANIL M NAIK
		D M GAVASKAR
		JAYSHANKAR MENON
		MANDAR BORKAR
		RAJIV KAKODKAR
		SHARAD P UPASANI
		SUNDEEP V BAMBOLKAR
		SURESH KARE
Pan Drugs Ltd.	3/31/2013	ATUL PANDYA
		HEMANT UPADHYAY
		KAMAL N PANDYA
		PARAG VAMANRAY RAVAL
Piramal Enterprises Ltd.	3/31/2019	AJAY G PIRAMAL
		ANAND PIRAMAL
		ARUNDHATI BHATTACHARYA (MRS.)
		DEEPAK SATAWALEKAR
		GAUTAM BANERJEE
		GOVERDHAN MEHTA (PROF.)
		KEKI DADISETH
		LEONARD D'SOUZA
		N VAGHUL

		NANDINI PIRAMAL
		R A MASHELKAR
		S RAMADORAI
		SIDDHARTH METHA
		SWATI A PIRAMAL (DR.)
		VIJAY SHAH
		VIVEK VALSARAJ
Sanofi India Ltd.	12/31/2019	A SOOD
		ADITYA NARAYAN
		CHARLES BILLARD
		CHERIAN MATHEW
		CYRIL GRANDCHAMP
		GIRISH TEKCHANDANI
		N RAJARAM
		RANGASWAMY R LYER
		SHAILESH AYYANGAR (DR.)
		THOMAS ROUCKOUT
		USHA THORAT
Sri Krishna Pharmaceuticals Ltd.	3/31/2019	C GOPALA KRISHNAN MURTY
		PRANESH RAJ MATHUR
		SHILPA BUNG
		V SATYAVATHI
		V V SUBBA REDDY
		VEMPALLI VENKATA KRISHNA REDDY
		VENKATESWAR RAO SARVEPALLI
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.	3/31/2019	GAURAV MATHUR
		PRAMOD GHORPADE
		RAGHUNATHAN ANANTHANARAYANAN
Triton Laboratories Ltd.	3/31/2000	C KRISHNA PRASAD
		C UMA DEVI (SMT.)

Plant Capacity

Company Name	Product/Raw Material name	Year ended	Capacity	Capacity - Unit	Production	Production - Unit	Sales quantity	Sales quantity - Unit	Sales value
		Date	units		units		units		Rs. Million
Alpha Remedies Ltd.	INTEREST	200903							0.1
	PARACETAMOL	200903							185.5
Ankur Drugs & Pharma Ltd.	BULK DRUGS	201203							22.8
	CAPSULES FORMULATION	201203							64.9
	DRY POWDER INJECTABLE	201203							0.7
	DRY SYRUPS FORMULATION	201203							200.2
	EFFERVESCENT TABLETS	201203							77.5
	FORM FILL & SEAL	201203							16.5
	INTEREST	201203							1.6
	JOB WORK	201203							112.1
	LIQUID FORMULATION	201203							384.7
	LIQUID INJECTABLE	201203							5.9
	OINTMENTS	201203							27.4
	ORAL POWDER	201203							2.1
	ORAL STRIP/PATCHES	201203							2
	TABLETS FORMULATION	201203							706.4
Aurobindo Pharma Ltd.	BULK DRUGS & INTERMEDIATES	201903							
	CAPSULES & TABLETS	201903							119226.3
	DIVIDEND	201903							790.8
	INJECTABLES	201903							
	INTEREST	201903							114.4
	OTHERS	201903							
	SCRAP	201903							154.7
	SERVICES	201903							160.7
	SYRUPS	201903							

	TRADING GOODS	201903							
Cian Healthcare Ltd.	PHARMACEUTICALS								
	MEDICINAL CHEM & BOTANICAL PROD	201903							693.1
Cipla Ltd.	AEROSOLS	201903							
	AEROSOLS/INHALATION DEVICES	201903							
	ANDA & OTHER PRODUCT LICENCE	201903							720
	BULK DRUGS	201903							
	BULK DRUGS (TRADED)	201903							
	CORPORATE GUARANTEE COMMISSION	201903							199.2
	CREAMS	201903							
	CREAMS (TRADED)	201903							
	DIVIDEND	201903							2415
	INJECTIONS	201903							
	INJECTIONS/STERILE SOLUTIONS	201903							
	INTEREST	201903							596.3
	LIQUIDS	201903							
	LIQUIDS (TRADED)	201903							
	OTHERS	201903							
	OTHERS (TRADED)	201903							
	PROFIT ON SALE OF INVESTMENTS	201903							1074.1
	RENT	201903							53.5
	ROYALTY	201903							506.8
	SCRAP	201903							319
	SERVICES	201903							64.8
	TABLETS & CAPSULES	201903							119684.4
	TABLETS & CAPSULES (TRADED)	201903							
	TECHNOLOGY KNOW-HOW/FEES	201903							410.2
Dr. Reddy'S Laboratories Ltd.	BIOTECHNOLOGY (GRAMS)	201903							
	BULK DRUGS	201903							
	COSTOM PHARMACEUTICAL SERVICES(KILOGRA	201903							

	MS)								
	FORMULATIONS	201903							104667
	INTEREST	201903							812
	LICENSE FEES	201903							559
	PROFIT ON SALE OF MUTUAL FUNDS	201903							448
	SALE OF SPENT CHEMICALS	201903							356
	SCRAP	201903							161
	SERVICE INCOME	201903							503
Farmson Pharmaceutical Gujarat Pvt. Ltd.	DILUTE ACETIC ACID	201903				46304.9	Tonnes		289
	GLACIAL ACETIC ACID	201903				6443.09	Tonnes		39.5
	INTEREST	201903							15.4
	PARACETAMOL	201903				20246.52	Tonnes		6755.8
	RENT	201903							0.4
Glaxosmithkline Pharmaceuticals Ltd.	INTEREST	201903							764.4
	LIQUIDS: ORALS, TOPICALS, PARENTALS & MALT	201903							30894.8
	OTHER SERVICES	201903							
	OTHERS	201903							
	RENTAL INCOME	201903							4.8
	SERVICE INCOME	201903							256.2
	SOLIDS INCL. POWDERS & OINTMENTS	201903							
	TABLETS & CAPSULES	201903							
	VACCINES	201903							
Indoco Remedies Ltd.	ANALYTICAL & TESTING INCOME	201903							486.5
	BULK DRUGS	201903							
	CAPSULES	201903							
	INJECTIBLES & EYE PREPARATION	201903							
	INTEREST	201903							15.6
	LIQUID ORALS	201903							8927.2
	OINTMENTS	201903							

	&LOTIONS								
	OTHERS	201903							
	POWDERS	201903							
	SCRAP	201903							3.5
	TABLETS	201903							
	TOOTHPASTE & MOUTH GEL	201903							
Pan Drugs Ltd.	DICLOFANIC SODIUM	201303			1.5	Tonnes	1.43	Tonnes	0.7
	DILUTED ACETIC ACID	201303			460.94	Tonnes	460.94	Tonnes	0.1
	GUAIACOL	201303					0.6	Tonnes	0.2
	GUAIPHENESIN	201303			141.6	Tonnes	145.45	Tonnes	39.3
	GUAIPHENESIN DC 95	201303			66.05	Tonnes	66.05	Tonnes	37.3
	METHACARBAMOL	201303			0.28	Tonnes	0.28	Tonnes	0.2
	PAMABROM	201303			0.62	Tonnes	0.62	Tonnes	1.5
	PARA AMINO PHENOL	201303					0.54	Tonnes	0.1
	PARACETAMOL	201303					10	Tonnes	2
	PARACETAMOL POWDER	201303			491.26	Tonnes	494.71	Tonnes	112
	PNPNA	201303					3.68	Tonnes	0.3
Piramal Enterprises Ltd.	BULK DRUGS INTERMEDIATES	201903							18182.4
	DIVIDEND	201903							1298
	FACILITY FEES	201903							189.2
	INCOME ON INSTRUMENTS MANDATORILY MEASURED	201903							940.7
	INTEREST	201903							15724.1
	LIQUIDS	201903							
	LIQUIDS, DROPS & SOLUTIONS	201903							
	OTHER FINANCING ACTIVITIES	201903							9
	OTHERS	201903							
	PERSONAL CARE PRODUCTS - TRADED	201903							
	PROCESSING CHARGES	201903							2.1
	PROFIT ON SALE OF INVESTMENTS	201903							1.3

	SERVICES	201903							2921.5
	TABLETS	201903							
	TRADE IN TABLETS & CAPSULES	201903							
	VITAMIN A IN VARIOUS FORM	201903							
Sanofi India Ltd.	BULK DRUGS	201912							
	FORMULATIONS	201912							28427
	INCOME FROM SERVICES	201912							1676
	INTEREST	201912							910
	RENT	201912							3
	SCRAP	201912							15
Sri Krishna Pharmaceuticals Ltd.									
	D C GRANULES	201903							
	DOMPERIDONE	201903							
	FOLIC ACID	201903							
	FRUSEMIDE	201903							
	GLIBENCLAMIDE	201903							
	INTEREST	201903							6.2
	OTHERS	201903							
	PARACETAMOL IP	201903							5288.6
	TIE MONIUM SULPHATE	201903							
	TRADED GOODS	201903							
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.									
	DRUGS								
	INTERMEDIATES	201903							1990
	INTEREST	201903							33.7
	MARKETING SERVICES	201903							37.3
Triton Laboratories Ltd.									
	ACTIVATED CARBON	200003					0.51	Tonnes	
	PARACETAMOL	200003	2500	Tonnes	1892.12	Tonnes	1860.63	Tonnes	282.6
	SODIUM BI SULPHATE	200003					0.69	Tonnes	
	SPENT ACID	200003		Tonnes	34.5	Tonnes	34.5	Tonnes	
	SULPHURIC ACID	200003					0.45	Tonnes	

Location of Plant

Company Name	State	District	Location	Product
Ankur Drugs & Pharma Ltd.	Daman & Diu	Daman	Daman	Capsules Formulation
				Dry Powder Injectable
				Dry Syrups Formulation
				Effervescent Tablets
				Form Fill & Seal
				Liquid Formulation
				Liquid Injectable
				Ointments
				Oral Powder
				Oral Strip/Patches
				Tablets Formulation
	Himachal Pradesh	Solan	Solan	Capsules Formulation
				Dry Powder Injectable
				Dry Syrups Formulation
				Effervescent Tablets
				Form Fill & Seal
				Liquid Formulation
				Liquid Injectable
				Ointments
				Oral Powder
				Oral Strip/Patches
				Tablets Formulation
Aurobindo Pharma Ltd.	Andhra Pradesh	Srikakulam	Pydibheemavar am	Capsules & Tablets
	Andhra Pradesh	Visakhapatnam	Parwada	Capsules & Tablets
	Rajasthan	Alwar	Bhiwadi	Capsules & Tablets
	Telangana	Medak	Bollaram	Capsules & Tablets
	Telangana	Medak	Borapatla	Capsules & Tablets
	Telangana	Medak	Chitkul	Capsules & Tablets
	Telangana	Medak	Goddapothara m Village	Capsules & Tablets
	Telangana	Medak	Medak	Capsules & Tablets
	Telangana	Medak	Pashamylaraam	Capsules & Tablets
	Telangana	Rangareddi	Bachupalli	Capsules & Tablets
	Uttarakhand	Hardwar	Bhagwanpur	Pharmaceuticals Medicinal

				Chem & Botanical Prod
Cipla Ltd.	Goa	South Goa	Verna	Tablets & Capsules
	Himachal Pradesh	Solan	Baddi	Tablets & Capsules
	Madhya Pradesh	Dhar	Pithampur	Tablets & Capsules
	Sikkim	East Sikkim	Rangpoo	Tablets & Capsules
	Sikkim	East Sikkim	Rorathang	Tablets & Capsules
Dr. Reddy'S Laboratories Ltd.	Andhra Pradesh	Srikakulam	Srikakulam	Formulations
	Andhra Pradesh	Visakhapatnam	Visakhapatnam	Formulations
	Himachal Pradesh	Solan	Baddi	Formulations
	Puducherry	Yanam	Yanam	Formulations
	Telangana	Medak	Bollaram	Formulations
	Telangana	Rangareddi	Bachupally	Formulations
Farmson Pharmaceutical Gujarat Pvt. Ltd.	Gujarat	Vadodara	Vadodara	Dilute Acetic Acid
				Paracetamol
Glaxosmithkline Pharmaceuticals Ltd.	Maharashtra	Nashik	Nashik	Liquids: Orals, Topicals, Parentals & Malt
Indoco Remedies Ltd.	Goa	South Goa	Verna	Liquid Orals
	Himachal Pradesh	Solan	Baddi	Liquid Orals
	Maharashtra	Aurangabad (MAH)	Aurangabad	Liquid Orals
	Maharashtra	Mumbai	Mumbai	Liquid Orals
	Maharashtra	Raigarh (MAH)	Raigarh	Liquid Orals
Pan Drugs Ltd.	Gujarat	Vadodara	GIDC Area	Diluted Acetic Acid
				Guaiphenesin
				Paracetamol Powder
Piramal Enterprises Ltd.	Gujarat	Ahmadabad	Ahmedabad	Bulk Drugs Intermediates
	Madhya Pradesh	Dhar	Pithampur	Bulk Drugs Intermediates
	Maharashtra	Mumbai	Mumbai	Bulk Drugs Intermediates
	Maharashtra	Raigarh (MAH)	Mahad	Bulk Drugs Intermediates
	Tamil Nadu	Chennai	Ennore express highway	Bulk Drugs Intermediates
	Telangana	Sangareddy	Digwal village	Bulk Drugs Intermediates
Sanofi India Ltd.	Goa	Goa	Goa	Formulations
	Gujarat	Bharuch	Ankleshwar	Formulations
Sri Krishna Pharmaceuticals Ltd.	Telangana	Rangareddi	Nacharam	D C Granules
	Telangana	Rangareddi	Uppal	D C Granules
Triton Laboratories Ltd.	Telangana	Medak	Bonthapally	Paracetamol
				Spent Acid

Credit Ratings

Company Name	Date	Agency	Instrument	Grade	Rating	Status	Amount (Rs. Million)	Company/Issuer not co-operating
Aurobindo Pharma Ltd.	10/23/2019	IND-RA	Working capital loan	High Safety	AA+(ind)	Rating Watch	50000	N
		IND-RA	Non-fund based working capital limit	Highest Safety	A1+(ind)	Rating Watch	14940	N
Cipla Ltd.	1/7/2020	CARE	Bank Guarantee	Highest Safety	A 1+	Reaffirmed	900	N
		CARE	Packing Credit	Highest Safety	A 1+	Reaffirmed	30020	N
	1/21/2020	IND-RA	Commercial paper	Highest Safety	A1+(ind)	Reaffirmed	10000	N
		IND-RA	Non-convertible unsecured debentures/bonds /notes/bills	Highest Safety	AAA(ind)	Reaffirmed	10000	N
Dr. Reddy'S Laboratories Ltd.	11/8/2019	ICRA	Non-government debt	High Safety	AA+	Reaffirmed	5000	N
		ICRA	Non-government debt	Highest Safety	A 1+	Withdrawn		N
	2/11/2020	IND-RA	Working capital loan	High Safety	AA+(ind)	Initial Rating	5000	N
		IND-RA	Working capital loan	High Safety	AA+(ind)	Reaffirmed	80	N
		IND-RA	Non-fund based working capital limit	Highest Safety	A1+(ind)	Reaffirmed	920	N
	4/30/2020	IND-RA	Working capital loan	High Safety	AA+(ind)	Reaffirmed	100	N
		IND-RA	Working capital loan	High Safety	AA+(ind)	Reaffirmed	4700	N
		IND-RA	Commercial paper	Highest Safety	A1+(ind)	Initial Rating	8000	N
		IND-RA	Non-fund based working capital limit	Highest Safety	A1+(ind)	Reaffirmed	1200	N
Farmson Pharmaceutical Gujarat Pvt. Ltd.	7/17/2019	ICRA	Cash Credit	Adequate Safety	A-	Withdrawn	100	N
		ICRA	Bank Guarantee	High Safety	A 2+	Withdrawn	150	N
Indoco	8/30/2019	ICRA	Cash Credit	Adequate	A	Downgraded	84	N

Remedies Ltd.				Safety				
		ICRA	Cash Credit	Adequate Safety	A	Downgraded	120	N
		ICRA	Cash Credit	Adequate Safety	A	Downgraded	90	N
		ICRA	Fund based financial facility/instrument	Adequate Safety	A/A2+	Downgraded	100	N
		ICRA	Fund based financial facility/instrument	Adequate Safety	A/A2+	Downgraded	150	N
		ICRA	Non-fund-based financial facility/instrument	Adequate Safety	A	Downgraded	126.6	N
		ICRA	Non-fund-based financial facility/instrument	Adequate Safety	A	Downgraded	117.1	N
		ICRA	Non-government debt	Adequate Safety	A/A2+	Downgraded	600	N
		ICRA	Term loans	Adequate Safety	A	Downgraded	550	N
		ICRA	Term loans	Adequate Safety	A	Downgraded	550	N
		ICRA	Term loans	Adequate Safety	A	Downgraded	550	N
		ICRA	Term loans	Adequate Safety	A	Downgraded	350	N
		ICRA	Term loans	Adequate Safety	A	Downgraded	500	N
		ICRA	Commercial paper	High Safety	A 2+	Withdrawn		N
		ICRA	Fund based financial facility/instrument	High Safety	A 2+	Downgraded	100	N
		ICRA	Fund based financial facility/instrument	High Safety	A 2+	Downgraded	100	N
		ICRA	Non-fund-based financial facility/instrument	High Safety	A 2+	Downgraded	52.5	N
		ICRA	Non-fund-based financial facility/instrument	High Safety	A 2+	Downgraded	30	N
		ICRA	Non-fund-based financial facility/instrument	High Safety	A 2+	Downgraded	50	N
		ICRA	Non-fund-based financial	High Safety	A 2+	Downgraded	70	N

			facility/instrument					
Piramal Enterprises Ltd.	7/9/2019	CRISIL	Commercial paper	Highest Safety	A 1+	Reaffirmed	120000	N
		CRISIL	Non-convertible unsecured debentures/bonds /notes/bills	Highest Safety	A 1+	Initial Rating	15000	N
	12/30/2019	CARE	Non-convertible unsecured debentures/bonds /notes/bills	High Safety	AA	Initial Rating	25000	N
		CARE	Non-convertible unsecured debentures/bonds /notes/bills	High Safety	AA	Reaffirmed	1000	N
		CARE	Term loans	High Safety	AA	Reaffirmed	32000	N
		CARE	Commercial paper	Highest Safety	A 1+	Reaffirmed	30000	N
		CARE	Commercial paper	Highest Safety	A 1+	Reaffirmed	90000	N
		CARE	Fixed deposits (including intercorporate deposits)	Highest Safety	A 1+	Reaffirmed	2500	N
		CARE	Fund based financial facility/instrument	Highest Safety	A 1+	Reaffirmed	26000	N
		CARE	Non-convertible unsecured debentures/bonds /notes/bills	Highest Safety	A 1+	Reaffirmed	5000	N
		CARE	Non-fund-based financial facility/instrument	Highest Safety	A 1+	Reaffirmed	2000	N
	3/30/2020	CARE	Non-convertible unsecured debentures/bonds /notes/bills	High Safety	AA	Initial Rating	10000	N
	4/24/2020	CARE	Non-convertible unsecured debentures/bonds /notes/bills	High Safety	AA	Initial Rating	30000	N
	4/28/2020	CARE	Commercial paper	Highest Safety	A 1+	Reaffirmed	60000	N
	4/29/2020	CRISIL	Commercial paper	Highest Safety	A 1+	Reaffirmed	60000	N
		CRISIL	Non-convertible unsecured debentures/bonds /notes/bills	Highest Safety	A 1+	Withdrawn	15000	N

	5/28/2020	ICRA	Debentures / Bonds / notes / bills	High Safety	AA	Reaffirmed	3300	Y
		ICRA	Debentures / Bonds / notes / bills	High Safety	AA	Reaffirmed	1700	Y
		ICRA	Non-convertible unsecured debentures/bonds /notes/bills	High Safety	AA	Reaffirmed	141000	Y
		ICRA	Non-government debt	High Safety	AA/A1+	Reaffirmed	3000	Y
		ICRA	Term loans	High Safety	AA	Reaffirmed	24950	Y
		ICRA	Commercial paper	Highest Safety	A 1+	Reaffirmed	90000	Y
		ICRA	Fund based financial facility/instrument	Highest Safety	A 1+	Reaffirmed	21200	Y
		ICRA	Non-fund-based financial facility/instrument	Highest Safety	A 1+	Reaffirmed	2000	Y
Sri Krishna Pharmaceuticals Ltd.	11/22/2019	ICRA	Term loans	Moderate Safety	BBB	Downgraded	213.3	N
		ICRA	Working capital loan	Moderate Safety	A 3+	Downgraded	710	N
		ICRA	Working capital loan	Moderate Safety	BBB	Downgraded	1280	N

Name of Raw Material(S) Consumed with Quantity & Cost

Company Name	Product/Raw Material name	Year Ended	Raw material quantity	Unit of raw material qty	Raw material value
		Date	Units		Rs. Million
Alpha Remedies Ltd.	RAW MATERIAL	200903			135.1
Ankur Drugs & Pharma Ltd.	RAW MATERIALS	201203			941.6
Aurobindo Pharma Ltd.	RAW MATERIALS	201903			57559.2
Cian Healthcare Ltd.	RAW MATERIALS	201903			405.4
Cipla Ltd.	RAW MATERIALS	201903			10237.8
Dr. Reddy'S Laboratories Ltd.	RAW MATERIALS	201903			21032
Farmson Pharmaceutical Gujarat Pvt. Ltd.	ACETIC ANHYDRIDE	201903			1329.6
	ACTIVATED CARBON	201903			89.9
	HYDRO SULPHITE OF SODA	201903			18.3
	OTHERS	201903			30.5
	PHENOL	201903			3606.4
Glaxosmithkline Pharmaceuticals Ltd.	RAW MATERIALS	201903			6820.7
Indoco Remedies Ltd.	RAW MATERIALS	201903			2400.9
Pan Drugs Ltd.	ACETIC ANHYDRIDE	201303	378060	Kgs	22.1
	ACTIVATED CARBON	201303	6170	Kgs	1
	EPICHLOROHYDRIN	201303	92475	Kgs	11.4
	GUAIACOL	201303	105900	Kgs	32.9
	OTHERS	201303			8.1
	PARA AMINO PHENOL	201303	406599	Kgs	74.1
Piramal Enterprises Ltd.	RAW MATERIALS	201903			7672.7
Sanofi India Ltd.	RAW MATERIALS	201912			8636
Sri Krishna Pharmaceuticals Ltd.	RAW MATERIALS	201903			3673.2
Triton Laboratories Ltd.	A.CARBON	200003	69133	Kgs	5.2
	ACETIC ANHYDRIDE	200003	1430044	Kgs	51.9
	C.S.FLAKES	200003	61537	Kgs	0.8
	C.S.L.Y.E.	200003	3619479	Kgs	20.9

	EDTA	200003	2334.5	Kgs	0.3
	HCL	200003	5515	Kgs	
	HYDROS	200003	49613	Kgs	3
	IRON POWDER	200003	2069311	Kgs	19
	LIQUID AMMONIA	200003			0.2
	P.N.C.B.	200003	2465641	Kgs	76.7
	SODA ASH	200003	1691	Kgs	
	SODIUM BIO SULPHATE	200003	695	Kgs	
	SULPHURIC ACID	200003	1141850	Kgs	3.3
	ZINC DUST	200003	173625	Kgs	0.1

Section-II

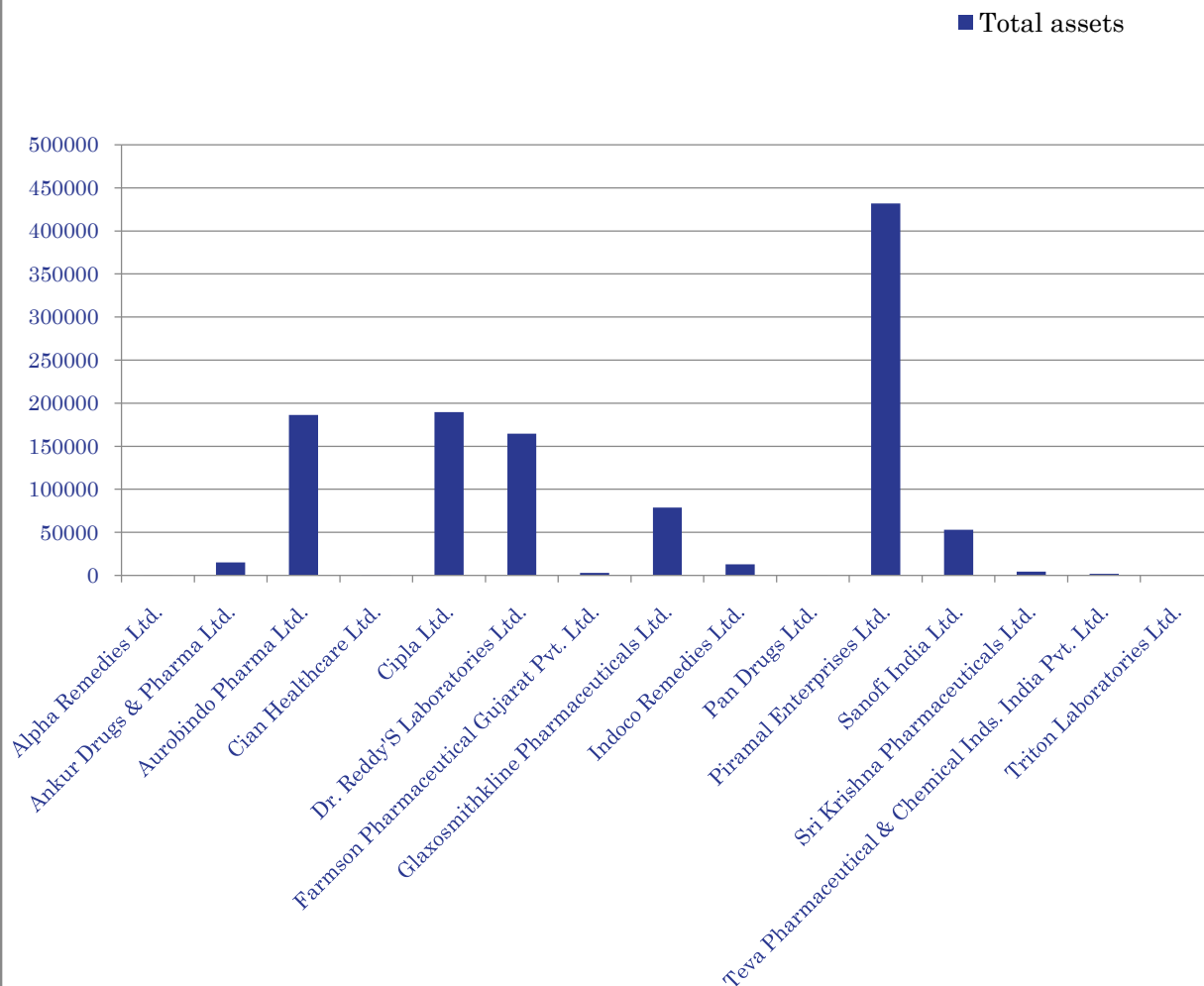
This section provides comparative financial performance of companies given in Section – I. This comparison will be helpful to analysis the companies on the basis of their financials viz... Assets, Cash Flow, Cost as % Ge of Sales, Forex Transaction, Growth in Assets & Liabilities, Growth in Income & Expenditure, Income & Expenditure, Liabilities, Liquidity Ratios, Profitability Ratio, Profits, Return Ratios, Structure of Assets & Liabilities (%), Working Capital & Turnover Ratios, etc.....

P.S: Blanks or 0 in the data in above tables is due to non-disclosure of the data by the company.

Assets

Company Name	Date	Rs. Million	Rs. Million				Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million
	Year	Gross fixed assets	Capital work-in-progress	(net_fix ed_asse ts)	((cash_ba nk_bal - prevy(cas h_bank_b nvento al)))	((inven tories- prevy(i nvento ries)))	Receivab les	Expense paid in advance	Loans & advances	Trade payables	Total assets
Alpha Remedies Ltd.	3/31/2018	164.2		114.4	0		13.3		7.8	11.6	135.7
Ankur Drugs & Pharma Ltd.	3/31/2012	13512.5	2664.8	11586.8	-8.4	-1476.7	317.6	1.6	76	1482.4	15383.7
Aurobindo Pharma Ltd.	3/31/2019	54461.5	7308.9	41497	-1701.3	5620.3	55252.2	5131.1	16930.7	19669.8	186518.2
Cian Healthcare Ltd.	3/31/2019	312.1	63.7	234.8	17.4	1.2	206.2	2	69.4	53.3	798.8
Cipla Ltd.	3/31/2019	60932.3	2973.3	41274.6	-563.4	-1695.7	33614.5	5924.6	20294.3	15286.1	189665
Dr. Reddy'S Laboratories Ltd.	3/31/2019	97741	4001	46827	438	1588	39592	5218	13102	11094	164710
Farmson Pharmaceutical Gujarat Pvt. Ltd.	3/31/2019	2330.5	16.3	1460.6	337.9	17.6	780	61.5	494	899.5	3250.7
Glaxosmithkline Pharmaceuticals Ltd.	3/31/2019	5590.8	10026.4	4300.1	-1206.4	-136.9	2332.6	42487.5	44511.4	4796.1	78808
Indoco Remedies Ltd.	3/31/2019	9344.9	1854.3	4675.1	130.5	-98.6	2141.2	674.8	1945.2	1707.1	13050.8
Pan Drugs Ltd.	3/31/2013	122.3	0	64.3	-0.3	-0.6	39.1		24.7	65.3	193.7
Piramal Enterprises Ltd.	3/31/2019	22330	979.5	18236.3	-4977.4	-159.1	9568.7	56780.5	166607.9	5633.6	431834.8
Sanofi India Ltd.	12/31/2019	8171	174	4987	2952	-197	2635	21390	27075	3856	52966
Sri Krishna Pharmaceuticals Ltd.	3/31/2019	2678.2	20.5	1469.4	-13.2	53.8	2039.4		96.5	749	4427.3
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.	3/31/2019	2.3		0.8	274.6	3.8	1136.7	28.4	66.6	143.7	1959.9
Triton Laboratories Ltd.	3/31/2000	101.7	0.1	60.2	1.2	10.3	61.6	0.4	22.5	63.3	173.6

Total assets

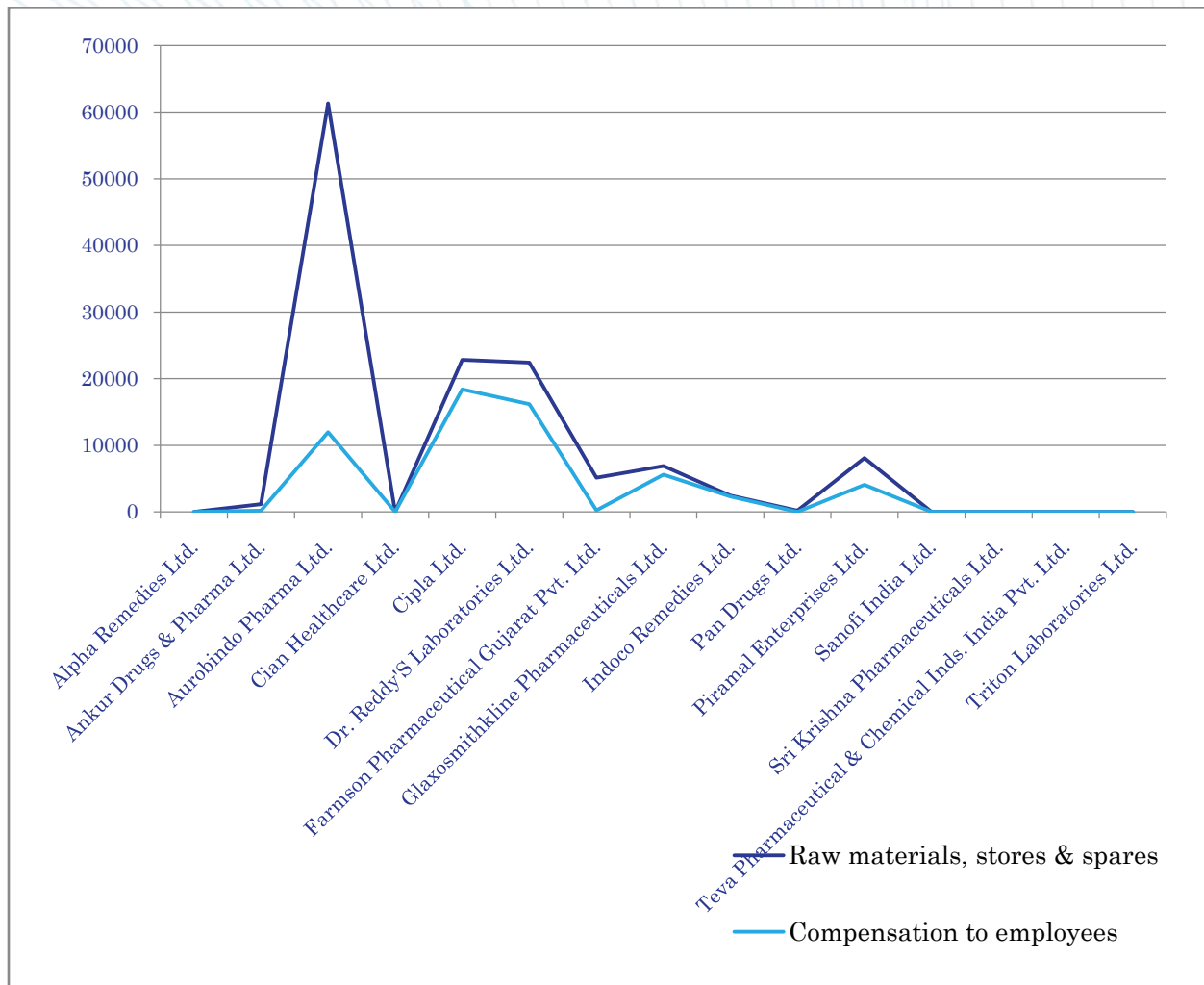


Cash Flow

	Date	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million
		Net cash flow from operating activities	Cash flow generat ed from operatio ns	Cash flow before extraordin ary items	Net cash inflow or (outflow) from investmen t activities	Net cash inflow or (outflow) due to net increase or (decrease) in cash and equivalents	Cash and cash equivalent s as at the beginning of the year	Cash and cash equivalent s as at the end of the year	Net cash inflow or (outflow) from financing activities
Company Name	Year								
Alpha Remedies Ltd.									
Ankur Drugs & Pharma Ltd.	3/31/2012	32	45	32	239.6	2.4	10.4	12.8	-269.2
Aurobindo Pharma Ltd.	3/31/2019	5267.1	10088.3	5267.1	-12973.6	-1712.5	2399.5	687	5994
Cian Healthcare Ltd.	3/31/2019	128	128	128	-83.2	17.4	5.9	23.3	-27.4
Cipla Ltd.	3/31/2019	14680.5	19194.3	14680.5	-11470.5	-1523.2	2174.5	644.7	-4733.2
Dr. Reddy'S Laboratories Ltd.	3/31/2019	27621	30009	27621	-5509	-119	1207	1132	-22231
Farmson Pharmaceutical Gujarat Pvt. Ltd.	3/31/2019	952.7	1006.8	952.7	-537.8	171.9	2.5	174.4	-243
Glaxosmithkline Pharmaceuticals Ltd.	3/31/2019	4010.7	6207.1	4164.5	-1443.3	-1016.2	1994	977.8	-3583.6
Indoco Remedies Ltd.	3/31/2019	1321.4	1357.6	1321.4	-1037.6	122.3	84.9	207.2	-161.5
Pan Drugs Ltd.									
Piramal Enterprises Ltd.	3/31/2019	67605.8	69393.1	67605.8	-93289.1	-4344.8	4578.7	233.9	21338.5
Sanofi India Ltd.	12/31/2019	4123	6406	4123	657	2948	8251	11199	-1832
Sri Krishna Pharmaceuticals Ltd.	3/31/2019	-101.2	-77.3	-101.2	-81.7	-11.8	23	11.2	171.1
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.	3/31/2019	242	545.6	242	33	274.5	475.1	749.6	-0.5
Triton Laboratories Ltd.									

Cost as % Ge of Sales

	Date	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million
Company Name	Year	Raw materials, stores & spares	Stores, spares, tools consumed	Raw material expenses	Power, fuel & water charges	Compensation to employees	Excise duty	Advertising expense	Marketing expense	Distribution expense
Alpha Remedies Ltd.										
Ankur Drugs & Pharma Ltd.	3/31/2012	1172.2	28.5	1143.7	152.3	188.1	8.8	1.1	26.1	2.2
Aurobindo Pharma Ltd.	3/31/2019	61327.8	4979.1	56348.7	5062.8	11981			652.6	2953.6
Cian Healthcare Ltd.										
Cipla Ltd.	3/31/2019	22819.4	1004.9	21814.5	2649.3	18400.9			6337.8	1706
Dr. Reddy'S Laboratories Ltd.	3/31/2019	22394	4242	18152	2786	16165		56	9022	2587
Farmson Pharmaceutical Gujarat Pvt. Ltd.	3/31/2019	5126.4	51.8	5074.6	282	208.7			33.1	6.9
Glaxosmithkline Pharmaceuticals Ltd.	3/31/2019	6903	82.3	6820.7	279.4	5591.3			1398.5	629.5
Indoco Remedies Ltd.	3/31/2019	2434.6	33.8	2400.8	284.9	2312.6		399.3	227.7	305.2
Pan Drugs Ltd.	3/31/2013	172.6		172.6	13.8	17.3	2.5		2.2	2.9
Piramal Enterprises Ltd.	3/31/2019	8097.5	424.8	7672.7	676.9	4054.5		698	309.2	388.5
Sanofi India Ltd.										
Sri Krishna Pharmaceuticals Ltd.										
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.										
Triton Laboratories Ltd.										



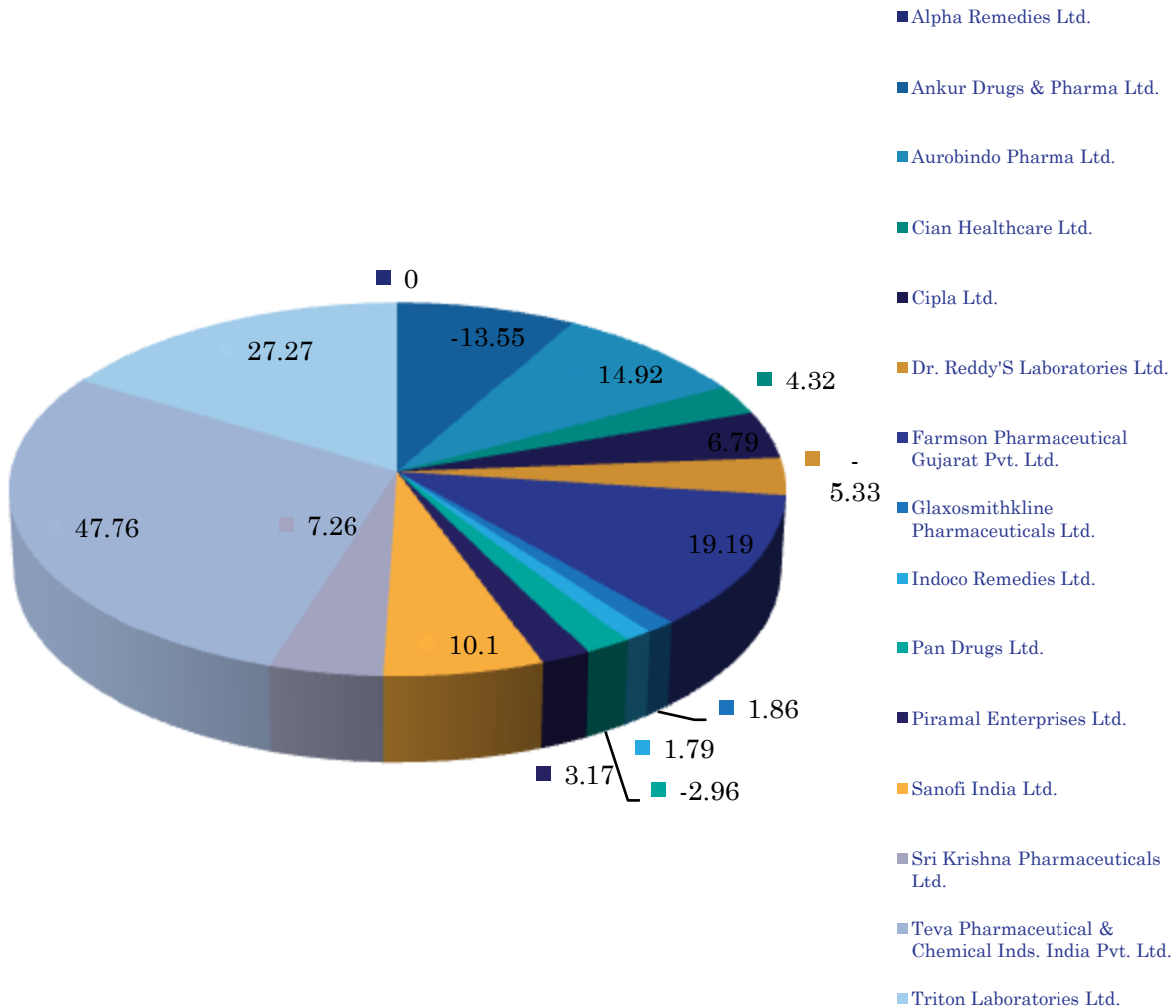
Forex Transaction

	Date	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million		
Company Name	Year	Total forex earnings	Export of goods (fob)	Export of services	Total forex spending	Import of raw material s (cif)	Import of finished goods (cif)	Import of capital goods (cif)	(100*(ex port_ear nings/ sales))	((imported _rawmat/ rawmat_p urchased) *100)
Alpha Remedies Ltd.										
Ankur Drugs & Pharma Ltd.	3/31/2012				8.9	7.5		0	0	18.94
Aurobindo Pharma Ltd.										
Cian Healthcare Ltd.										
Cipla Ltd.										
Dr. Reddy'S Laboratories Ltd.										
Farmson Pharmaceutical Gujarat Pvt. Ltd.	3/31/2019	1926.7	1926.7		364.7	355.8			26.83	7
Glaxosmithkline Pharmaceuticals Ltd.										
Indoco Remedies Ltd.										
Pan Drugs Ltd.	3/31/2013	72.7	72.7		5.8	5.8			33.3	3.69
Piramal Enterprises Ltd.										
Sanofi India Ltd.										
Sri Krishna Pharmaceuticals Ltd.	3/31/2019	2329.8	2329.8		2410.8	2349.2		1.6	42.81	63.87
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.										
Triton Laboratories Ltd.										

Growth in Assets & Liabilities

Company Name	Growth (gross_fixe d_assets,pr ev(gross_fix ed_assets))	Date Year	Growth (net_fixed _assets,pr ev(net_fix ed_assets))	Growth (current_a ssets,prev current_as sets))	Growth (total_ass ets,prev total_asse ts))	Growth (use_borro wings,prev use_borro wings))	Growth (total_lia bilities,pr ev(total_l iabilities))	Growth (net_wor th,prev net_wor th))	Total assets
Alpha Remedies Ltd.		03/31/2018	0	0	0	0	0		135.7
Ankur Drugs & Pharma Ltd.	-0.01	3/31/2012	-5.02	-73.07	-13.55	-13.55	-65.96		15383.7
Aurobindo Pharma Ltd.	26.89	3/31/2019	22.3	14.5	14.92	14.92	13.7		186518.2
Cian Healthcare Ltd.	22.92	3/31/2019	17.4	-7.36	4.32	4.32	27.7		798.8
Cipla Ltd.	5.88	3/31/2019	-4.46	9.68	6.79	16.41	6.79	11.82	189665
Dr. Reddy'S Laboratories Ltd.	5.97	3/31/2019	-0.73	-2.72	-5.33	-5.33	7.42		164710
Farmson Pharmaceutical Gujarat Pvt. Ltd.	47.5	3/31/2019	69.27	19.66	19.19	19.19	49.38		3250.7
Glaxosmithkline Pharmaceuticals Ltd.	37.74	3/31/2019	33.21	-6.4	1.86	-34.43	1.86	3	78808
Indoco Remedies Ltd.	5.6	3/31/2019	-4.34	0.84	1.79	1.79	-2.14		13050.8
Pan Drugs Ltd.	17.82	3/31/2013	26.33	-8.51	-2.96	-2.96			193.7
Piramal Enterprises Ltd.	7.02	3/31/2019	0.91	-13	3.17	3.17	-1.93		431834.8
Sanofi India Ltd.	-22.42	12/31/2019	-31.95	33.62	10.1	10.1	10.05		52966
Sri Krishna Pharmaceuticals Ltd.	3.91	3/31/2019	-4.13	14.9	7.26	7.26	-2.72		4427.3
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.	15	3/31/2019	60	45.2	47.76	47.76	70.88		1959.9
Triton Laboratories Ltd.	4.52	3/31/2000	-0.99	53.07	27.27	27.27	95.08		173.6

growth(total_assets,prev(total_assets))



Growth in Income & Expenditure

Company Name	Date	Growth (sales, prev(sales))	Growth (rawmat_exp, prev(rawmat_exp))	Growth (stores_spares_consumed, prev(stores_spares_consumed))	Growth (compensation_to_employees, prev(compensation_to_employees))	Growth (selling_distribution_exp, prev(selling_distribution_exp))	Growth (pbdita, prev(pbdita))	Growth (pat, prev(pat))	Total assets
Alpha Remedies Ltd.	3/31/2018								135.7
Ankur Drugs & Pharma Ltd.	3/31/2012	-81.61	-76.88	-27.11	-8.02	-22.83			15383.7
Aurobindo Pharma Ltd.	3/31/2019	18.97	31.95	34.26	21.37	6.86	-4.85	-15.61	186518.2
Cian Healthcare Ltd.	3/31/2019	2.63	5.12		29.95	33.33	-25.48	-83.5	798.8
Cipla Ltd.	3/31/2019	8.57	-9.88	-16	3.03	18.62	26.27	28.59	189665
Dr. Reddy'S Laboratories Ltd.	3/31/2019	13.53	10.89	-16.5	5.56	6.68	68.97	125.31	164710
Farmson Pharmaceutical Gujarat Pvt. Ltd.	3/31/2019	46.06	44.91	30.48	34.21	-69.95	104.72	123.51	3250.7
Glaxosmithkline Pharmaceuticals Ltd.	3/31/2019	8.09	33.67	34.48	3.46	31.37	22.54	20.84	78808
Indoco Remedies Ltd.	3/31/2019	-7.71	-13.68	5.96	4.96	-7.42	-39.09		13050.8
Pan Drugs Ltd.	3/31/2013	-2.89	10.01		-2.81	183.33			193.7
Piramal Enterprises Ltd.	3/31/2019	7.05	-5.24	-3.76	-8.42	8.68	-55		431834.8
Sanofi India Ltd.	12/31/2019	10.83	7.82	19.15	9.58	2.24	-3.3	8.83	52966
Sri Krishna Pharmaceuticals Ltd.	3/31/2019	43.15	73.13	54.81	14.81	-5.76	-32.6		4427.3
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.	3/31/2019	36.95			35.66	11.11	61.98	61.16	1959.9
Triton Laboratories Ltd.	3/31/2000	16.37	18.81	10	6.67	62.16	48.25	336.36	173.6

Income & Expenditure

	Date	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million
Company Name	Year	Sales	Other income	Changes in stock	Raw material & spares	Prior period and extra- ordinary income	Power, fuel & water charges	Salaries, wages, bonus, ex gratia pf & gratuitie expenses paid	Selling & distribu- tion expenses	Interest expense	Depreci- ation (net of transfer from revaluati- on reserves)
Alpha Remedies Ltd.											
Ankur Drugs & Pharma Ltd.	3/31/2012	1523.7	0.3	-204.9	1172.2	407.3	152.3	182.4	29.4	468.3	611.9
Aurobindo Pharma Ltd.	3/31/2019	122578.9	90.9	2898	61327.8	99.9	5062.8	11732.8	3606.2	1266.5	3789
Cian Healthcare Ltd.	3/31/2019	676.3	9.5	2.4	416.2		1.5	54.7	3.2	53.8	29.2
Cipla Ltd.	3/31/2019	124472.4	253.3	-1367	22819.4	648	2649.3	17076.6	8043.8	169.7	5620.4
Dr. Reddy'S Laboratories Ltd.	3/31/2019	106255	215	-660	22394	751	2786	13536	11665	568	7128
Farmson Pharmaceutical Gujarat Pvt. Ltd.	3/31/2019	7182.1	7	9.9	5126.4	2.9	282	202	40	42.4	161.4
Glaxosmithkline Pharmaceuticals Ltd.	3/31/2019	31197.9	92.2	-255.6	6903	825.5	279.4	5055.2	2028	5.5	485.9
Indoco Remedies Ltd.	3/31/2019	9512.7	34.9	-133.3	2434.6	11	284.9	2131.6	932.2	199.6	715.7
Pan Drugs Ltd.	3/31/2013	218.3		1.4	172.6	15.6	13.8	17.2	5.1	0.4	5.2
Piramal Enterprises Ltd.	3/31/2019	21816.5	498.9	-97.4	8097.5	152.6	676.9	3634.2	1395.7		1311.8
Sanofi India Ltd.	12/31/2019	30709	11	-23	8692		423	4220	2004	3	999
Sri Krishna Pharmaceuticals Ltd.	3/31/2019	5442.4		41.5	3792.4	2	281.8	623.2	57.3	64.2	166.6
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.	3/31/2019	2027.3				5.1	0.2	31.9	3	1.8	0.2
Triton Laboratories Ltd.	3/31/2000	287.9		5.7	183	0.1	19.9	9.4	6	5.9	4.9

Liabilities

	Date	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million	Rs. Million
Company Name	Year	Net worth	Reserves and fundings	Borrowings	Secured bank borrowings	Unsecured Bank borrowings	Current liabilities & provision	Total liabilities	Trade payables
Alpha Remedies Ltd.	3/31/2018	-75.2	-96.9	163.6	163.6		47.3	135.7	11.6
Ankur Drugs & Pharma Ltd.	3/31/2012	817.3	-383.6	8892.6	6483.7		6189.4	15383.7	1482.4
Aurobindo Pharma Ltd.	3/31/2019	113506.2	112920.3	45198	1797		67812.3	186518.2	19669.8
Cian Healthcare Ltd.	3/31/2019	175.2	45.7	487	321.8	20.6	334.5	798.8	53.3
Cipla Ltd.	3/31/2019	157819.1	156207.7				24629.9	189665	15286.1
Dr. Reddy'S Laboratories Ltd.	3/31/2019	126835	126011	10646			30887	164710	11094
Farmson Pharmaceutical Gujarat Pvt. Ltd.	3/31/2019	1743	1714.1	460.9	381.9		1140	3250.7	899.5
Glaxosmithkline Pharmaceuticals Ltd.	3/31/2019	21424.2	19730.1	5.9			28159	78808	4796.1
Indoco Remedies Ltd.	3/31/2019	6610.8	6426.5	2958.7	1350.2	470	4548	13050.8	1707.1
Pan Drugs Ltd.	3/31/2013	-84.5	-115.9	196.6	188.4		264.7	193.7	65.3
Piramal Enterprises Ltd.	3/31/2019	144439.3	161244.6	208338	20630.8	17389.5	138059.6	431834.8	5633.6
Sanofi India Ltd.	12/31/2019	24423	24193				16786	52966	3856
Sri Krishna Pharmaceuticals Ltd.	3/31/2019	2065.9	1946.7	1374.2	993.8		1864.9	4427.3	749
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.	3/31/2019	1750.7	1750.6				202.9	1959.9	143.7
Triton Laboratories Ltd.	3/31/2000	35.7	30.2	48.2	40.3		70.2	173.6	63.3

Liquidity Ratios

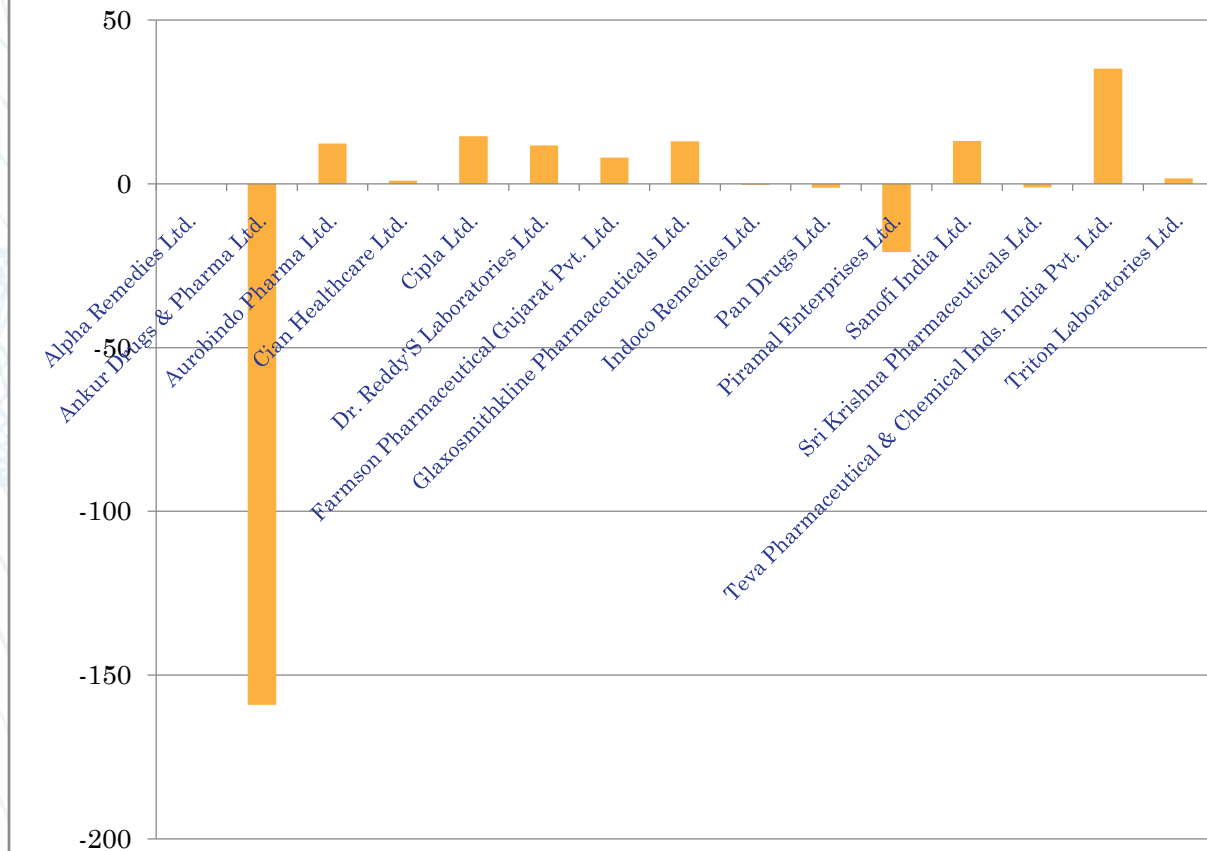
Company Name	Cash to current liabilities (times)	Quick ratio (times)	Current ratio (times)	Debt to equity ratio (times)	Interest cover (times)	Interest incidence (%)	Rs. Million Total assets
Alpha Remedies Ltd.	0	0.28	0.28			0	135.7
Ankur Drugs & Pharma Ltd.	0	0.05	0.09	12.26		6.08	15383.7
Aurobindo Pharma Ltd.	0.01	0.83	1.44	0.4	16.52	3.07	186518.2
Cian Healthcare Ltd.	0.07	0.69	1.17	2.78	1.22	10.86	798.8
Cipla Ltd.	0.95	2.42	3.73	0	146.03	19.45	189665
Dr. Reddy'S Laboratories Ltd.	0.73	2.03	2.72	0.08	26.32	3.51	164710
Farmson Pharmaceutical Gujarat Pvt. Ltd.	0.15	0.89	1.02	0.26	20.36	7.71	3250.7
Glaxosmithkline Pharmaceuticals Ltd.	0.41	0.98	1.16	0	1136.2	69.62	78808
Indoco Remedies Ltd.	0.05	0.53	0.96	0.45	0.56	8.06	13050.8
Pan Drugs Ltd.	0.07	0.22	0.31			0.2	193.7
Piramal Enterprises Ltd.	0.08	0.15	0.19	1.44	15.06	0	431834.8
Sanofi India Ltd.	0.67	1.41	1.79	0	2204.67		52966
Sri Krishna Pharmaceuticals Ltd.	0.02	1.11	1.55	0.67		5.18	4427.3
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.	3.72	9.49	9.62	0	567.83		1959.9
Triton Laboratories Ltd.	0.04	0.78	1.08	1.35	2.02	16.3	173.6

Profitability Ratio

	Date	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Company Name	Year	PBDITA as % of total income	PBT as % of total income	PAT as % of total income	PBDITA net of P&E as % of total income net of P&E	PBPT net of P&E&OI as % of total income net of P&E	Net profit margin	Operating profit margin of non-financial companies
Alpha Remedies Ltd.								
Ankur Drugs & Pharma Ltd.	3/31/2012	-6.9	-150.7	-159.08	-26.59	-119.32	-219.28	-26.63
Aurobindo Pharma Ltd.	3/31/2019	20.8	15.77	12.28	19.3	15.86	12.29	19.6
Cian Healthcare Ltd.	3/31/2019	14.28	1.54	0.96	13.06	0.38	1.17	13.25
Cipla Ltd.	3/31/2019	24.18	19.39	14.55	20.3	19.24	14.21	21.06
Dr. Reddy'S Laboratories Ltd.	3/31/2019	23.19	15.6	11.72	20.82	15.05	11.11	21.21
Farmson Pharmaceutical Gujarat Pvt. Ltd.	3/31/2019	15.81	12.91	7.95	14.95	12.8	7.92	15.07
Glaxosmithkline Pharmaceuticals Ltd.	3/31/2019	21.88	20.25	12.98	18.84	19.31	12.08	19.3
Indoco Remedies Ltd.	3/31/2019	9.21	-0.95	-0.29	6.86	-0.75	-0.38	7.02
Pan Drugs Ltd.	3/31/2013	1.28	-1.15	-1.15	-6.12	-8.35	-8.35	-6.14
Piramal Enterprises Ltd.	3/31/2019	20.44	-19.11	-20.81	4.21	10.59	9.96	7.96
Sanofi India Ltd.	12/31/2019	21.85	18.64	13.09	21.14	20.91	15.34	21.78
Sri Krishna Pharmaceuticals Ltd.	3/31/2019	3.36	-1.56	-1.06	3.22	-1.59	-1.09	3.22
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.	3/31/2019	49.95	49.63	35.15	48.19	49.52	34.99	48.99
Triton Laboratories Ltd.	3/31/2000	5.85	1.87	1.66	5.78	2.08	1.87	5.8

PAT as % of total income

■ PAT as % of total income



Profits

Company Name	Date	Rs. Million	Rs. Million	Rs. Million	Times	Rs. Million
	Year	PBDITA	PBT	Operating profit of non-financial companies	PAT net of P&E / total income net of P&E (times)	Change in PBT net of P&E&OI because of change in financial service income
Alpha Remedies Ltd.						
Ankur Drugs & Pharma Ltd.	3/31/2012	-133.3	-2912.9	-405.7	-2.19	376.8
Aurobindo Pharma Ltd.	3/31/2019	25908.1	19646.2	24022.1	0.12	40648.61
Cian Healthcare Ltd.	3/31/2019	98	10.6	89.6	0.01	
Cipla Ltd.	3/31/2019	31373.2	25154.3	26207.9	0.14	12758.53
Dr. Reddy'S Laboratories Ltd.	3/31/2019	25274	17007	22539	0.11	-1635.46
Farmson Pharmaceutical Gujarat Pvt. Ltd.	3/31/2019	1145.6	935.3	1082.5	0.08	745.26
Glaxosmithkline Pharmaceuticals Ltd.	3/31/2019	7172.2	6637.1	6021.1	0.12	1493.84
Indoco Remedies Ltd.	3/31/2019	897.2	-92.4	667.6	0	226.22
Pan Drugs Ltd.	3/31/2013	3	-2.7	-13.4	-0.08	5.44
Piramal Enterprises Ltd.	3/31/2019	8466.9	-7915.8	1735.8	0.1	180.74
Sanofi India Ltd.	12/31/2019	6914	5898	6689	0.15	437.01
Sri Krishna Pharmaceuticals Ltd.	3/31/2019	183.4	-84.8	175.5	-0.01	-52.68
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.	3/31/2019	1032	1025.4	993.2	0.35	567.22
Triton Laboratories Ltd.	3/31/2000	16.9	5.4	16.7	0.02	1.3

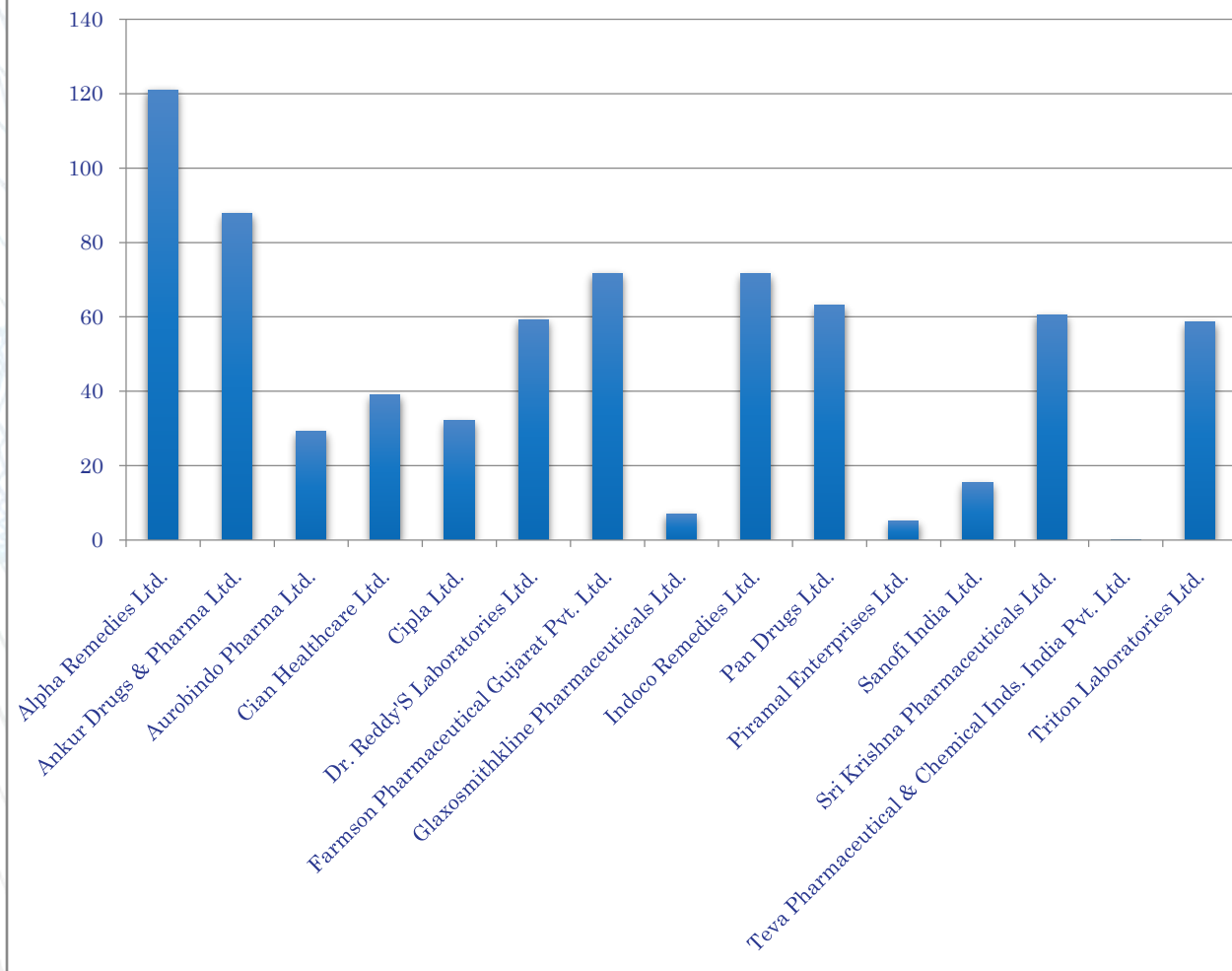
Return Ratios

	Date	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Company Name	Year	Return on net worth	PAT as % of net worth	Return on capital employed	PAT as % of capital employed	Return on total assets	PAT as % of GFA excl reval	PAT as % of total assets excl reval	PAT net of P&E as % of GFA excl reval
Alpha Remedies Ltd.									
Ankur Drugs & Pharma Ltd.	3/31/2012	-207.89	-191.08	-26.75	-24.59	-20.74	-22.75	-19.06	-24.76
Aurobindo Pharma Ltd.	3/31/2019	14.35	14.34	10.35	10.35	8.77	31.42	8.77	31.43
Cian Healthcare Ltd.	3/31/2019	5.12	4.23	1.23	1.01	1.08	2.33	0.89	2.83
Cipla Ltd.	3/31/2019	12.27	12.63	12.2	12.56	9.99	31.88	10.28	30.96
Dr. Reddy'S Laboratories Ltd.	3/31/2019	9.82	10.43	8.54	9.08	7.1	13.45	7.54	12.66
Farmson Pharmaceutical Gujarat Pvt. Ltd.	3/31/2019	39.45	39.6	28.63	28.74	19.2	29.47	19.28	29.35
Glaxosmithkline Pharmaceuticals Ltd.	3/31/2019	18.28	20.15	18.28	20.14	4.94	88.16	5.45	80
Indoco Remedies Ltd.	3/31/2019	-0.56	-0.42	-0.39	-0.3	-0.29	-0.31	-0.22	-0.41
Pan Drugs Ltd.	3/31/2013			-16.3	-2.41	-9.31	-2.39	-1.37	-16.19
Piramal Enterprises Ltd.	3/31/2019	2.82	-5.91	1.19	-2.5	1.01	-39.91	-2.13	19.03
Sanofi India Ltd.	12/31/2019	20.83	17.77	20.83	17.77	9.61	44.29	8.2	51.91
Sri Krishna Pharmaceuticals Ltd.	3/31/2019	-2.84	-2.76	-1.79	-1.73	-1.39	-2.2	-1.35	-2.26
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.	3/31/2019	51.97	52.33	51.97	52.33	43.89	33776.74	44.2	33539.53
Triton Laboratories Ltd.	3/31/2000	20	17.78	8.54	7.59	3.99	6	3.54	6.75

Structure of Assets & Liabilities(%)

Company Name	Date Year	gross_fixed_a ssets/ total_assets* 100	Growth (net_fixed_a ssets,prev(n et_fixed_ass ets))	Growth (current_ass ets,prev(curr ent_assets))	Growth (net_worth,p rev(net_wor th))	Growth (resv,prev(r esv))	Growth (mp_borro wings_total ,prev(mp_b orrowings_t otal))
Alpha Remedies Ltd.	3/31/2018	121	0	0			
Ankur Drugs & Pharma Ltd.	3/31/2012	87.84	-5.02	-73.07	-65.96		
Aurobindo Pharma Ltd.	3/31/2019	29.2	22.3	14.5	13.7	13.79	
Cian Healthcare Ltd.	3/31/2019	39.07	17.4	-7.36	27.7	-72.01	
Cipla Ltd.	3/31/2019	32.13	-4.46	9.68	11.82	11.96	
Dr. Reddy'S Laboratories Ltd.	3/31/2019	59.34	-0.73	-2.72	7.42	7.47	
Farmson Pharmaceutical Gujarat Pvt. Ltd.	3/31/2019	71.69	69.27	19.66	49.38	50.64	
Glaxosmithkline Pharmaceuticals Ltd.	3/31/2019	7.09	33.21	-6.4	3	-1.11	
Indoco Remedies Ltd.	3/31/2019	71.6	-4.34	0.84	-2.14	-2.2	
Pan Drugs Ltd.	3/31/2013	63.14	26.33	-8.51			
Piramal Enterprises Ltd.	3/31/2019	5.17	0.91	-13	-1.93	-4.83	
Sanofi India Ltd.	12/31/2019	15.43	-31.95	33.62	10.05	10.16	
Sri Krishna Pharmaceuticals Ltd.	3/31/2019	60.49	-4.13	14.9	-2.72	-2.88	
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.	3/31/2019	0.12	60	45.2	70.88	70.89	
Triton Laboratories Ltd.	3/31/2000	58.58	-0.99	53.07	95.08	18.9	

gross_fixed_assets/ total_assets*100



Working Capital & Turnover Ratios

	Date	Days	Days	Days	Days	Days	Days	Times	Times	Times	Times
Company Name	Year	Raw material cycle (days)	WIP cycle (days)	Finished goods cycle (days)	Debtor days (days)	Gross working capital cycle (days)	Creditor days (days)	Cash to current liabilities (times)	Raw material turnover (times)	Debtors turnover (times)	Creditor turnover (times)
Alpha Remedies Ltd.											
Ankur Drugs & Pharma Ltd.	3/31/2012	204.79	17.44	2.54	83.75	308.52	1693.87	0	1.78	4.36	0.22
Aurobindo Pharma Ltd.	3/31/2019	121.07	41.52	15.66	146.04	324.29	83.43	0.01	3.01	2.5	4.37
Cian Healthcare Ltd.	3/31/2019	54.9	30.69	37.66	124.64	247.88	43.22	0.07	6.65	2.93	8.45
Cipla Ltd.	3/31/2019	208.32	38.88	39.72	84.17	371.08	104.43	0.95	1.75	4.34	3.5
Dr. Reddy'S Laboratories Ltd.	3/31/2019	110.19	39.24	25.25	136.54	311.22	106.07	0.73	3.31	2.67	3.44
Farmson Pharmaceutical Gujarat Pvt. Ltd.	3/31/2019	3.98	1.51	3.41	43	51.9	58.58	0.15	91.62	8.49	6.23
Glaxosmithkline Pharmaceuticals Ltd.	3/31/2019	59.67	6.44	67.32	17.46	150.9	112.95	0.41	6.12	20.91	3.23
Indoco Remedies Ltd.	3/31/2019	162.34	16.95	30.38	79.76	289.43	166.44	0.05	2.25	4.58	2.19
Pan Drugs Ltd.	3/31/2013	24	9.61	8.6	72.73	114.94	102.15	0.07	15.21	5.02	3.57
Piramal Enterprises Ltd.	3/31/2019	73.76	34.07	17.57	97.59	222.99	200.63	0.08	4.95	3.74	1.82
Sanofi India Ltd.	12/31/2019	80.96	24.32	38.48	23.2	166.96	90.04	0.67	4.51	15.74	4.05
Sri Krishna Pharmaceuticals Ltd.	3/31/2019	18.7	8.91	32.24	91.6	151.45	59.67	0.02	19.52	3.98	6.12
Teva Pharmaceutical & Chemical Inds. India Pvt. Ltd.	3/31/2019			0.69	175.36	176.06	83.52	3.72		2.08	4.37
Triton Laboratories Ltd.	3/31/2000	11.67	7.24	15.71	63.52	98.14	110.44	0.04	31.28	5.75	3.3

$$f^{5/2/3} L^E \in N^{5/8/3/4} \oplus N^N H_L F^{3/4} f f W W P_{2/3} \in H_T \in -H_T \oplus^{1/3} C B N^{01/3/5/8} F^V E^H T N^{05/8-N} P_{1/8} N^0$$

$$\text{fi}^{5/8 2/3} \text{L}_F \in \text{N}_{\text{L}}^{5/8 3/4} \quad \text{www} \text{P}_t \text{H}_T \text{C}_R \in \text{L}_F \text{N}^{\text{OH}} \text{T}^{\text{O}1/3} \text{C}_R \text{N}^{\text{O}1/3} \text{N}^{\text{O}1/3 1/8} \text{O} \in -^{5/8} \text{C}_R \text{Rs} \text{P}_t 1/8 1 \text{N}^{\text{O}}$$
$$f^{5/8}_{2/3} L_F \in N_{L^{5/8}_{3/4}} \otimes^N_{L_{T^{3/4}}} f f W P_t C_R \in {}^3_{8/8} P \in H_T \otimes^1_{1/3} C_R N^{01}_{1/3} P_{t1/8} N^0$$
$$f^{5/8/3} \text{L} \text{F} \in \text{N}^{5/8/4} \text{P}^{\text{N}} \text{N}^{\text{L}} \text{H}^{\text{L}} \text{T}^{\text{L}} \text{3/4} f f \text{WWW} \text{P}^{\text{L}} \text{2/3} \text{P} \in \text{0}^{\text{0}} \text{0}^{\text{0}} \text{0}^{\text{0}} \in \text{1/3} - \text{N}^{\text{L}} \text{Y}^{\text{H}} \text{L} \text{B}^{\text{L}} \text{11/8} \text{5/8} \text{L} \text{F} \text{P}^{\text{L}} \text{t}^{\text{L}} \text{1/8} \text{1}^{\text{N}} \text{0}$$

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$\bullet \ulcorner \text{R} \text{P} \text{t} \vdash \neg \ulcorner \text{R} \text{S} \text{8} \text{L} \text{F} \text{O} \dashv \text{1/3} \text{R} \text{W} \text{1/3} \text{O} \text{O}$
 $\text{"3/8} \text{R} \text{S} \text{8} \text{L} \text{F} \text{L} \text{3/4} \text{O} \text{1} \text{P} \text{t} \text{1/2} \neg \vdash \neg \text{3/8} \ulcorner \text{R} \text{L} \text{F} \text{R} \text{E} \text{1/3} \text{O} \text{O} \text{"} \text{R} \text{5/8} \text{1/3} \text{E} \text{f} \text{f} \text{I} \text{O} \text{O} \text{1/3} \text{E} \neg \text{O} \text{1} \text{1/3} \text{8} \text{E} \text{5/8} \text{W} \text{1/3} \text{L} \text{F} \text{Y}$
 $\text{O} \text{22} \text{A} \text{A} \text{O} \text{E} \bullet \text{1/3} \text{3/8} \text{O} \text{R} \text{S} \text{1/3} \blacksquare \text{R} \text{1/3} \text{3/8} \text{5/8} \text{L} \text{F} \text{O} \text{E} \vdash \neg \text{3/8} \text{E} \text{1/3}$
 $\bullet \text{12/3} \text{E} \text{O} \text{O} \text{5/8} \text{3/4} \text{"} \text{I} \text{O} \text{Y} \text{O} \text{1/4} \text{A} \text{1/4} \text{1/2} \text{1/4} \text{A} \text{222} \text{f} \text{O} \text{O} \text{1/2} \text{n} \text{A} \text{1/4} \text{1/4} \text{O} \text{C} \text{1/4} \text{f} \text{O} \text{C} \text{1/2} \text{1/4} \text{A} \text{n} \text{1/2} \text{O} \text{A}$
 $\text{f} \text{f} \text{5/8} \text{O} \text{O} \text{5/8} \text{L} \text{t} \text{O} \text{1} \neg \text{5/8} \text{3/4} \text{"} \text{I} \text{O} \text{Y} \text{t} \text{O} \text{1/2} \text{O} \text{1/2} \text{Y} \text{1/2} \text{1/2} \text{O} \text{O} \text{O} \text{n}$
 $\text{f} \text{5/2} \text{3/4} \text{L} \text{F} \text{E} \text{N} \text{5/8} \text{3/4} \text{O} \text{N} \text{L} \text{L} \text{t} \text{3/4} \text{f} \text{f} \text{W} \text{W} \text{W} \text{P} \text{t} \text{O} \text{5/8} \text{L} \text{F} \text{5/8} \text{O} \text{O} \text{L} \text{F} \text{1/3} \neg \text{3/8} \text{N} \text{1/3} \neg \text{U} \text{L} \text{F} \neg \text{3/8} \text{E} \text{1/3} \text{P} \text{t} \text{1/8} \text{N} \text{O}$

[illegible]

Website: <http://www.acme-process.com>

● $\Gamma_{Rt} - V_{T\otimes 5/5/8} \Gamma$ “ $-1/3-3/8$
 $^{3/8} \Gamma_{5/8} \Gamma_{\Gamma} \Gamma_{3/4}$ $\circ 1 P_t$ $1/2 f_{1/4} \mathcal{C}$ “ $-1/3-3/8$ $-\otimes 1/3 N^{2/3/5/8} \Gamma_{\mathcal{R}}$ $1/3 \Gamma_{\mathcal{N}}$ $\blacksquare 1/3 N_{5/6/00}$ $\circ 1/3 \otimes 1/3 \Gamma_{\mathcal{R}}$ $\circ 5/8 W$
 $5/8/00 \otimes \in \mathbb{Y}$ $\otimes \otimes \otimes \mathcal{C} \dagger -3/8 \in 1/3$
 $-1/3/00/00$ $\text{ff} \Gamma_{3/4}$ $\gg i \alpha^{\circ} i \mathbb{Y} \otimes 2 \otimes n \alpha n \otimes 2 \otimes$
 ● $12/3 \in 0/00 5/3/4$ $\gg i \alpha^{\circ} i \mathbb{Y} \alpha \alpha \alpha \otimes 1/2 n \otimes 2 f$ $\alpha \otimes \otimes 2 \alpha \mathcal{C} \alpha \mathcal{C} \otimes$
 $\text{ff} 5/8/00 5/8 \Gamma_{\otimes 1-5/8/4}$ $\gg i \alpha^{\circ} i \mathbb{Y} \otimes i \mathbb{Y} 1/2 \otimes n \mathcal{C} \alpha \mathcal{C} \otimes$
 $N^{2/3} \in 0/00 3/4$ $\in -7/8 1 P_t R_s$ $0/00 5/8 N^{\otimes}$ $\otimes N^{2/3} \in 0/00 P_t 1/8 1 N^{\otimes}$
 $\text{ff} 5/2/3 \Gamma_{\mathcal{F}} \in N_{5/8/4}$ $\otimes N_{\mathcal{L}} \Gamma_{\mathcal{H}} \mathcal{H}_{3/4} \text{ff} W W W P R_s$ $0/00 5/8 N^{25/8} \mathcal{F} V_{\mathcal{F}} \in \mathcal{H}_N N^{25/8} - N_{\mathcal{L}} N^{2/3} 1/8 \otimes \in -5/8 \Gamma_{RR} P_t 1/8 1 N^{\otimes}$

FILTERS

Tfi Filtration (India) Private Limited

“-1/3-3/8 -01/3N_LN_L jff5/81/8-€1/81/3%00 ¶ ■H_T5/8C_R1/3N_L€1- <€C_R5/81/8N_L1C_R;
 ●C_RP_t ffl€-1/3Rs ●1/3%uW^{1/3-1/3}
 “3/83/8C_R5/8F_LF_{3/4} -05/83/8 01P_t 00¥X00 □1/3-01N_LC_R€ ±-3/8V_TF_LN_LC_R€1/3%00 >F_LN_L1/3N_L5/8
 05/81/3C_R01/3N^{010/00} -C_R1F_LF □11/33/8F_L£ ■01/3F_L5/8 00 □P_t ‡P_t <P_t -P_t£ ffl1/3N_L01/3£
 ffl1/3N_L01/3 ‡-3/8V_TF_LN_LC_R€1/3%00 >F_LN_L1/3N_L5/8£ “0N^{05/83/81/32/31/33/8} ¥ 1/401/20020 □V_T01/3C_R1/3N_L£
 ‡-3/8€1/3
 ●12/3€0/005/83/4 »X0¥X01/2001/41/42000 »X0¥X01/200001/200
 fi5/82/3F_L€N_L5/83/4 0N_LN_LH_T3/4ffWWWP_t7/8€0/00N_L5/8C_R01V_TF_L€-01/3F_L€1/3P_t1/81N⁰

Clear Aqua Technologies Private Limited

□1/3%05/8F_L0W^{1/3C_R1/3-} SMV_TH_TH_TV_TC_R1/3% j<€C_R5/81/8N_L1C_R;
 “3/83/8C_R5/8F_LF_{3/4} 01P_t 01/4fn£ -C_R€ 01/301/3C_R£ fflP_t fflP_t SM1€0/00£
 ff€C_RV_T1/80€C_R1/3H_TH_T1/3%0000€ ¥ n1/20000 ffl1/3N^{000/00} 01/33/8V_T£ ‡-3/8€1/3
 ●12/3€0/005/83/4 »X0¥X0001/21/200000 »X0¥X0001/21/21/21/200
 ff5/80/005/8H_T01-5/83/4 »X0¥X01/400n200001/20 »X0¥X01/400C_R1/220001/2
 01/3N^{3/4} »X0¥X01/400¥1/21/21/400n1/4
 fi5/82/3F_L€N_L5/83/4 0N_LN_LH_T3/4ffWWWP_t1/80/005/81/3C_R1/3F_LV_T1/3P_t€-

Advance International

■C_R1N^{000/00}1/3 -01/3C_RN^{01/3} j●1/3C_R05/8N_L€-00 -11C_R3/8€-1/3N_L1C_R;
 “3/83/8C_R5/8F_LF_{3/4} 01P_t 200¥“£ ‡5/8N^{000/00}V_T-N_L -01/3N^{02/35/8C_RL}£ 01P_t 00£ 05/80C_RV_T ■0/001/31/85/8£
 05/8W <5/80/00€ ¥ 00000000£ <5/80/00€£ ‡-3/8€1/3
 ●12/3€0/005/83/4 »X0¥X01/401/401/20000 »X0¥X01/401/21/42201/20
 ff5/80/005/8H_T01-5/83/4 »X0¥X00¥1/2n1/21/400200 »X0¥X00¥1/2n1/21/400201/2
 01/3N^{3/4} »X0¥X00¥1/2n1/21/400201/4 »X0¥X00¥nnnnnn1/20
 fi5/82/3F_L€N_L5/83/4 0N_LN_LH_T3/4ffWWWP_t1/33/801/3-1/85/8€-3/8V_TF_LN_LC_RRs€-3/8€1/3P_t1/81N⁰

Aircon Handling Systems Private Limited

-V_T3/801/3%u1/3C_R■1/3€ 0P_t
 ●1/3-1/30€-00 <€C_R5/81/8N_L1C_R
 “3/83/8C_R5/8F_LF_{3/4} “€C_R1/81- ‡1V_TF_L5/8£ 00N_L0 -C_R1F_LF_L£ <13/83/81/3--1/3 ‡-3/8V_TF_LN_LC_R€1/3%00
 >F_LN_L1/3N_L5/8£ ■5/85/8-Rs1/3 1/2-3/8 -N_L1/305/8£ -5/8-01/3%00V_TC_RV_T ¥ 2n00000 SM1/3C_R-1/3N_L1/3%u1/3£
 ‡-3/8€1/3
 ●12/3€0/005/83/4 »X0¥X00001/400000 »X0¥X00002n00000200
 ff5/80/005/8H_T01-5/83/4 »X0¥X00¥1/201/4nn0022 »X0¥X00¥1/201/4nn0000
 01/3N^{3/4} »X0¥X00¥1/201/4nn002n
 fi5/82/3F_L€N_L5/83/4 0N_LN_LH_T3/4ffWWWP_t1/3€C_R1/81-€-3/8€1/3P_t1/81N⁰

Shalin Composites India Pvt. Ltd.

■1/3C_R1/30 <P_t ■1/3N_L€0/00
 ●1/3-1/30€-00 <€C_R5/81/8N_L1C_R
 “3/83/8C_R5/8F_LF_{3/4} “f1/201/40 □€3/80€N^{01/3} “H_T1/3C_RN_LN^{05/8-N}£ -1N^{00W}1/3C_R -1/3MD1/3C_R
 ●1/30/001/33/8 fi5/8F_LN_L£ ●V_TN^{02/31/3}€ ¥ 00000000£ ●1/301/3C_R1/3F_L€N_LC_R1/3£ ‡-3/8€1/3
 ●12/3€0/005/83/4 »X0¥X00001/400000 »X0¥X0000001/20000
 fi5/82/3F_L€N_L5/83/4 0N_LN_LH_T3/4ffWWWP_t7/8C_RH_T1/3F_LV_T1/3N_L5/81/80P_t1/81N⁰

DISTILLATION ASSEMBLY

Garg Process Glass India Pvt. Ltd.

—1—N_L1/31/8N_L ■5/8R_LF_L—3/4 ●R_L □1/3—L_F°R_S1/3N_° □1/3R_L°f ●R_L <5/85/8H_T1/3% □1/3R_L°
 “3/83/8R_L5/8L_F3/4 1/2f1/21/21/2° 05/8W —1—1/30/0 R_L€—% ‡—3/8P_t >L_FN_LP_t●1°€5/8 ff€N_°5/8
 ff°5/81/3N_LR_L5/8 R_L€—% □11/33/8●1/3°001/33/8¥ff5/8L_FN_L ●V_TN_°2/31/3€¥ C_{aa} anC_L
 ●1/3°1/3R_L1/3L_F°N_LR_L1/3€ ‡—3/8€1/3P_t
 ff5/8°003/4 »X_° a1/21/2 1/2°1/4a1/4a f 1/41/2nm1/2C_°
 ff5/8°005/87/81/3N_°3/4 »X_° a1/21/2 1/2°1/4a1/4aP_t
 >N_°1/3€°003/4 1/3R_L°1/3R_L°001/3L_F€—3/8€1/3P_t1/81N_°
 >N_°1/3€°003/4 €—7/81”1/3R_L°001/3L_F€—3/8€1/3P_t1/81N_°
 ff5/83L_F€N_L5/83/4 1/3N_LH_T3/4ff°1/3R_L°001/3L_F€—3/8€1/3P_t1/81N_°

Singla Scientific Glass Industries

“3/83/8R_L5/8L_F3/4 >¥22€ —1/3R_L3/81/3R_L >L_FN_L1/3N_L5/8€ “%W1/3 □11/33/8€ “%W1/3 □11/33/8€
 ffl1/33/813/81/3R_L1/3¥ 1/4X_{aa}0X_L □V_T%1/3R_L1/3N_L ‡—3/8€1/3
 ●R_LP_t □1/3°1/3L_F° —€—°001/3 ¥ X_°1/22a1/2°1/4C_°
 ●R_LP_t —1/3—1/81/3°00 —€—°0 ¥ 1/2°1/4C_°
 ff5/8°003/4 »X_°1/2n2¥1/22n1/4C_°1/2€ »X_°1/2n2¥1/22aa1/4
 >N_°1/3€°003/4 R_L1/3°1/3L_F°L_F€—°001/3L_F1/8€5/8—N_L€7/8€1/8P_t1/81N_°
 >N_°1/3€°003/4 1/31/81/8V_TN_LL_F°L_F€—°001/3L_F1/8€5/8—N_L€7/8€1/8P_t1/81N_°
 ff5/83L_F€N_L5/83/4 1/3N_LH_T3/4ff°1/3R_L°001/3L_F€—°001/3L_F1/8€5/8—N_L€7/8€1/8P_t1/81N_°

Accumax India

“3/83/8R_L5/8L_F3/4 aa2€ 0€R_LF_LN_L 0°0011R_L ffl€L_F°1/3°00 ff1W_L5/8R_L <L_FN_LR_L€1/8N_L
 —5/8—N_L5/8R_LTM1/3—1/3°H_TV_TR_L€L°5/8W <5/8°00°€ ¥ aa2a2C_° ‡—3/8€1/3
 ●12/3P_t3/4 »X_° X_°1/2°1/4C_°1/2€ »X_° X_°1/2°1/4C_°
 >N_°1/3€°003/4 1/31/81/8V_TN_°1/3N_°1/3€°00P_t1/81N_°
 ff5/83L_F€N_L5/83/4 1/3N_LH_T3/4ff°1/3R_L°001/3L_F€—°001/3L_F1/8€5/8—N_L€7/8€1/8P_t1/81N_°

STAR SCIENTIFIC GLASS CO.

“3/83/8R_L5/8L_F3/4 >¥2n€ —1/3R_L3/81/3R_L >L_FN_L1/3N_L5/8€ “%W1/3 □11/33/8€ ffl1/33/813/81/3R_L1/3 — 1/4X_{aa}0X_L
 □V_T%1/3R_L1/3N_LP_t ‡—3/8€1/3
 ■1—5/8 1P_t»X_°1/2n2¥1/22°1/2C_°1/4 f 1/22n1/4C_°
 ●12/3P_t3/4 »X_° ¥ X_°1/22a 1/4C_°
 >N_°1/3€°00 ‡3/83/4 €—7/81”L_FN_L1/3R_L1/8€5/8—N_L€7/8€1/8€—3/8€1/3P_t1/81N_°
 ff5/83L_F€N_L5/83/4 1/3N_LH_T3/4ff°1/3R_L°001/3L_F€—°001/3L_F1/8€5/8—N_L€7/8€1/8€—3/8€1/3P_t1/81N_°

Unity Glass Industry

Address: C-54, Sardar Industrial Estate, Road No. 4, Ajwa Road, Vadodara - 390 019

—1—N_L1/31/8N_L ■5/8R_LF_L—3/4 ●R_LP_t ■R_L1/3N_°13/8
 ●12/3€°005/83/4 »X_°¥X_°1/2°1/4C_°
 ■1—5/83/4 »X_°¥1/2n2 ¥1/22°1/4C_° f 1/22°1/4C_°
 >N_°1/3€°003/4 V_T—€N_LR_L°001/3L_F€—3/8V_TL_FN_LR_L°001/3€°00P_t1/81N_°
 >N_°1/3€°003/4 L_F1/3°005/8”V_T—€N_LR_L°001/3L_F€—3/8V_TL_FN_LR_L°001/3€°00P_t1/81N_°
 ff5/83L_F€N_L5/83/4 1/3N_LH_T3/4ff°1/3R_L°001/3L_F€—°001/3L_F1/8€5/8—N_L€7/8€1/8€—3/8€1/3P_t1/81N_°

STORAGE TANK

Turraco Industrial Limited

“3/8”R5/8”F3/4 01 2000 1/2”F— 11/3”R 1/3”W1/3”F1— —VTRVT0005/8”R5/8”R 1/3”L F
0005/8”R1/3

■N5/8”R “3/8”R5/8”F3/4

“3/8”R5/8”F3/4 fi□ —1NHTVT—3/8” ±0005/8”12/31 —NLR5/8”NL ■7/8” —01/3”RNLRS 11/3”R
“2/3”VT0005/8”±02/31”R 1/3”L F 0005/8”R1/3

“3/8”R5/8”F3/4 1/2” ±RS1/3—1/3 ±2/31/3 ¥ ±01/3—3/81 11/3”R ±01/3—3/81”R 1/3”L F
ff5/8”003/4 »1/21/40¥00¥1/21/21/2” 20001/21/21/2”
N1/3”003/4 €—7/81”N VTRR1/31/81/81N
N1/3”003/4 N VTRR1/31/81—3/8”N1/3”000P1/81N
fi5/8”L FNL5/83/4 0NLHT3/4fWWWPNL VTRR1/31/81P1/81N

FeichengJinta Machinery Co., Ltd.

“3/8”R5/8”F3/4 ±000N5/81/8” ±—3/8”VTRNL R1/300 5/8”5/8”001HTN5/8—NL \$1—5/8”
O5/8”1/8”05/8—0 —01/3—3/81—
ff5/8”003/4 »0N¥21/40¥1/41/400ann ¥0N¥21/40¥1/41/401/42nn ¥0N¥21/40¥1/41/401/41/42nn
O1/3N3/4 »0N¥21/40¥1/41/400ann
¥N1/3”003/4 R1/3—0”%€—N1/3”R1 VTRP1/81N
\$€ —13/8”5/83/4 1/2000
fi5/8”L FNL5/83/4 WWWPNL%€—N1/3”R1 VTRP1/81N
fi5/8”L FNL5/83/4 O5/8”1/8”05/8—0¥%€—N1/3”P1/81N

Schumann Tank &Stahlbau GMBH

“3/8”R5/8”F3/4 —1/8”VTN1/3— ff1/3—% VT—3/8 —N1/3”0002/31/3 VT □N2/31” O1/3”R€%L FNL RP
00 1/41/41/2n fi1/00N€R L FNL5/8”NL
●1/3”RNL— TMä05/8”R j—HT1/3—€L F 0000€L F 00 5/8”R N1/3—
■01—5/83/4 j»00 1/41/20P1/20P100
—5/8”0000 VT001/3”R3/4 j»00 200P1 200P14000
N1/3”003/4 N1/3”RNL—R%1/35/8”5/8”R”L F1/8”VTN1/3—¥NL1/3—%L F P1/81N
N1/3”003/4 N1/3”RNL—R%1/35/8”5/8”R”NL1/3—%L FNL1/3”0002/31/3 VTP1/85/8
■01—5/83/4 j»00 1/41/20P1/20P100
O1/3N3/4 j»00 1/41/20P1/20P100
N1/3”003/4 €—7/81”L F1/8”VTN1/3—¥NL1/3—%L F P1/81N
fi5/8”L FNL5/83/4 0NLHT3/4fL F1/8”VTN1/3—¥NL1/3—%L F P1/81N

—1—€N5/81/8” ±—3/8”1/3 ■R€1/3N5/8 R€N€N5/83/8

“3/8”R5/8”F3/4 O¥n j—1/31/8% 5/8—NLRRSj ■HTHT 1/4fn —1/301/3 € VT2/3”00€L F€—
ffR VTRNL ■%0001/3 ±—3/8”VTRNL R1/300 “R5/81/3 ■01/3”L F5/8 ¥ 00 5/8”W 5/8”00€ ¥
0001/2” ±—3/8”1/3

●12/3”0005/83/4 »00¥00001/4n002 ¥00¥01/421/21/22002 ¥00¥001/21/21/21/41/21/4

■01—5/83/4 »00¥00¥1/2n00002 ¥00¥00¥0n1/2n00

O1/3N3/4 »00¥00¥1/2n000021/4

N1/3”003/4 5/8—F VTRRS”L F—€N5/81/8”€—3/8”1/3P1/81N

fi5/8”L FNL5/83/4 0NLHT3/4fWWWPNL F—€N5/81/8”€—3/8”1/3P1/81N

Sri Hanuman Engineering Works

“3/8³/₈ R⁵/₈ L⁵/₈ F³/₄ 01Pt 2n1/4 f1/2 01/3 % 01H¹/₃ 0/00 01/3 01/3 R 01/3 € - 011/3³/₈ 05/8¹/₃ R
ffl5/8⁵/₈ R¹/₃ % 01/3 - 5/8 Rs 1/3 ff5/8 N⁰H⁰ 005/8 5/8 - Rs 1/3 1/2 - 3/8 - N¹/₃ 05/8 1/3 - 01/3 000¹ R⁵/₈ ¥20
● 12/3³/₄ » 02 0201/4 1/4 1/2 21/4 02
N⁰1/3 € 000³/₄ H¹ R¹/₃ % 01/3 L⁵/₈ F³/₄ R⁵/₈ - 02 N⁰1/3 € 000Pt 1/8¹ N⁰
N⁰1/3 € 000³/₄ € - 7/8¹ 01/3 - V¹ N⁰1/3 - H¹ 01/3 R⁰1/3 5/8 - 02 - 5/8⁵/₈ R¹ F¹ Pt € -
fi5/8²/₃ L⁵/₈ € N⁵/₈ 3/4 WWWPt 01/3 - V¹ N⁰1/3 - H¹ 01/3 R⁰1/3 5/8 - 02 - 5/8⁵/₈ R¹ F¹ Pt € -

Mm DASS ENGINEERING WORKS

“3/8³/₈ R⁵/₈ L⁵/₈ F³/₄ 02 f1/4 1/4 02 L⁵/₈ N¹ 1/8 R¹ L⁵/₈ F³/₄ N⁰1 N⁰ € - 1/3 01/3 R⁰ 1/3 000¹/₃ € L⁵/₈ H⁰ 000¹/₃ Rs 1/3
- 5/8 W 5/8 N¹
● 12/3³/₄ » 02 0202 0202 0202
N⁰1/3 € 000³/₄ N⁰ N⁰ 3/8 1/3 L⁵/₈ F³/₄ - 02 Pt 1/2ⁿ N⁰1/3 € 000Pt 1/8¹ N⁰
fi5/8²/₃ L⁵/₈ € N⁵/₈ 3/4 02 N¹ L⁵/₈ H¹ 3/4 f f N⁰ N⁰ 3/8 1/3 L⁵/₈ F³/₄ - 02 - 5/8⁵/₈ R € - 02 W¹ R⁰ 1/3 L⁵/₈ F¹ Pt 1/8¹ N⁰

Swastik Engineering Works,

“3/8³/₈ R⁵/₈ L⁵/₈ F³/₄ “1/2 02 1/3 - % 01/3 % - V¹ € 000³/₈ € - 02 - Rs N⁰ H⁰ 01 - Rs 1/3 1/3 R⁰ % 02 05/8¹/₃ R
● 5/8 01/3 R¹ V¹ 02 L⁵/₈ 1/3 000⁰/₀₀ 02 - 01/3 - 3/8 02 1/3 000 € “- 3/8 05/8 R € 1/3 L⁵/₈ N¹ ● V¹ N⁰ 2/3 1/3 € ¥
02020202 1/2 1/3 01/3 R¹ 1/3 L⁵/₈ N¹ R¹ 3/8 1/3 - 3/8 € 1/3 Pt
ff5/8⁰/₀₀ 5/8 H¹ 01 - 5/8³/₄ 02 ¥ 1/2 1/2 1/2 02020202 1/4 1/2 ¥ 1/2 1/2 1/2 02020202 1/2 02
N⁰1/3 € 000³/₄ % € 02 - 5/8 L⁵/₈ F¹ Pt 1/3 - 1/8 010⁰/₀₀ € “L⁵/₈ W¹ 1/3 L⁵/₈ N¹ € % N⁵/₈ 1/8 02 - 1 H¹ 1/3 1/8 % Pt - 5/8 N¹ L⁵/₈
N⁰1/3 € 000³/₄ N⁰1/3 R⁰ % 5/8 N¹ € - 02 “L⁵/₈ W¹ 1/3 L⁵/₈ N¹ € % N⁵/₈ 1/8 02 - 1 H¹ 1/3 1/8 % Pt - 5/8 N¹
N⁰1/3 € 000³/₄ 3/8 € R⁵/₈ 1/8 N¹ L⁵/₈ R¹ L⁵/₈ “L⁵/₈ W¹ 1/3 L⁵/₈ N¹ € % N⁵/₈ 1/8 02 - 1 H¹ 1/3 1/8 % Pt - 5/8 N¹
fi5/8²/₃ L⁵/₈ € N⁵/₈ 3/4 WWWPt L⁵/₈ W¹ 1/3 L⁵/₈ N¹ € % N⁵/₈ 1/8 02 - 1 H¹ 1/3 1/8 % Pt - 5/8 N¹

Nishu Enterprise

- 01/3 02 5/8 L⁵/₈ F³/₄ TM 01/3 02 5/8 R € i R¹ H¹ R € 5/8 N¹ L⁵/₈ R¹
“3/8³/₈ R⁵/₈ L⁵/₈ F³/₄ - 01 H¹ 01 Pt 02 - V¹ € 000³/₈ € - 02 01 Pt 1/2 02 “3/8 € N¹ € “H¹ 1/3 R⁰ N⁰ 5/8 - N¹ L⁵/₈
1/3 - € W¹ 1/3 3/8 - R¹ L⁵/₈ F³/₄ 011/3 3/8 1/2 05/8¹/₃ R ffl1/3 L⁵/₈ 1/3 - N¹ “€ L⁵/₈ W¹ 1/3 R Rs 1/3 02
SM 1/3 - 3/8 € 02 1/3 000 € fi5/8 L⁵/₈ N¹ ● V¹ N⁰ 2/3 1/3 € ¥ 02020202 02 1/3 01/3 R¹ 1/3 L⁵/₈ N¹ R¹ 3/8 1/3 - 3/8 € 1/3
● 12/3 € 000⁵/₈ 3/4 » 02 ¥ 02 01/2 0202 1/2 02 02 » 02 ¥ 02 01/2 0202 1/4 1/2 1/2 02 1/2
ff5/8⁰/₀₀ 5/8 H¹ 01 - 5/8³/₄ » 02 ¥ 1/2 1/2 ¥ 1/2 0202 02 1/2 1/2
fi5/8²/₃ L⁵/₈ € N⁵/₈ 3/4 02 N¹ L⁵/₈ H¹ 3/4 f f WWWPt - € L⁵/₈ V¹ 5/8 - N⁵/₈ R¹ H¹ R € L⁵/₈ Pt 1/8¹ N⁰

Chandrllok International

SM 1/3 - 1/3 - V¹ H¹ N¹ 1/3 i R¹ H¹ R € 5/8 N¹ L⁵/₈ R¹
“3/8³/₈ R⁵/₈ L⁵/₈ F³/₄ 01 Pt 02 02 1/3 R Rs 1/3 01/3 - % 02 05/8 W 5/8 000 € ¥ 02020202 1/2 5/8 000 € 1/3 - 3/8 € 1/3
● 12/3 € 000⁵/₈ 3/4 » 02 ¥ 02 02 02 02 1/4 01/4 02 02 » 02 ¥ 02 02 02 1/4 02 1/2 1/4
ff5/8⁰/₀₀ 5/8 H¹ 01 - 5/8³/₄ » 02 ¥ 02 1/2 1/4 1/2 0202 02 02 » 02 ¥ 02 1/2 1/4 1/2 02 1/4 02
01/3 N¹ 3/4 » 02 ¥ 02 1/2 1/4 1/2 0202 02 02
fi5/8²/₃ L⁵/₈ € N⁵/₈ 3/4 02 N¹ L⁵/₈ H¹ 3/4 f f WWWPt 1/8 01/3 - 3/8 R⁰ 000¹/₀ Pt € -

FILTER

Italian Stone Processing Machineries

‡-3/8 V_TF_NL_R€1/3%00 N²¹/3-V_T7/81/31/8 N_VT_R€-0 7/81/31/8€%00€N_L€5/8L_F -
\$1-1/3‡-3/8 V_TF_NL_R€1/3%005/8-1/80€1 ffl€1/85/8-MD1/3 ¥ ‡N_L1/3%00Rs
ff5/80/003/4 » 1/4X_P1/41/41/4P_n1/40P_n00
N²¹/3€%003/4 €-7/81" L_FN_L1-5/8N²¹/31/80€-5/8L_R€5/8L_FP_T1/81N²
fi5/82/3L_F€N_L5/83/4 0N_LN_LT_T3/4ffWWW_PL_FN_L1-5/8N²¹/31/80€-5/8L_R€5/8L_FP_T1/81N²

Suzhou Rilant Machinery Co., Ltd.

"3/83/8L_R5/8L_F3/4011N² 0223020n -V_TL_F€-5/8L_FL_F 2/3V_T€%003/8€-02 0■P_T1/420 ffl€-1/3- 1/3L_FN_L
011/33/8 SMV_T-L_F01/3-2 TM€1/3-0L_FV_T
01/31/8N_L1L_RRs "3/83/8L_R5/8L_F3/40■P_T0n -1V_TN_L0 TM€-L_F01/3%€1/3-0 011/33/82
5/805/80/001H_TN²⁵5/8-N_L \$1-5/82 SMV_T-L_F01/3-2 TM€1/3-0L_FV_T
■01-5/83/40n¥201/2¥2201/4¥21/202
01/31N²3/40n¥201/2¥2201/4¥20202
N²¹/3€%003/4 €-7/81" L_FMD_R€%001/3-N_LP_T1/81N²
fi5/82/3L_F€N_L5/83/4 0N_LN_LT_T3/4ffWWW_PT_T7/8€%00N_L5/8L_RYN²¹/3%€-0N²¹/31/80€-5/8P_T1/81N²

Anya Filter Media

"3/83/8L_R5/8L_F3/401P_T2020□1-0-1-0 011/33/82 -0€%€1/3MD0V_T1/3-0 -€N_LRs a2a2a2a2 ‡5/82/35/8€2
■P_T0P_T -0€-1/3
■01-5/83/4 »0n¥1/400¥01/4000n21/4
N²¹/3€%003/4€-7/81"1/3-Rs1/37/8€%00N_L5/8L_RN²⁵5/83/8€1/3P_T1/81N²³
N²¹/3€%003/4 L_F1/3%005/8L_F"1/3-Rs1/37/8€%00N_L5/8L_RN²⁵5/83/8€1/3P_T1/81N²³
N²¹/3€%003/4 1/3-Rs1/37/8€%00N_L5/8L_RN²⁵5/83/8€1/3"01N_LN²¹/3€%00P_T1/81N²
fi5/82/3L_F€N_L5/83/4 0N_LN_LT_T3/4ffWWW_PT_T1/3-Rs1/37/8€%00N_L5/8L_RN²⁵5/83/8€1/3P_T1/81N²

TRM-Top Rank Machinery Inc.

"N_LN_LP_T3/4 ●L_RP_T 5/8%005/801/3- SM1/31
"3/83/8L_R5/8L_F3/4 ■00¥0 1-0005/8 -N_LP_T -0V_T%00€- €L_FN_LP_T 05/8W ff1/3€H_T5/8€ -€N_LRs2
ff1/3€W1/3-2 \$€H_T -13/85/8 1/21/40
N²¹/3€%003/4 L_F5/8L_R0€1/85/8"N_LL_RYN²¹/31/80€-5/8L_RRsP_T1/81N²
ff5/8R3/4 » 00n 1/2 0n0n 1/40n0
01/31N²3/4 » 00n 1/2 0n0n022
fi5/82/3L_F€N_L5/83/4 0N_LN_LT_T3/4ffWWW_PT_TN_LL_RYN²¹/31/80€-5/8L_RRsP_T1/81N²

Aguapuro Equipments Private Limited

-1-N_L1/31/8N_L ■5/8L_RL_F1-3/4TM€N_L5/8-3/8L_R1/301/3-5/8
"3/83/8L_R5/8L_F3/4 00nf0002 TM101/3-€ ‡-3/8 V_TF_NL_R€1/3%00 -1N²¹H_T%005/8N_L -V_T€%003/8€-0
01P_T 02 fflP_T 0P_T ■V_TL_R1/30 011/33/82 -0V_T-1/32/301/3N_LN_L€
●V_TN²²3/31/3€ ¥ 02221/21/22 01/301/3L_R1/3L_F0N_LL_R1/32 ‡-3/8€1/3
●12/3€%005/83/4 »i000 - 0n222020222 »i000 ¥ 0000020202
■01-5/83/4 »i000 ¥ 1/21/20 - 1/20221/202n2 »i000 ¥ 1/21/20 - 1/20221/2021/4
fi5/82/3L_F€N_L5/83/4 0N_LN_LT_T3/4ffWWW_PT_TN²€-5/8L_R1/3%00W1/3N_L5/8L_RH_T%001/3-N_LL_FP_T-5/8N_L

—“†“□“ ‡□,ffi—ff□...

“3/83/8_R5/8_L3/4 ‡P_o1P_n¥1/2^aƒ°£ ‡ffi—“‡□ -ffi‡R,‡□□£●1/3€— □11/3/8 ffi1_HT_R1/3—£,€_LF_N3/4

●5/83/81/3_u 2^a1/2 1/41/4_Q£ff5/8°001/3—°1/3—1/3£ ‡-3/8€1/3

■°3/4 »°_Q2_Q¥ 1/21/422°_Q£ 1/21/42°_n1/2

●12/3€°005/8 °V_TN°2/35/8_R3/4 »_QQ_Q21/2_Q1/4_QQ

›N°1/3€°003/4 €—7/81”_L1/3°1/3_R1/3€—3/8_V_LF_N_L_RS_Pt1/81_N°

›N°1/3€°003/4 _L1/3°1/3_R1/3€—3/8_V_LF_N_L_RS€—3/8€1/3”°N°1/3€°00P_t1/81_N°

fi5/83/8_LF€_N5/83/4 °N_L_L_T3/4_fWWW_Pt_L1/3°1/3_R1/3€—3/8_V_LF_N_L_RS_Pt1/81_N°

Brisanzia Technologies Private Limited

“3/83/8_R5/8_L3/4 _QQ£ °_LF_N °0011_R£ ‡1/3_L1/3—_HT_V_R£ ‡P_t■P_t ›N_L5/8—_LF€1—£ ■_H_T_Pt

■1/3_N_L_T1/3_R°1/3—° ‡-3/8_V_LF_N_L_R€1/3°00 “_R5/81/3£°5/8_W ›5/8°00€¥ °°a a_Q1/2£ ‡-3/8€1/3

›N°1/3€°003/4 €—7/81”₂3_R€_L1/3—MD€1/3P_t1/81_N° 2/3_R€_L1/3—MD€1/3”°N°1/3€°00P_t1/81_N°

●12/3€°005/8 °1P_t3/4 »i_Q°:¥i_Q°°°a2_Q2°°_Q f _Q°°°1/4°_n_QQ_Q1/2

■°1—5/83/4 »i_Q°:¥i_Q°°:¥1/21/2₂_Q°°a1/4 f _Q°1/41/4^a1/2°^a

○1/3_N °1P_t3/4 »i_Q°:¥i_Q°°:¥1/21/21/21/4°°a_Q

—1—_N_L1/31/8_N ■5/8_R_L1—3/4 ●_RP_t —_R€°5/8_LF° □15/8°00i,€_R5/81/8_N1_R;

›¥●1/3€°003/4 2/3_R€°5/8_LF°”2/3_R€_L1/3—MD€1/3P_t1/81_N°

●12/3€°005/8 °1P_t3/4 »_Q° _Q°°°a2_Q2°°_Q

›¥●1/3€°003/4N°1/3_R°5/8_N€—°”2/3_R€_L1/3—MD€1/3P_t1/81_N°

fi5/83/8_LF€_N5/83/4 °N_L_L_T3/4_fWWW_Pt_L1/3_L5/8¥_W1/3_N5/8_R¥_L_R5/81/3_N°5/8—_N_L_LF_Pt1/81_N°

Bottmac India

SM1/3⊕€—3/85/8_R—€—°°i,€_R5/81/8_N1_R;

“3/83/8_R5/8_L3/4 SM n_Q°£ ›_VT°1/3€ ‡-3/8_V_LF_N_L_R€1/3°00 “_R5/81/3£ ●5/85/8_R_V_T_N □11/3/8£

□°1/3MD€1/32/31/3/8 ¥ 1/2°°°an£ ffi_N_L_L1/3_R ■_R1/33/85/8_LF°£ ‡-3/8€1/3

●12/3€°005/83/4 »_Q°¥_Q°°°a1/21/2°1/21/21/2£ »_Q°¥_Q°°°a1/21/2°1/21/21/2

○1/3_N3/4 »_Q°¥_Q°1/2^a¥1/2°°°°_Q°°

fi5/83/8_LF€_N5/83/4 °N_L_L_T3/4_fWWW_Pt_L2/31_N_LN°1/31/8P_t—5/8_N

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Zeal International

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Fax: +91-11-43580558

Website: <http://www.zealinternational.in>

New National

● $R_{P_t} R^{1/5/8-5/8/5} N_L - \epsilon - \omega \otimes \square^{1/3} R N_L - 5/8 R_{\zeta}$

● $R_{P_t} - \otimes^{1/3} \oplus - 5/8/5 N_L - \epsilon - \omega \otimes$

" $3/8/3 R^{5/8} F L F^{3/4}$ " \yen $\circ f^{1/4} \Delta$ $\circ^{1/3} R^{1/3} \epsilon - 1/3$ $\ddagger - 3/8 V L F N_L R \epsilon^{1/3} \%$ " $R^{5/8/3} \Delta$ $\square^{1/3} L F^{5/8} \yen$ $\circ \Delta$ $\circ^{5/8} W$
 $5/8 \%$ $\otimes \epsilon$ \yen $\otimes \otimes \otimes 1/2 \otimes \Delta$ $5/8 \%$ $\otimes \epsilon \Delta$ $\ddagger - 3/8 \epsilon^{1/3}$

$- 1 - N_L^{1/3/8} N_L^{3/4} \otimes \otimes \otimes \otimes \otimes \otimes \otimes$

● $12/3 \epsilon \%$ $\otimes 5/8^{3/4}$ » $\otimes \otimes \otimes \otimes \otimes 21/4^{2222} \otimes \Delta$ » $\otimes \otimes \otimes \otimes \otimes 2222 \otimes \otimes$

$f i^{5/8/3} L F \epsilon N_L^{5/8/4}$ $\otimes N_L L H T^{3/4} f f W W W P_t - 5/8 W - 1/3 N_L \epsilon 1 - 1/3 \%$ $\otimes P_t^{1/8} 1$

■ $R N_L 1 -$ $\rightarrow - \otimes \epsilon - 5/8/5 R \epsilon - \otimes$ ■ $R \epsilon \otimes^{1/3} N_L^{5/8}$ $R \epsilon N^{\circ} \epsilon N_L^{5/8/8} \Delta$ $f f^{1/3} - 5/8$

$- 1 - N_L^{1/3/8} N_L$ ■ $5/8 R L F^{1-3/4} \epsilon \%$ $\otimes H T$ $\ddagger P_t$ $S M^{1/3} N_L W^{5/8}$ $j \epsilon R^{5/8/8} N_L^{1} R_{\zeta}$

● $R_{P_t} - \otimes R \epsilon - \epsilon W^{1/3} L F^{1/3} -$

" $3/8/3 R^{5/8} F L F^{3/4}$ " $\square \%$ $\otimes N_L$ $\circ^{1/3} P_t$ $1/2^n \otimes$ $f f i - \epsilon N_L$ $\circ^{1/3} P_t$ $\otimes 2 \otimes \yen$ " Δ $\circ^{5/8/3} R$ $f i^{1/3} N_L^{5/8} R$ $f f^{1/3} - \%$ $\otimes \Delta$

■ $1^{\circ} u^{1/3} R^{1/3} -$ $\square^{1/3/3}$ $\circ \Delta$ $f f i H T \otimes^{1/3} - \Delta$ $f f^{1/3} - 5/8$ \yen $\otimes \otimes \otimes \otimes \otimes \otimes$ ■ $1/3 \otimes^{1/3} R^{1/3} L F \otimes N_L R^{1/3} \Delta$ $\ddagger - 3/8 \epsilon^{1/3}$

● $12/3 \epsilon \%$ $\otimes 5/8^{3/4}$ » $j \otimes \otimes \otimes \yen$ $\otimes 1/4^{1/2} 1/2^{2 \otimes 1/4} \otimes n$

■ $\otimes^{1-5/8/4}$ » $j \otimes \otimes \otimes \yen$ $j^{1/2} 1/2 \otimes - 1/2^{2 \otimes \otimes 1/4} \otimes \otimes$ » $j \otimes \otimes \otimes \yen$ $j^{1/2} 1/2 \otimes - 1/2^{2 \otimes \otimes 1/4} \otimes \otimes$

$f i^{5/8/3} L F \epsilon N_L^{5/8/4} \otimes N_L L H T^{3/4} f f W W W P_t^{1} R N_L^{1-5/8} - \otimes \epsilon - 5/8/5 R \epsilon - \otimes P_t^{1/8} 1 N^{\circ}$

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FLUID BED DRYER

Promas Engineers Pvt. Ltd.

"3/8" CR5/8 LF3/4 ■ R1N21/3 LF 1 V1F5/8 £ ■ 001N1 01Pt □ ¥Qn® f " ¶ -£ ffff—
 ‡-3/8 V1FNL CR1/300 "CR5/8/3 ● ‡-£ □ 1/2/3/1/3005/8 £ 01/3⊕€ ● V1N22/3/3€ - 0aa0aa0£
 ● 1/301/3 CR1/3 LFNL CR1/3 £ ‡-3/8€1/3
 ff5/80005/8 H1-5/83/4 »Q2¥1/21/2¥1/2n22200 f »Q2¥1/21/2¥1/2n22201/2 £ »Q2¥1/21/2¥1/2n22201/4 f »Q2¥
 1/21/2¥1/2n22200 f »Q2¥1/21/2¥1/2n22202
 ¥N21/3€0003/4 LF1/30005/8 LF"HT CR1N21/3 LF€-3/8€1/3 Pt1/81N2
 fi5/83 LF€N15/83/4 0N1N1 H13/4 f WWWPT HT CR1N21/3 LF5/8-0€-5/85/8 CR LF Pt1/81N2

Chamunda Pharma Machinery Pvt. Ltd.

"3/8" CR5/8 LF3/4 0n21/2 £ "—01/3N2V1-3/81/3 ,LFN1/3N15/8" £ 0CRPt □ 1/3N2100 —CR1LF £ □ 11/33/8 LF £
 □ Pt1Pt1-Pt £ ■ 01/3 LF5/8 ¥ ‡ff £ ffl1/3N1⊕1/3 "0N25/83/1/3/3/3/8 - 1/401/2 002Pt □ V1C01/3 CR1/3N1
 ‡-3/8€1/3 Pt
 ff5/80003/4 »Q2 0Q 1/2200 220Q f 1/2200 220Q
 ¥N21/3€0003/4 €-7/81"1/801/3N2V1-3/81/3 Pt€-
 fi5/83 LF€N15/83/4 0N1N1 H13/4 f WWWPT1/801/3N2V1-3/81/3 Pt€-

Ace Industries (India) Pvt. Ltd.

"3/8" CR5/8 LF3/4 TM ¥ 000 f 1/2 £ □ ‡-£ 0a -05/83/8 LF "CR5/8/3 £ ffl1/3 H1€ £ ,€LFNL CR€1/8N1
 -V1000 LF1/3 CR £ □ V1C0 CR1/3N1 Pt ‡-3/8€1/3 Pt
 ff5/80005/8 H1-5/83/4 ¥ »Q2¥1/21/2¥ 01/21/220222 f 1/2Q1/220n1/4
 ● 12/3€0005/83/4 ¥ »Q2¥Q1/400222001/4a
 ¥N21/3€0003/4 1/3N2€N1"1/31/85/81/85/8-N1 CR€7/8 V105/8 LF Pt1/81N2
 ¥N21/3€0003/4 LF1/30005/8 LF"1/31/85/81/85/8-N1 CR€7/8 V105/8 LF Pt1/81N2
 fi5/83 LF€N15/83/4 0N1N1 H13/4 f WWWPT1/31/85/81/85/8-N1 CR€7/8 V105/8 LF Pt1/81N2

Excel Plants & Equipment Pvt Ltd

—1—N11/31/8N1 ■ 5/8 CR LF1— ¥ ● CRPt ffl1/31/3Rs...5/8005/8
 "3/8" CR5/8 LF3/4 □ 1/3N1 Pt 01 n200 £ ● 1 V1C05/8 ¥ SM V1 CR V1000€ £ ● ‡- —01/3C01/3-£ ffl1/3000¥C0u05/83/8
 ■ V1-5/8 ¥ 0222200 £ ● 1/301/3 CR1/3 LF0N1 CR1/3
 —1/300000 ffl1-3/4 ¥ »Q2¥Q1/21/2200nn20 f 21/221/42¥n0Q200
 01/3N 0 V1N22/35/8 CR ¥ 21/221/42¥n0Q200
 ¥N21/3€000 ‡ ¥ V13/81/3Rs"5/8N15/8000 H10001/3-N1 LF Pt1/81N2
 fi5/83 LF€N15/83/4 0N1N1 H13/4 f WWWPT LF N25/8 Pt€-

SSP Pvt Limited

"3/8" CR5/8 LF3/4 21/4 ● €0005/8 LF N1-5/8 £ ● 1/3N1 0 V1 CR1/3 □ 11/33/8 £ 01/3 CR €3/81/32/31/33/8 £
 ‡1/3 CR Rs1/3-1/3¥21/20 221/4 ‡-3/8€1/3
 ■ 01-5/83/4 »jQ2¥j¥j21/2Q2¥j001/4022 f nnn2022
 01/3N3/4 »jQ2¥j¥j21/2Q2¥j001/4000
 ¥N21/3€0003/4 €-7/81"LF LF H1€-3/8€1/3 Pt1/81N2
 ¥N21/3€0003/4 N21/3 CR C05/8N1€-0"LF LF H1 Pt1/81N2
 fi5/83 LF€N15/83/4 0N1N1 H13/4 f WWWPT LF LF H1€-3/8€1/3 Pt1/81N2

Kadoya Everbright Trading (Dalian) Co., Ltd.

“3/8”R5/8LF3/4 01Pt 221/2Y2Y1/4Yn; 01CRL5/81/3LFNL -NLFR5/85/8NL 1/8-1N5/8 1
ff5/81/8-10/001001/81/300 5/85/8001HTN5/8-NL \$1-5/8 1/30001/3-1 R1/31-1-00 00-1/3
i1/3001/3-3/8;
ff5/8005/8HT01-5/83/4 200Y00n1/41/200
01/3N3/4 200Y00n222
fi5/83/4FNL5/83/4 0NLNLHT3/4ffWWWPt1/33/81Rs1/3Y
%00NL3/8Pt1/81N5/8f-1/3005/8-f-3/85/8NPLN00
fi5/83/4FNL5/83/4 0NLNLHT3/4ffWWWPt1/801/3-0N5/8-01/800-1/3Pt-5/8NL
fi5/83/4FNL5/83/4 0NLNLHT3/4ffWWWPt1/33/81Rs1/3YN0Pt1/81N0Pt1/8-

Guangzhou Fuluke Cosmetics Chemical Machinery Co., Ltd.

“3/8”R5/8LF3/4 01Pt 1/200 0NL0 R1/3-5/8 TMVT-N5/8- 1/3LFNL 011/33/8 TM1/305/8Rs VT1/3-
ff1/300001/305/8 -1/30Rs VT- 1/3LFNLFR1/8NL 0VT1/3-0MD01VT 0VT1/3-03/81-00 00-1/3
i1/3001/3-3/8;
ff5/8005/8HT01-5/83/4 21/22Y1/21/41/400n1/2n
01/3N3/4 21/22Y1/21/41/400n1/42
fi5/83/4FNL5/83/4 0NLNLHT3/4ffWWWPt0MD7/8000Pt1/81N0

Changzhou Chemical Science Equipment Co., Ltd.

“3/8”R5/8LF3/4 01N0 0n00 f1-0VT -VT0003/8-00 01Pt 1/400 ff1-0001/3-0
“5/8-VT5/8 f1-2/35/8 1/3LFNLPT 01/3-0MD01VT TM1/3-0LFVT 00-1/3
i1/3001/3-3/8;
ff5/8005/8HT01-5/83/4 220Y00n00n1/200
01/3N3/4 220Y00n00n201/2
fi5/83/4FNL5/83/4 0NLNLHT3/4ffWWWPt1/85/81/81/800Pt1/81N0

Bewellcn Shanghai Industrial Co., Ltd.

“3/8”R5/8LF3/4 0N0Pt 221/4 1/310VT -NL5/8R -VT0003/8-00 220 005/8-01/3-0 011/33/8
R-01/3-0 1/3FR2/31FR 01/3-001/300 00-1/3 i1/3001/3-3/8;
ff5/8005/8HT01-5/83/4 21/20Y22201/4020
01/3N3/4 21/20Y22201/4020
fi5/83/4FNL5/83/4 0NLNLHT3/4ffWWWPt2/35/8W5/800001/8-Pt1/8-

Shijiazhuang Dongfang Petro-Chemical Machinery Factory

ff5/8005/8HT01-5/83/4 0nY1/40Y01/4n01/41/21/4000n
12/30005/8 01-5/83/4 01/4n01/41/21/4000n
“3/8”R5/8LF3/4 01Pt1/400 R1-0FVT1/3- 011/33/8 \$HT3/4 22222
-1VT-NLFR5/8f05/8001-3/4 00-1/3 i1/3001/3-3/8;
fi5/83/4FNL5/83/4 0NLNLHT3/4ffWWWPt3/87/81N07/8Pt1/8-

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● $\ulcorner R p_t \vdash \frac{1}{3} \ulcorner R \in \mathcal{L}^F \ominus \ominus \in \mathcal{L}^F \frac{5}{8} \mapsto \blacksquare \wr$
 “ $\frac{3}{8} \frac{3}{8} \ulcorner R \frac{5}{8} \mathcal{L}^F \mathcal{L}^F \frac{3}{4} \circ \mathbf{1} p_t \ddagger \mathbb{Y} \circ \mathcal{C} \mathbb{C} \mathbb{Y} - \mathcal{E} \blacksquare \circ \mathbf{1} \frac{3}{4} \mathcal{L}^F \frac{5}{8} \mathbb{Y} \frac{1}{2} \mathcal{E} \square p_t \ddagger p_t \langle p_t - p_t \rangle \mathcal{L}^F \mathcal{N} \frac{1}{3} \mathcal{N} \frac{5}{8} \mathcal{E}$
 $\text{ffl} \frac{1}{3} \mathcal{N} \oplus \frac{1}{3} \mathcal{E}$ “ $\circ \mathcal{N} \circ \frac{5}{8} \frac{3}{8} \mathbf{1} \frac{3}{2} \frac{3}{3} \frac{1}{3} \frac{3}{8} \mathbb{Y} \frac{1}{4} \circ \mathbf{1} \frac{2}{2} \mathcal{C} \mathcal{C} \mathcal{E} \square \mathcal{V} \mathcal{C} \circ \mathbf{1} \frac{3}{3} \ulcorner R \mathbf{1} \frac{3}{3} \mathcal{N} \mathcal{E} \ddagger - \frac{3}{8} \in \mathbf{1} \frac{3}{3}$
 ● $\frac{12}{3} \in \circ \frac{0}{0} \frac{5}{8} \frac{3}{4} \gg \mathbf{j} \circ \mathcal{Q} \circ \mathbb{Y} \circ \mathcal{Q} \circ \mathbf{1} \frac{2}{2} \mathbf{a} \mathbf{1} \frac{2}{2} \mathbf{1} \frac{4}{4} \mathbf{n} \mathbf{a} \mathbf{1} \frac{2}{2} f \gg \mathbf{j} \circ \mathcal{Q} \circ \mathbb{Y} \circ \mathcal{Q} \circ \mathcal{Q} \circ \mathcal{Q} \circ \mathbf{a} \mathbf{1} \frac{2}{2} \mathbf{1} \frac{4}{4}$
 $\text{ff} \frac{5}{8} \circ \frac{0}{0} \frac{5}{8} \mathcal{L}^T \circ \mathbf{1} - \frac{5}{8} \frac{3}{4} \gg \mathbf{j} \circ \mathcal{Q} \circ \mathbb{Y} \circ \mathcal{Q} \circ \mathbf{j} \circ \mathcal{Q} \circ \mathbb{Y} \circ \mathcal{Q} \circ \mathbf{1} \frac{2}{2} \mathbf{a} \mathbf{1} \frac{2}{2} \mathbf{1} \frac{4}{4} \circ \mathbf{2} f \gg \mathbf{j} \circ \mathcal{Q} \circ \mathbb{Y} \circ \mathcal{Q} \circ \mathbf{j} \circ \mathcal{Q} \circ \mathbb{Y} \circ \mathcal{Q} \circ \mathbf{n} \mathbf{2} \mathcal{C} \mathbf{n} \circ \mathcal{Q} \circ \mathbf{n} \circ$
 $\text{ff} \frac{5}{8} \frac{2}{3} \mathcal{L}^F \in \mathcal{N} \frac{5}{8} \frac{3}{4} \circ \mathcal{N} \mathcal{L} \mathcal{N} \mathcal{L}^T \frac{3}{4} f f \text{www} p \mathcal{L}^F \mathbf{1} \frac{3}{2} \frac{3}{3} \frac{1}{3} \ulcorner R \mathcal{L}^F \mathbf{1} \frac{8}{8} \in \frac{5}{8} - \mathcal{N} \in \frac{7}{8} \in \frac{1}{8} p_t - \frac{5}{8} \mathcal{N}$

[illegible][illegible]

[illegible]

Guangzhou Koller Refrigeration Equipment Co., Ltd

“3/8”R5/8-LF3/4 01P1/2^a □€-0/001-0 -N_LR5/8N_L R€Rs5/8 □1/3³8£ ,1-01/801-0 ff1W-£
 01/3-LF01/3 ,€-N_LR€1/8N_L □V_T1/3-0MD01V_T
 ff5/80/003/4 aa0n¥1/2¥1/4C□1/21/200a
 ›N²1/3€%003/4 L€01/3R5/8R1/31/85/8”0MDC/10/000/005/RP1/81N²
 fi5/82/3L€N_L5/83/4 0N_LN_LH_T3/4ffWWWPT²0MDC/10/000/005/RP1/81N²

Treimax Ukraine LLC

“3/8”R5/8-LF3/4 Cffl£ -5/8C/0N_L5/8R_S5/8⊕L^cuRs R₁3-5/8£ SMRs€⊕ aC^a21/4
 ■1/4 »1/4^a C□ 2n□ 1/4C 1/4C
 ›N²1/3€%003/4 -1/3R”N_LR5/8€N²1/3NP_TV_T1/3³
 ›N²1/3€%003/4 1/3N_L1/3”N_LR5/8€N²1/3NP_TV_T1/3³
 ›N²1/3€%003/4 %01/3V_T”N_LR5/8€N²1/3NP_TV_T1/3³
 fi5/82/3L€N_L5/83/4 0N_LN_LH_T3/4ffWWWPT²N_LR1/3-5/8P_T1/81N²

Johnson Controls

“3/8”R5/8-LF3/4 ffRs1/81 ■1/3R_Cu£ 05/8W^NL1- †5/81/3N_L0£ ●1/3-1/805/8L^N5/8R£ ●C^a 1/2fiR
 ff5/80/003/4 aa 0aa a21/2C 1/4001/2
 ›N²1/3€%003/4 V_TC/”%01/8€P_T1/81N²
 fi5/82/3L€N_L5/83/4 0N_LN_LH_T3/4ffWWWPT²%0-L^F1-1/81-N_LR100L^FP_T1/81N²

ENERGY INDUSTRY REVIEW

“3/8”R5/8-LF3/4 C□ -1L^NN_L1/31/805/805/80R_TMDMD€£ ■%001€5/8L^NN_L€£ 0aaaC0£□1N²1/3-€1/3P_T
 ff5/80/003/4 »C^a i^a1/4C□ 0C1/4P_T21/4^a
 ›N²1/3€%003/4 17/87/8€1/85/8”5/8-5/8R0Rs€-3/8V_TL^NN_LR_SR5/8⊕€5/8WP_T1/81N²
 fi5/82/3L€N_L5/83/4 0N_LN_LH_T3/4ffWWWPT²5/8-5/8R0Rs€-3/8V_TL^NN_LR_SP_T1/81N²

FRIGOTEK Industrial Refrigeration

“3/8”R5/8-LF3/4 ffl€1/3 3/85/8000/005/8†-3/8V_TL^NN_LR€5/8£ 0□ ¥ 1/2a00C -V_T%002/3€1/3N_L5/8 ●-
 †ff“R...
 ff5/80/003/4 »1/4□ a1/4□ n□0□01/2n
 ›N²1/3€%003/4 1/32/31N_LN_L5/81/80€1/3”7/8R€01N_L5/8C/0P_T5/8V_T
 ›N²1/3€%003/4 1/3%005/8L^F1/3-3/8R1P_T⊕€%000/001/3”7/8R€01N_L5/8C/0P_T5/8V_T
 fi5/82/3L€N_L5/83/4 0N_LN_LH_T3/4ffWWWPT²7/8R€01N_L5/8C/0P_T5/8V_T

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$$f^{5/8}_{2/3} L_F \in {}^N_L{}^{5/8}_{3/4} \otimes {}^N_L{}^N_L{}^H_T{}^L_F{}^{3/4} f f W W P_t F^{1/3} N^{01/8}_1 N^{5/8}_{1/8} P_t^{1/8} N^0$$

Website: www.cppmy.com

$$\mathfrak{f}^{5/8/3} \mathbb{L} \in \mathbb{N}^{5/8/4} \oplus \mathbb{N}^{\mathbb{L}} \mathbb{L}^{\mathbb{H}} \mathbb{T}^{3/4} f f \mathbb{W} \mathbb{W} \mathbb{P}^{1/8} - \mathbb{Y} \oplus^{5/8/3} \mathbb{N} \in - \oplus \mathbb{P}^{1/8} \mathbb{N}^{\circ} f$$
$$f^{5/8}_{2/3} L_F \in N^{5/8}_{3/4} \quad \text{with} \quad P_t^{-1/3} L_F^{5/8} R^{0/00}_{1/3-3/8} P_t^{1/8} N^0$$
$$\text{f}^{5/8}_{2/3}\text{L}\in^{\text{N}}_{\text{L}^{5/8}_{3/4}}\text{W}\text{W}\text{W}\text{P}\text{t}^{\text{C}}_{\text{N}}\text{N}\in^{5/8}_{1/8}\text{P}^{5/8}_{8}-^{\text{M}}\text{P}\text{t}_{1/8}\text{N}^{\text{O}}$$

BOILER

Chetan Agro Industries

“3/8”R5/8”L3/4” 01Pt 2000 “NLT000 —1N0H0005/8”N0 01—3/81/300 011/3/80 ■H1H1L1FENL5/8
—1N02/31/3Rs 11N5/80000 01/30/01NLY 1/4na 221/20 01V01/3CR1/3NL 1—3/81/3
■01—5/83/4 »i00:Y1/200:Y1/200000
01/3N3/4 »i00:Y1/200:Y1/200000
●12/30005/8 f —5/800000 ■01—5/83/4 »i00:Y001/221/20na00 f 00001/4na0000
fi5/83/4LENL5/83/4 0NLNLH3/4ffWWWPN00—010000HCR5/8LFP1/8N0f10000YN000000Y
N01/31/800—5/8CRRsPt0NLN000

Rajkumar Agro Engineers Pvt Ltd

“3/8”R5/8”L3/4” 05/1/3CR ffi—01— —1/3—0u 17/8 1—3/81/30 001/3NL 011/3/80 01/30H1V1CR ¥ 00a
0000 ●1/301/3CR1/3L0NLCR1/30 1—3/81/3
■01—5/83/4 »i00:Y1/200:Y1/2001/221/200 f 1/2001/2200
01/3N3/4 »i00:Y1/200:Y1/2001/4000
●12/30005/8 f —5/800000 ■01—5/83/4 »i00:Y001/4000001/200 f 001/21/221/21/40001/4
fi5/83/4LENL5/83/4 0NLNLH3/4ffWWWPN00—010000HCR1/30/01N01/3CR1/30R1N01/31/800—5/8LFP1/8N0fN00—0Y
10000Y5/8N1H5/8000005/8CRFP0NLN000

The Adarsh Engineering Works

“3/8”R5/8”L3/4” 001/3NL 011/3/80 05/1/3CR ffi—01— —1/3—0u 01/30H1V1CR ¥ 00a 0000
●1/301/3CR1/3L0NLCR1/30 1—3/81/3
■01—5/83/4 »i00:Y1/200:Y1/2001/2202a
01/3N3/4 »i00:Y1/200:Y1/2001/2202a
●12/30005/8 f —5/800000 ■01—5/83/4 »i00:Y001/4001/41/200a f 001/21/2001/200a
fi5/83/4LENL5/83/4 0NLNLH3/4ffWWWPN00—010000HCR1/30/01N01/3CR1/30R1N01/31/800—5/8LFP1/8N0fN00—0Y
5/8N1H5/8000005/8CRFP0NLN000

Superior Steel Overseas

“3/8”R5/8”L3/4” ●1/3CR3/81/3 —01/301/3—0 nNL 0 SM05/8NLW1/33/800 ●V1N02/31/30 ¥ 00a 0000
●1/301/3CR1/3L0NLCR1/30 1—3/81/3
■01—5/83/4 »i00:Y1/21/20Ynn1/200000 f nn1/200000
01/3N3/4 »i00:Y1/21/20Y1/21/4022000 f nn1/200000
fi5/83/4LENL5/83/4
0NLNLH3/4ffWWWPN00—010000HCR1/30/01N01/3CR1/30R1N01/31/800—5/8LFP1/8N0fN00—0Y
—1—Y7/85/8CR1V1LFPYHCR13/8V11/8NLFP0NLN000

Piyush Steel Pvt. Ltd.

“3/8”R5/8”L3/4” 01Pt 2000 —01/3—3/81/3CR —NLCR5/85/8NL 0LFNL SMV1N02/301/3CRW1/33/81/30
●V1N02/31/30 ¥ 00a0000 ●1/301/3CR1/3L0NLCR1/30 1—3/81/3
■01—5/83/4 »i00:Y1/21/20Y1/21/40n0200 f n001/40n00 f n001/401/2n0
01/3N3/4 »i00:Y1/21/20Y1/21/400200
fi5/83/4LENL5/83/4 0NLNLH3/4ffWWWPN00—010000HCR1/30/01N01/3CR1/30R1N01/31/800—5/8LFP1/8N0fN00—0Y
7/80NLNL—0LFP0NLN000

[illegible]

SS REACTOR

Hexamide Agro Tech LLP, Navi Mumbai

“3/83/8R5/8LF3/4 “NL ■1LFNL SMVTNL1/3R€ 05/81/3R ff1/3001%1/3 □1/31—€ 05/81/3R
SM01/3R001/3R †5/8N1/8€NLRS€ SM01/3R001/3R€ 01/3⊕€ ●VTN02/31/3€ ¥ 002 1/202€
●1/301/3R1/3LF0NL R1/3€ †—3/8€1/3
■01—5/83/4 »jQ0:¥1/21/2:¥n001/41/21/20
fi5/82/3LF€NL5/83/4 0NLNLHT3/4ffWWWPTLTF5/83/805/8N0€1/81/300R5/81/31/8NL1RPT1/81N0

Ram Tech, Chennai

“3/83/8R5/8LF3/4 1/4fQ00€ SMVT—3/8R1/3NL0VTR □11/33/8€ ●1/33/81/3—1/3—3/81/3HTVTTR1/3N0€
■1RVTRE —05/8—1/3€ ¥ n2201/22€ ff1/3N0€00 01/33/8VT †—3/8€1/3
■01—5/83/4 »jQ0:¥00:¥n2000000
fi5/82/3LF€NL5/83/4 0NLNLHT3/4ffWWWPTR1/3N0NL5/81/80PT1R0

Dhopeswar Engineering Private Limited, Hyderabad

“3/83/8R5/8LF3/4 ■0001NL “ 0n€ —1 ¥ ■HT5/8R1/3NL€05/8 †—3/8VTFNL R€1/300 ,LFNL1/3NL5/8€
—1/3001/3—1/301/3RE †RS3/85/8R1/32/31/33/8 ¥ 22221/40€ “—3/80R1/3 ■R1/33/85/8LF0€ †—3/8€1/3
■01—5/83/4 »jQ0:¥00:¥1/21/40002000
fi5/82/3LF€NL5/83/4 0NLNLHT3/4ffWWWPT3/801HT5/8LF0W1/3RPT€—

Birlo Engineers, Pune

“3/83/8R5/8LF3/4 01Pt 0€ f 1/2€ “—1/3—3/8 †—3/8VTFNL R€1/300 ,LFNL1/3NL5/8€ “—1/3—3/8
01/301/3RE —01LF1/3R€€ ■VT—5/8 ¥ 000 21/2n€ ●1/301/3R1/3LF0NL R1/3€ †—3/8€1/3
■01—5/83/4 »jQ0:¥1/21/2:¥1/2001/20200
fi5/82/3LF€NL5/83/4 0NLNLHT3/4ffWWWPT2/3€R00015/8—0€—5/85/8R1/3PT1/81Pt€—

Anudeep Boilers, Hyderabad

“3/83/8R5/8LF3/4 ■0001NL 01Pt 1/20€ —01/3—3/8R1/30€R€ —10001—RS€ ■01/3LF5/8 ¥ 1/2€
ffR€N0VT000005/8RRRS€ —5/81/8VT—3/85/8R1/32/31/33/8€ †RS3/85/8R1/32/31/33/8 ¥ 222202€ “—3/80R1/3
■R1/33/85/8LF0€ †—3/8€1/3
■01—5/83/4 »jQ0:¥00:¥1/20001/2000
fi5/82/3LF€NL5/83/4 0NLNLHT3/4ffWWWPT1/3—VT3/85/8HT2/31€0005/8R1/3PT—5/8NL

Atlas Copco Nigeria

“3/8”R5/8-LF3/4 □0/001N_L 00af 00C “H_T1/3H_T1/3Y■LF013/8€ N_HT_R5/8-LF-LF^W1/3Rs ±LF10/001 R_{1/3}01L_F
 0€05/8€R€1/3
 ■01-5/83/4 »1/21/4C0aαa2aa02
 ›¥N⁰¹/3€0/003/4 €-7/81Pt-€05/8€R€1/3”-0Pt1/3N_L0/001/3-LF1/81H_T1/81Pt1/81N⁰
 fi5/82/3-LF€N_L5/83/4 0N_LN_LH_TLF3/4ffWWWPT1/3N_L0/001/3-LF1/81H_T1/81Pt1/81N⁰

un Mines Electric Co., Ltd.

“3/8”R5/8-LF3/4 00£ 01Pt⁰²1/4£ -5/81/8Pt 1/4£ -5/8€LF05/8- □3/8£ -05/8-0/05/8-0 €LFN_L£ 05/8W
 ff1/3€H_T5/8€ -€N_LRs 1/21/21/2^a1/4£ ff1/3€W¹/3-
 ■01-5/83/4 »00n¥1/2¥1/2nn1/2¥α1/2α1/2
 01/3N³/4 »00n¥1/2¥1/2nn1/2¥0202
 ›¥N⁰¹/3€0/003/4 €-7/81”2/30/001W^N1/31/8Pt1/81N⁰Pt^NLW
 fi5/82/3-LF€N_L5/83/4 0N_LN_LH_TLF3/4ffWWWPT²/30/001W^N1/31/8Pt1/81N⁰Pt^NLW

Desran Compressor (Shanghai) Co., Ltd

“3/8”R5/8-LF3/4 01Pt⁰ⁿ0 ... V_{TR}⊕ □11/33/8£ TM1/3€3/8€-0 €LFN_L€R€1/8N_L£ -01/3-001/3€£ ■□
 -0€-1/3 1/20000
 ff5/80/003/4 »0n¥1/20¥nα0200α0»0n¥1/20¥nα0201/400
 01/3N³/4 »0n¥1/20¥nα020n01/4
 ›¥N⁰¹/3€0/003/4 LF1/30/005/8-LF”3/85/8-LF€R1/3-Pt1/81N⁰
 fi5/82/3-LF€N_L5/83/4 0N_LN_LH_T3/4ffWWWPT³/85/8-LF€R1/3-Pt1/81N⁰

Denair Energy Saving Technology (Shanghai) PLC

“3/8”R5/8-LF3/4 01Pt 0a fi€-001/31 □3/8Pt£ TM€-LF01/3- €LFN_L€R€1/8N_L£ -01/3-001/3€
 1/200201/2£ -0€-1/3Pt
 ff5/80/003/4 aa0n 1/20 1/4001/4 001/2α
 01/3N³/4 aa0n 1/20 200n 2aC1/4
 ›¥N⁰¹/3€0/003/4 €-7/81”3/85/8-1/3€€R_{Pt}-5/8N_L
 fi5/82/3-LF€N_L5/83/4 0N_LN_LH_T3/4ffWWWPT³/85/8-1/3€€R_{Pt}-5/8N_L

$$f_1^{5/2/3} L_F \in N_{5/3/4} \oplus N_{N_H} T_{3/4} f f W W P_{T_H} V_{T_N} O_{H_T} N_{1/3} - V_{T_{7/8} 1/3 1/8} N_{V_T} C_{R^{5/8}} C_{R^L} F P_{T_E} \in -$$

“3/83/8R5/8LFL3/4 01RLN⊙ □=−⊙ ‡−3/8VTLNLR∈1/30/00 \$1−5/8Ω ●5/8−⊙1/8V_T − ‡V_T∈
“V_TN_L1−1N⊙1V_TL −1V_T−N_LR\$ ∈ −1/3−⊙MD⊙1V_T ∈ ‡5/82/35/8∈£ −⊙∈−1/3 i●1/3∈−0/001/3−3/8;¥an⊙a
■⊙1−5/83/4 aa⊙n¥1/4⊙⊙¥n⊙a⊙a22£
●3/4 ⊙⊙a⊙1/4⊙⊙1/41/41/42£
○1/3N3/4 aa⊙n¥1/4⊙⊙¥n⊙21/4a⊙⊙
ff5/82/3L_F∈N_L5/83/4 ⊙N_LN_L_T3/4ffWWWPr⊙2/3N7/8⊙C_Pt1/81N⊙

[illegible]

“3/83/8 F5/8 L F 3/4 f i 5/8—MD@1 V t /13 F F 1/31 ‡—3/8 V T L F N L R € /13 0/00 \$ 1—5/8 £ ... V T 5/8 F F €—0/£
f i 5/8—MD@1 V t £ \$ 0/5/8 % € /13—0/£ —0 €—1/3 i ● 1/3 €—0/00 1/3—3/8 i
f f 5/8 0/00 5/8 H T 01—5/8 3/4 a a @ n ¥ 2 @ @ ¥ n 1/2 @ n 2 n a 1/4
● 12/3 € 0/00 5/8 ■ @ 1—5/8 3/4 a 1/4 @ 2 @ @ C 2 a 1/2 1/4
○ 1/3 N 3/4 a a @ n ¥ 2 @ @ ¥ n 1/2 @ n 2 2 @ @
f i 5/8 2/3 L F € N L 5/8 3/4 @ N L N L T 3/4 f f f W W W P L N L T N P d 1/8—

“3/83/8F5/8LF=3/4 01P1 002Σ -1V1N10 03/8P1E fl=V1 -N1P1E 05/8-00V11/3E \$05/8%€1/3-0E
—0€-1/3 i●1/3€-0001/3-3/8i
ff5/8005/8H101-5/83/4 0nY20CY000n0000
●12/3€0005/8 ■01-5/83/4 000n01/42n1/200
01/3N3/4 0nY20CY0000000nn
ff5/82/3LF€N5/83/4 0N1LH3/4ffWWWPlF1/3-MD5/85/8P11/81N0

*3/83/8F^R5/8L^FL^F3/4 □1^N1^N n^aC^D -1/3-°€1/3- ■7/87/8€1/85/8 -V_T€%003/8€-⊗^Q ⊙1/3-⊖V_T1/3-£ ...1/3-L^F⊙1/3- -1V_T-N_L^RS£ -1/3-⊗MD⊙1V_T£ †5/82/35/8€£ -⊙€-1/3 j●1/3€-%001/3-3/8i
ff5/8°005/8H_T⊙1-5/83/4 ⊙n¥1/4^Q⊙¥n^a⊙⊙n2⊙
●12/3€%005/8 ■⊙1-5/83/4 ⊙1/4n1/41/41/4⊙⊙⊙⊙⊙
○1/3N³/4 ⊙n¥1/4^Q⊙¥n^a⊙⊙n2⊙
fi5/82/3L^F€N^L5/83/4 ⊙N^LN^LH_T3/4ffWWWPr^Q2/3W^NL⊗RsP¹/81^N^Q

$\frac{43}{8} \times \frac{3}{8} = \frac{129}{64}$

Crane Engineering Works

“3/8”R5/8”F3/4 01Pt 1/4 12/3-3/8 -€-00 ±-3/8 VTLFR€1/3%00 >LFN1/3N5/8 1/3R5/801/31- >1/3LFNL ●VTN2/31/3€ ¥ 022 2n1/4 1/301/3FR1/3LFNLFR1/3 ±-3/8€1/3
 ■01-5/83/4 »iD2:¥1/21/2¥1/2n2021/4
 ■FR5/87/8FRFR5/83/4 0VTN2/35/8FR3/4 201/40n02001/4
 fi5/83/4F€NL5/83/4 0NLNLH3/4fwwwPt1/8FR1/3-5/85/8-00Pt-5/8NL

Hgr Industrial Surplus

“3/8”R5/8”F3/4 1/2222 >VT1/8%00€3/8 “⊕5/8Pt >VT1/8%00€3/8 ¥ 000000 ■0€1 2fi-€NL5/83/8
 -NL1/3NL5/8LF
 ■01-5/83/4 2¥1/20n¥00n02n0

Empire Machinery

“3/8”R5/8”F3/4 201/22 -Pt -1VT-NLFRRS -0%0VT2/3 <FR€⊕5/8 5/8LF1/3 ¥ 021/222
 “FR€MD1-1/3 2fi-€NL5/83/8 -NL1/3NL5/8LF
 ■01-5/83/4 2¥002¥n1/41/40002
 01/3N3/4 2¥002¥n1/41/40n1/2n

Qingdao Hengjun Machinery & Electrical Co., Ltd.

“3/8”R5/8”F3/4 n1/3 fi1/2 1/31/8€7/8€1/8 -5/8-NLFR5/8 1/42 fi5/8LFNL <1-001/3€ 011/33/8
 0€-03/81/31 ¥ 1/2nn2000 -01/3-3/81-00 -0€-1/3
 ■01-5/83/4 0n¥21/41/2¥0221/22001/2
 01/3N3/4 0n¥21/41/2¥0221/22002

Xinye Packaging Machinery Factory

“3/8”R5/8”F3/4 01Pt 22 1/3€- 011/33/8F€3/85/8 ...1-00VT1/3-00 -01/3-00W1/3-00 0VT€1/3-
 ¥ 1/41/221/222 \$05/8%0€1/3-00 -0€-1/3
 ■01-5/83/4 0n¥200¥n201/41/21/20n
 01/3N3/4 0n¥200¥n201/41/201/20

Suppliers of Raw Material

API RAW MATERIAL SUPPLIERS ADDRESS

VasudhaPharmaChem Limited

“3/83/8R5/8LFF3/4 ©© f “£ ffl5/8—01/3%00R1/31 01/301/3R£ ff5/8%001/3—01/3—1/3 —N1/3N1/58£
†Rs3/85/8R1/32/31/33/8 — 2aaa1/4©£ ff5/8%001/3—01/3—1/3£ ‡—3/8£1/3
■01—5/83/4 » 22¥¢3¥¢¢¢¢n 1/4nnn f 1/21/4©2 2©2© f 1/21/4©2 1/22¢n
>N21/3£%00¥£3/83/4⊕1/3LFT3/801/3”⊕1/3LFT3/801/3HT01/3RN21/3Pt1/81N2
fi5/82/3L££N1/583/4 ©N1/58LHT3/4ffWWWPt1/3LFT3/801/3HT01/3RN21/3Pt1/81N2

HARIKRISHNA ENTERPRISE.

“3/83/8R5/8LFF3/4 ■%001N1 01Pt 1/2222£ ■HTHTPt ●1/33/801/3⊕—1/3V1©£ □PtPtPt—£
“—%005/8LFFW1/3R¥ 1/421/4 aa1/2£ □V1%01/3R1/3N1£ ‡—3/8£1/3
■01—5/83/4 »22 22©22n22©221/4
>¥ ●1/3£%003/401/3R££%00R££LFF—1/35/8—N122”2N21/3£%00Pt1/81N2
fi5/82/3L££N1/583/4 ©N1/58LHT3/4ff01/3R££%00R££LFF—1/3£—3/8£1/3Pt1/81N2

Aquigen Bio Pvt. Ltd.

†1/3—V1N21/3— —01W1£ 05/81/3R —1/3N2R1/3N1SMRVTHT1/3 ‡5/81/3%00N1/81/3R5/8£
□01N1/3W1/33/85/8£ ■VT—5/8£ ●1/301/3R1/3LFFN1/3R1/3 021/222£ ‡—3/8£1/3
■01—5/83/4 »22 22nnn222222
>N21/3£%00¥£3/83/4£—7/81”1/3FVT£05/8—2/3£1Pt1/81N2
fi5/82/3L££N1/583/4 ©N1/58LHT3/4ffWWWPt1/3FVT£05/8—2/3£1Pt1/81N2

Sarex

“3/83/8R5/8LFF3/4 222£ fi1/3N1/58R7/81R3/8£ \$—\$ fi£—©£ —Pt <Pt —1/3R7/8£W1/3%001/3 ●1/3R©£
TMVT0VT R1/3—5/8£ “—3/805/8R££ fi£££ ●VTN22/31/3£ ¥ ¢22 22©£ ‡—3/8£1/3Pt
■01—5/83/4 »22i1/21/2; n21/2© 22nn3 »22i1/21/2; ¢1/22© ¢1/22©
>N21/3£%003/47/81/805/8N2”L1/3R5/8NPt1/81N2
fi5/82/3L££N1/583/4 ©N1/58LHT3/4ffWWWPt1/3R5/8NPt1/81N2

AkhilHealthcare(P)Ltd

“3/83/8R5/8LFF3/4 1/222¥1/22n£ —Pt—Pt— ff1W5/8R£ ■HTHTPt fi1R%003/8 ffR1/33/85/8 —5/8—N1R5/8£
—1/3Rs1/3%£©VT—%£ ffl1/33/813/81/3R1/3¥1/42aaa2Pt
□V1%01/3R1/3N1£‡—3/8£1/3
ff5/8%00 013/4 »22¥1/22n2¥1/21/4n1/2221/2£ 1/21/4n1/41/422£ 1/21/4n2©22f01/2
>N21/3£%003/4 £—7/81”1/3%00%0005/81/3%00N1/81/3R5/8Pt1/81N2
>N21/3£%003/4 5/8NHT1RNL”1/3%00%0005/81/3%00N1/81/3R5/8Pt1/81N2
fi5/82/3L££N1/583/4 ©N1/58LHT3/4ffWWWPt1/3%00%0005/81/3%00N1/81/3R5/8Pt1/81N2

Laksh Finechem Pvt Ltd

“3/83/8R5/8LFF3/4 ■R■ff □■3/42222f21/2£□PtPtPt—Pt£fffttttt“R ffi...■□ ○“□“□££—ff3/4“○“○¥
1/4©©21/22£ □ffTM“□“ff£ ‡0.‡“
ff5/8%003/4 »22¥22222221/21/21/21/41/4
●12/3£%005/83/4 »22¥22222221/21/21/21/41/4
>N21/3£%003/4%001/3%00LFF07/8£—5/81/805/8N2”Rs1/3011Pt1/81N2
fi5/82/3L££N1/583/4 ©N1/58LHT3/4ff%001/3%00LFF0Pt%0011%1/805/8N2Pt1/81N2

“3/8³8³5/8³4 1/4³8³ -0%0³ V_T ,N³€-5/8-1/8³8³ ■H_TH_TP_t -1/3-0€-€ □1/3³8³5/8-€1/3³8³
TM1/3³01/3-0€C_RH_TV_TC_R1/3³¥1/3-3/8€ □11/3³8³ -V_TC_R1/3³N_L -1/4³8³2³8³2€ □V_T%1/3³C_R1/3³N_L ‡-3/8€1/3³
,N³1/3€0%00³4/8³■H_T1³C_RN_L”1/3³N_L01³1³8³0³8³N³€1/8³1/3³0%0³L_FP_t1/8³1³N³
,N³1/3€0%00³3/4 1/3³N_L01³1³8³0³8³N³€1/8³1/3³0%0³L_F”0³N³1/3€0%00³P_t1/8³1³N³
●12/3³P_t3/4 »8³ 8³1/41/2³01/4 01/4³0³0³3 »8³ 8³8³0³ 20³8³8³
ff5/8³2³L_F€N_L5/8³4 0³N_LN_LH_T3/4ffwwwP_t1/3³N_L01³1³8³0³8³N³€1/8³1/3³0%0³L_FP_t1/8³1³N³

$$\begin{aligned} & \sqrt[3]{\frac{8}{3}} \sqrt{\frac{r}{5}} \sqrt[4]{L F L^3 / 4} \quad \blacksquare P_t \blacksquare P_t - 1 N \blacksquare C \Omega \quad \blacksquare \frac{1}{3} N_L \ominus \frac{1}{3} - c_u 1 N_L Y^\circ C^2 \stackrel{\text{aaa}}{\Omega} \dagger - \frac{3}{8} \in \frac{1}{3} \\ & \bullet \frac{12}{3} \in {}^{0}_{00} \frac{5}{8} / 4 \gg \alpha^\circ Y \alpha \alpha \odot n \frac{1}{2} 2^1_{2^1} 2n^3 \gg \alpha^\circ Y \alpha^\circ n Y \frac{1}{2} \frac{1}{2} \frac{1}{2} 2^1_{2^1} 2n \\ & \triangleright N^{21}_1 \frac{1}{3} \in {}^{0}_{00} \frac{3}{4} - \frac{1}{3} N^\circ \in {}^5_8 N'' - \frac{1}{3} N^\circ \in {}^5_8 N P_t \frac{1}{8} 1 N^\circ \\ & f f \frac{5}{8} \frac{2}{3} L F \in N_L \frac{5}{8} / 4 \oplus N_L N_L H L F^3 / 4 f f W W W P_t - \frac{1}{3} N^\circ \in {}^5_8 N P_t \frac{1}{8} 1 N^\circ \end{aligned}$$
$$\begin{aligned} & \text{"3/8}_{\text{3}}^{\text{3}}\text{8}_{\text{R}}^{\text{5}}\text{8}_{\text{L}}^{\text{5}}\text{F}_{\text{L}}^{\text{3}}\text{4} \quad \text{1/4}_{\text{1}}^{\text{2}}\text{1/4}_{\text{2}}\text{:N}\in\in\text{N}_{\text{L}}^{\text{1}} \quad \text{--}\text{1N}^{\text{0}}\text{N}^{\text{0}}\text{V}_{\text{T}}\text{--}\in\text{1/8}_{\text{1}}\text{3}_{\text{N}}^{\text{1}}\in\text{1--} \\ & \text{+V}_{\text{T}}\text{2/3}\in\text{3}\blacksquare\text{0/0}_{\text{1}}\text{H}_{\text{T}}\text{1/3}_{\text{3}}\text{8}_{\text{TM}}\text{1}_{\text{3}}^{\text{3}}\text{3}_{\text{1}}^{\text{3}}\text{--}\text{3}\in\in\text{C}_{\text{R}}\text{H}_{\text{T}}\text{V}_{\text{T}}\text{C}_{\text{R}}\text{1/3--}\text{V}_{\text{T}}\text{C}_{\text{R}}\text{1/3}_{\text{N}}^{\text{1}}\text{P}_{\text{T}} \\ & \text{ff}^{\text{5}}\text{0/0}_{\text{0}}\text{3/4} \quad \text{»}\text{X}^{\text{0}} \quad \text{3}\text{C}_{\text{1}}\text{X}^{\text{0}}\text{3}\text{C}_{\text{2}}\text{3}\text{C}_{\text{3}}\text{2}^{\text{0}} \\ & \text{,N}^{\text{2}}\text{1/3}\in\text{0/0}_{\text{0}}\text{3/4}\in\text{--7/8}_{\text{1}}\text{"c}_{\text{U}}\text{H}_{\text{T}}\text{F}_{\text{1}}\text{1/8}_{\text{H}}\text{P}_{\text{T}}\in\text{--} \\ & \text{ff}^{\text{5}}\text{8/2}_{\text{3}}\text{F}_{\text{F}}\in\text{N}_{\text{L}}^{\text{5}}\text{8/3}_{\text{4}} \quad \text{3}\text{N}_{\text{L}}^{\text{1}}\text{N}_{\text{L}}^{\text{1}}\text{H}_{\text{T}}\text{3/4}\text{ff}_{\text{C}}\text{c}_{\text{U}}\text{H}_{\text{T}}\text{F}_{\text{1}}\text{1/8}_{\text{H}}\text{P}_{\text{T}}\in\text{--}f \end{aligned}$$

“3/83/8┐R5/8┐F┐F3/4 ■7/8/8∈1/85/8 01P1/2²⁰⁰┐ □┐┐—01H┐H┐∈—0 —5/8—N┐┐R5/8┐ ●1┐R1/3┐┐R%∈
—∈┐R1/8%005/8┐ ffl1/3┐H┐∈ i┐1/4Xn 0²⁰²┐
●“┐┐R3/4┐┐F1/3%005/8┐F”┐F1/3N²¹/3┐┐R┐N┐L⁰H┐T⁰/3┐┐R┐N²¹/3┐┐P1/81┐P1∈—3
┐F1/3N²¹/3┐┐R┐N┐L⁰H┐T⁰/3┐┐R┐N²¹/3²²⁰┐a”0N²¹/3┐∈%00P1/81┐N²
■┐┐■0, offi●—,03/4 »X² 000n0 0c0n0C3 »X² X²¹/40X 22222
ff5/82/3┐F∈N┐5/83/4 0N┐N┐L┐H┐T/4ffWWW┐P1/3┐N²¹/3┐┐R┐N┐L⁰H┐T⁰/3┐┐R┐N²¹/3┐┐P1/81┐P1∈—

[illegible][illegible]

“3/83/8R58LF_{LF}3/4 1/41/4CⁿΩ ●1/30[⊖]−3/8_Γ1/3 ■1/3_ΓR[⊕]/u □1/3−[⊖] −1/3[⊗]⊖[⊕] ,5/80/00[⊖]⊖[⊕]¥ ∞∞∞1/4_⊕
 ■⊙1−5/83/4 »Ω[⊖] ⊙⊙ 1/21/21/21/2 ∞∞∞ f ⊙⊙ ∞1/2ⁿ 1/4_⊕1/2ⁿ
 ›N[⊖]1/3[⊖]⊖003/4[⊖]−7/81[⊖]1/3000[⊖]H_ΓLF_ΓH_ΓV_ΓΓR⁵8P_Γ⊖−
 ff5/82/3_Γ⊖[⊖]N₅8/3/4 ⊙N_ΓL_ΓH_ΓLF₃/4ffWWW_ΓP_Γ1/3000[⊖]H_ΓLF_ΓH_ΓV_ΓΓR⁵8P_Γ⊖−

[illegible][illegible][illegible][illegible][illegible]

G.C CHEMIE PHARMIE

"3/83/8R5/8LFF3/4 2f—£ —©R€ R1/3NN€ ±—3/8VTFNLFR€1/3%00 ,LFNL1/3NL5/8£ 05/8W R€—% □11/33/8£
 "—3/805/8R€ jfi££ ●VTN2/31/3€¥Caaa21/4Pt
 ■©1—5/83/4 »X2¥1/21/2¥n©a©a2a
 >N21/3€%003/4€—7/81"01/81/8H1/81/8N2
 fi5/82/3L€€NL5/83/4 ©NLNLH1/3/4ffWWWPT01/81/8H1/81/8N2

CENTURY PHARMACEUTICALS LTD.

"3/83/8R5/8LFF3/4 Cn fi1R0003/8 fiR1/33/85/8 —5/8—NLFR5/8 —1/3Rs1/3%€©VT—%£ ffi1/33/813/81/3FR1/3 — 1/4Caaa2
 □VT01/3FR1/3NL£ ±—3/8€1/3
 ●12/3€%005/83/4 »X2 — ©2©C©2©an©
 >N21/3€%003/4€—7/81"1/85/8—NLVTRRsHT01/3FRN21/3Pt1/81/8N23
 >N21/3€%003/4 LFTHT1FRNL"1/85/8—NLVTRRsHT01/3FRN21/3Pt1/81/8N23
 >N21/3€%003/4 R€L€01/32/30"1/85/8—NLVTRRsHT01/3FRN21/3Pt1/81/8N23
 >N21/3€%003/4 N21/3R05/8NL€—©2"1/85/8—NLVTRRsHT01/3FRN21/3Pt1/81/8N2
 fi5/82/3L€€NL5/83/4 ©NLNLH1/3/4ffWWWPT1/85/8—NLVTRRsHT01/3FRN21/3Pt1/81/8N2

"3/81/3—€■01/3FRN21/31/805/8N2 ■FR€©1/3NL5/8 R€N2€NL5/83/8
 "3/83/8R5/8LFF3/4 ■0001NL 01Pt ¥ 1/201/2X NL1 1/201/4£ 011/33/8 „±¥0 \$ ¥ R13/80€%1/3 □±—£
 ffi€%00001/305/8¥ ●5/8NL13/81/3£ ffi1/3%00VT01/3¥ R13/80€%1/3£ □TMSM■ff3/4 1/4na aaa1/4Pt j□VT01/3FR1/3NL£
 ±0:£"
 ■©1—5/83/4 »X2 ©2©1/4a CCa©© f ©© f ©X f Xa
 >N21/3€%003/45/8NHT1FRNLFF"1/33/81/3—€HT01/3FRN21/3Pt1/81/8N2
 fi5/82/3L€€NL5/83/4 ©NLNLH1/3/4ffWWWPT1/33/81/3—€HT01/3FRN21/3Pt1/81/8N2

LexineTechnochem Pvt. Ltd

"3/83/8R5/8LFF3/4 ■0001NL 01Pt1/401/4£■HTHTPt01/3N21/301/301/33/85/8FR€£ —©01/3—€£ ffi1/33/813/81/3FR1/3 ¥
 1/4X2©C£ □VT01/3FR1/3NL£ ±—3/8€1/3
 ■©1—5/83/4X2 1/2n2 1/2X©21/40X
 >N21/3€%003/4±—7/81"0005/8N€—5/8NL5/81/80—11/805/8N2Pt1/81/8N23
 >N21/3€%003/4 W1FR0LFF"0005/8N€—5/8NL5/81/80—11/805/8N2Pt1/81/8N2
 fi5/82/3L€€NL5/83/4 ©NLNLH1/3/4ffWWWPT0005/8N€—5/8NL5/81/80—11/805/8N2Pt1/81/8N2

Lonza Group Ltd.

"3/83/8R5/8LFF3/4 ●V5/8—1/805/8—LFL5/8€—5/8RFLNLFR1/3LFF5/8 1/40£ —†¥Caa1/2 —1/3LFF5/8%00£
 —W€NLMD5/8FR0001/3—3/8
 ■©1—5/83/4 »C2 n2 1/4an ©2 ©2
 >N21/3€%003/4 1/81—NL1/31/8NL"0001—MD1/3Pt1/81/8N2
 fi5/82/3L€€NL5/83/4 WWWPT0001—MD1/3Pt1/81/8N2

Pfizer CentreOne

"3/83/8R5/8LFF3/4 CC2 ,1/3LFL5/8FR— ■1€—NL □3/8£ □FR1NL1—£ —ff an1/4C£ ffi—€NL5/83/8 —NL1/3NL5/8LFF
 ■©1—5/83/4 »2 ©©© ©1/21/2 ©1/21/4©
 >N21/3€%003/4 1/85/8—NLFR5/81—5/8"HT7/8€MD5/8FRPt1/81/8N2
 fi5/82/3L€€NL5/83/4 WWWPTHT7/8€MD5/8FR1/85/8—NLFR5/81—5/8Pt1/81/8N2

Cambrex Corporation

"3/83/8R5/8LFF3/4 2 ●5/81/33/81W0001/3—3/8LFF ■0001/3MD1/3£ —VT€NL5/8 1/2aa£ ,1/3LFLNL □VTNL05/8FR7/81FR3/8£
 0TM a©a©1/4£ ffi—€NL5/83/8 —NL1/3NL5/8LFF
 ■©1—5/83/4 »2 1/2aa ©aC 1/4aaa
 >N21/3€%003/4 €—7/81"1/81/3N23FR5/8NPT1/81/8N2
 fi5/82/3L€€NL5/83/4 WWWPT1/81/3N23FR5/8NPT1/81/8N2

[illegible]

$\gamma \frac{N^0}{1/3} \in \frac{0}{00} \frac{3}{4} \quad \frac{1}{3} H_T \in \frac{L}{F} \frac{1}{3} \frac{0}{00} \frac{5}{8} L_F'' N_L \frac{5}{8} \oplus \frac{1}{3} H_T \otimes \frac{1}{3} C_R N^0 P_t \frac{1}{8} N^0$
 $f \frac{5}{8} \frac{2}{3} L_F \in \frac{N}{L} \frac{5}{8} \frac{3}{4} \quad \frac{1}{3} H_T \in \frac{L}{F} \frac{1}{3} \frac{0}{00} \frac{5}{8} L_F'' N_L \frac{5}{8} \oplus \frac{1}{3} H_T \otimes \frac{1}{3} C_R N^0 P_t \frac{1}{8} N^0$

$$f_{5/8, 2/3}^{5/8, 2/3} L_F \in N_{5/8, 3/4} \quad \text{#####} P_{t, 1/3}^V T_C B^{12/3} \in -^3_{8, 1} P_{t, 1/8} N^0$$
$$f_1^{5/8} f_2^{2/3} L_F \in N_{1/5}^{5/8} P_{t-1}^{-1} \otimes P_{t-1}^{1/3} L_F N_{1/8}^0$$
$$f^{5/8,2/3} L_F \in N^{5/8,3/4} \quad \text{WWWPr}_{2/3}^{15/8} \text{Pr} \in -^{(5/8)} \text{Pr} \in -^{(5/8)} 00^{(5/8)} \in N^0 \text{Pr}_{1/8}^1 N^0$$
$$f_{5/8}^{2/3} L_F \in N_{5/8}^{3/4} \quad \mathbb{W} \mathbb{W} \mathbb{W} P_t L_F^{1/3} = 17/8 \in P_t^{1/8} N^o$$
$$f_{5/8}^{2/3} L_F \in N_{L_{5/8}^{3/4}} \quad \text{WWW} P_t^{2/3} L_F^{7/8} P_t^{1/8} N^o$$

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$$\begin{aligned} & \cdot N^{01/3} \in {}^0_{00} 3/4 \quad N^{01/3} \text{R}^c_{\text{u}} 5/8 \text{N} \in - \textcircled{\text{M}} \textcircled{\text{P}} \text{Rs}^3_8 \text{R} \in \text{N}^5_8 \text{Pt}^1_8 \text{N}^0 \\ & \text{fi}^{5/8,2/3} \text{L} \in \text{N}^5_8 3/4 \quad \textcircled{\text{P}} \text{N}^{\text{L}} \text{N}^{\text{L}} \text{L}^{\text{L}} \text{T}^{\text{F}}_3 f f \text{WWW} \text{P} \textcircled{\text{P}} \text{Rs}^3_8 \text{R} \in \text{N}^5_8 \text{Pt}^1_8 \text{N}^0 \end{aligned}$$
[illegible]

ararehem nne & specialty chemicals

[illegible][illegible]

Carbon Activated Corporation

“3/8”R5/8LFF3/4 ■ 000/8 □ 0001V1/85/8L5/8R □ 11/3/8£ ● 5/8RFRS
 †5/81/3⊕5/8-£ff01R-2/3VTRRS£ -R£L5/81/800£ --1/42 1/4R□£ ffiSM
 ff5/80003/4 »C0 i^a 2C2C 2C2C2C
 ›N²/3€0003/4 €-7/81¥5/8VTR1H5/8”1/31/8N€⊕1/3N5/83/81/3R2/31-Pt1/81N²
 fi5/83L£€N5/83/4 ©NLNLH5/83/4ff1/31/8N€⊕1/3N5/83/81/3R2/31-Pt1/81N²

Chemviron

“3/8”R5/8LFF3/4 ›VTR1H5/81/3- ■H5/8R1/3N€1-LF 17/8 -1/30001- -1/3R2/31-
 -1RHT1R1/3N€1-£ ■1/3R1/8†-3/8VTRNL€5/800 3/85/8 O5/800VTRS£ \$1-5/8 -£ -¥0000
 O5/800VTRS£ -5/8000€VTRN²
 ■01-5/83/4 »1/41/2 i^a nC 20 0000£ »1/41/2 i^a nC 2C 0200
 ›N²/3€0003/4 €-7/81”1/805/8N⊕€R1-Pt5/8V
 fi5/83L£€N5/83/4 ©NLNLH5/83/4ff1/31/8N€⊕€R1-Pt5/8V

Raj Carbon

“3/8”R5/8LFF3/4 1/4fn0-£†1/3R2/31VTR -RSHT1/3LFF □11/3/8£ffVTRNL€1/81R€-£ff1/3N€000
 o1/3/8VTR†-3/8€1/3Pt
 ›N²/3€0003/4 N²/3-1/305/8R”R1/3%1/81/3R2/31-Pt1/81N²
 ●12/3Pt3/4 »00 00002¥20000
 fi5/83L£€N5/83/4 ©NLNLH5/83/4ff1/31/8N€⊕€R1-Pt5/8V

Jacobi Carbons AG DMCC Branch

“3/8”R5/8LFF3/4 ■Pt■Pt -1H C0C001/2£ ›VTR2/31/3€£ ffi-€N5/83/8 “R1/32/3 ›N€€R1/3N5/8L
 ■01-5/83/4 »000 C 002 0000
 ›N²/3€0003/4 €-7/81N5/81/3”%1/31/812/3€Pt-5/8N
 fi5/83L£€N5/83/4 ©NLNLH5/83/4ff1/31/8N€⊕€R1-Pt5/8V

Turraco Industrial Limited

“3/8”R5/8LFF3/4 o1 0000£ ●VTR0€- □11/3/8£ †N€€R5/8 ¥ R1/3W1/3-LF1-£ -VTRVTR0005/8R5/8£
 R1/301LFF o€005/8R€1/3
 ff5/80003/4 »1/21/4C i^a 000 000 1/21/21/2 ▢ »1/21/4C i^a 000 1/21/20 000 ▢
 ›N²/3€0003/4 €-7/81”NLTTRR1/31/81Pt1/81N²
 ›N²/3€0003/4 NLVTRR1/31/81€-3/8”N²/3€000Pt1/81N²
 fi5/83L£€N5/83/4 ©NLNLH5/83/4ff1/31/8N€⊕€R1-Pt5/8V

NAOH

Oil Base India

“3/8”N₁R₅1/3 -1/3-L₁1/3%00 j₁€R₅1/8N₁L₁R₁
“3/8”R₅1/8-L₁1/3%00 SM₁¥000000 □R₁V₁-3/8 0%001¹R₁ ■€N₁1/3N₁H₁V₁T₁R₁1/30 05/81/3R₁ SM101/3N₁
>-1/8%001/30 5/8 5/8N₁L₁R₁ -N₁1/3N₁€1-
■€N₁1/3N₁H₁V₁T₁R₁1/3SM101/3N₁ >-1/8%001/30 5/80 05/8W₁ <5/8%000€ ¥ 00001/400 <5/8%000€ & -3/8€1/3
●12/3€0%005/83/4 »j₁00: - 000000000000 »j₁00: ¥ 000000001/200
■01-5/83/4 »j₁00: ¥ j₁00: - 000000000000 »j₁00: ¥ j₁00: - 000000001/4
fi5/83/4L₁€N₁5/83/4 0N₁L₁H₁3/4ffWWWPr₁1€0002/31/3L₁5/8€-3/8€1/3Pr₁1/81^N0

A. B. Enterprises

●1/3-101/3R₁0001/3%00 -1/3-0 j₁→■₁
●R₁Pr₁01/3-3/8R₁1/3%00 -1/3-0
“3/8”R₅1/8-L₁1/3%00 01Pr₁ 1/21/20 -0R₁1/33/81/3-1/3-3/8 -V₁€0%003/8€-00 1/201/2 f 1/2000
-1/3N₁V₁5/8%00 -N₁L₁R₅5/8N₁L₁ ●V₁N₁2/31/3€ ¥ 000001/400 ●1/301/3R₁1/3L₁€N₁L₁R₁1/30 & -3/8€1/3
●12/3€0%005/83/4 »j₁00: ¥00000001/4000000 »j₁00: ¥000001/2001/2000
ff5/80005/8H₁01-5/83/4 »j₁00: ¥1/21/20 ¥1/21/401/420000 »j₁00: ¥1/21/20 ¥nn1/401/2200
fi5/83/4L₁€N₁5/83/4 0N₁L₁H₁3/4ffWWWPr₁1/33/5/8-N₁5/8R₁H₁R₁€L₁5/8€-3/8€1/3Pr₁1/81^N0

Triveni chemicals

“3/8”R₅1/8-L₁1/3%00 01Pr₁ 01/420 ■1/3-1/801/3R₁1/3N₁-1/3 -01/3R₁ 01/3L₁€N₁1/30 □Pr₁ &Pr₁ <Pr₁
-Pr₁ff1/3H₁€ ¥ 1/40000000 □V₁0%1/3R₁1/3N₁ & -3/8€1/30
ff5/80005/8H₁01-5/83/4 »j₁00: ¥1/200: ¥nn000000
01/3N₁3/4 »j₁00: ¥1/200: ¥nn0001/200
●12/3€0%005/8 013/4 »00 01/21/200 0002200»j₁00: ¥00000200001/4
fi5/83/4L₁€N₁5/83/4 WWWPr₁N₁L₁R₁€05/8-€€-N₁5/8R₁1/805/8N₁Pr₁1/81^N0
¥N₁2/3€0%003/4R₅1/8-L₁1/3%00 -L₁5/8”N₁L₁R₁€05/8-€1/805/8N₁€1/81/3%00L₁Pr₁1/81^N0
fi5/83/4L₁€N₁5/83/4 0N₁L₁H₁3/4ffWWWPr₁N₁L₁R₁€05/8-€1/805/8N₁€1/81/3%00Pr₁1/81^N0

Kashyap Industries

SM1/3L₁€R₅1/3H₁01/3€00 j₁■R₁H₁R₁€5/8N₁L₁R₁
“3/8”R₅1/8-L₁1/3%00 01Pr₁ 1/21/40f1/20 SM1/32/3€0%00H₁T₁R₁5/80 □Pr₁ &Pr₁ <Pr₁ -Pr₁
01/30L₁1/3R₁€ ¥ 1/40001/200 □V₁0%1/3R₁1/3N₁L₁ & -3/8€1/3
●12/3€0%005/83/4 »j₁00: ¥0001/2001/400000
fi5/83/4L₁€N₁5/83/4 0N₁L₁H₁3/4ffWWWPr₁01/3L₁€R₅1/3H₁¥€-3/8V₁L₁€N₁L₁R₁€5/8L₁Pr₁€-

Central & Western (india) Chemicals

■Pr₁R₁Pr₁ -01/3-3/81/3R₁€ j₁→■₁
●L₁Pr₁ ■R₅5/8N₁€V₁2/35/8Rs
“3/8”R₅1/8-L₁1/3%00 TM¥000000 ●Pr₁ &Pr₁ <Pr₁ -€ -01L₁1/3R₁€00 ■H₁H₁1L₁€N₁5/8 □1/301/3%00€
●1/3N₁1/30 ■7/87/8 ff1/3N₁1/3 ●1N₁1L₁R₁€ 011/33/80 05/81/3R₁ ff1/3N₁1/3 ●1N₁1L₁R₁€ ■V₁-5/8 ¥
00001/2000 ●1/301/3R₁1/3L₁€N₁L₁R₁1/30 & -3/8€1/3
●12/3€0%005/83/4 »j₁00: ¥0001/21/21/4001/400000 »j₁00: ¥002000001/400
ff5/80005/8H₁01-5/83/4 »j₁00: ¥1/200: ¥1/2001/4001/4
fi5/83/4L₁€N₁5/83/4 0N₁L₁H₁3/4ffWWWPr₁1/8W€1/8Pr₁1/8Pr₁€-

ff13/8Rs1¹⁰SM^LF^{5/8}N^LCR^{1/3}Ω 1/2-3/8 ○%0011^LCR^Ω ●V^T0%0V^T-3/8□1^LCR^{5/8}⊙1/31- R[€]-^cμ 11^{1/3}/8Ω
 ●V^T0%0V^T-3/8 ff15/8^LF^NL^LΩ ●V^TN²²/31/3€¥€^{aaa}⊗Ω ●1/3⊙1/3^LCR^{1/3}^LF[⊙]N^LCR^{1/3}Ω ‡-3/8€1/3
 ■⊙1-5/83/4 »Ω² 1/21/2 n⊗Ω² nnnnΩ »Ω² 1/21/2 n⊗Ω² nnΩ²Ω »Ω² 1/21/2 1/22Ω² ⊙²Ω²
 ○1/3N^{3/4} »Ω² 1/21/2 1/22n2 1/41/21/4CΩ »Ω² 1/21/2 1/22n2 1/4²Ω²
 ›N²¹/3€⁰%03/4 €-7/81¹1/31/3^LCR^N€¥€-3/8V^T^LF^N^LCR^{5/8}^LF^P1/81N²
 ■⊙1/3^LCR^N21/33/4 1/3H^T€¹1/31/3^LCR^N€¥€-3/8V^T^LF^N^LCR^{5/8}^LF^P1/81N²
 ff5/823^LF[€]N^L5/83/4⊙N^LL^H^TL^F3/4ffwwwP^{1/3}1/3^LCR^N€¥€-3/8V^T^LF^N^LCR^{5/8}^LF^P1/81N²

[illegible][illegible]

“3/83/8R5/8LFLF3/4 @f1/2%Ω ffl1/3LR3/81/31/3- †1VLFL5/8Ω ●1/301/3⊕∈LR -NL5/85/8NLΩ “-LF1/3LR∈
□11/33/8Ω ,1/3LRRs1/3 □1/3-%Ω o5/8W ,5/8000%∈¥0000001/2 ‡⊙‡“¿Pt
■0Pt3/4 » α¥00¥CQCCaCQa ¥ 0aa 0/00∈-5/8LF
○1/3N3/4 » α¥¥00¥CQCCa2a f 1/21/41/20aα1/41/2
,N21/3∈%00 fflLF3/4 LF1/30005/8LF”1/83/807/8∈-5/81/805/8N0∈1/81/3000Pt1/81N0Ω
,N21/3∈%0003/4 N0VtN22/31/3∈”1/83/807/8∈-5/81/805/8N0∈1/81/3000Pt1/81N0
ff5/23LF∈N5/83/40NLLTLFL3/4ffWWWPt1/83/807/8∈-5/81/805/8N0∈1/81/3000Pt1/81N0

$$\begin{aligned} & \left(\frac{3}{8} \frac{3}{8} \frac{f}{f} \frac{R}{R} \frac{5}{5} \frac{8}{8} \frac{f}{f} \frac{L}{L} \frac{F}{F} \frac{3}{3} \frac{4}{4} \right) \text{aa} \mathcal{C} \mathcal{F} \text{ of } \mathcal{F} \mathcal{N} \bigcirc \text{oo} \text{11} \mathcal{R} \mathcal{E} \text{ ffi} \frac{3}{8} \mathcal{R} \mathcal{S} \text{1} \otimes \mathcal{S} \mathcal{M} \mathcal{L} \mathcal{F} \otimes \frac{5}{8} \mathcal{N} \mathcal{L} \mathcal{R} \mathcal{1} \frac{3}{3} \mathcal{E} \text{"} \frac{2}{3} \text{1} \oplus \frac{5}{8} \mathcal{S} \mathcal{M} \mathcal{R} \mathcal{E} \mathcal{L} \mathcal{F} \ominus \frac{1}{3} \\ & \bullet \text{1} \mathcal{N} \mathcal{L} \mathcal{R} \mathcal{L} \mathcal{F} \mathcal{E} \otimes \frac{5}{8} \frac{1}{3} \mathcal{R} \mathcal{N} \mathcal{E} \frac{1}{3} \mathcal{R} \mathcal{N} \mathcal{L} \mathcal{E} \bullet \mathcal{V} \text{t} \text{oo} \mathcal{V} \text{t} \text{--} \frac{3}{8} \square \mathcal{L} \mathcal{R} \mathcal{5} \mathcal{8} \otimes \frac{1}{3} \text{--} \mathcal{R} \mathcal{E} \text{--} \mathcal{C} \mathcal{U} \square \text{11} \frac{3}{3} \frac{3}{8} \mathcal{E} \bullet \mathcal{V} \text{t} \text{oo} \mathcal{V} \text{t} \text{--} \frac{3}{8} \\ & \text{ffi} \frac{5}{8} \mathcal{L} \mathcal{N} \mathcal{L} \mathcal{E} \bullet \mathcal{V} \text{t} \mathcal{N} \frac{2}{2} \frac{1}{3} \mathcal{E} \text{--} \mathcal{C} \text{aa} \mathcal{A} \otimes \mathcal{A} \mathcal{E} \bullet \frac{1}{3} \otimes \frac{1}{3} \mathcal{R} \mathcal{1} \frac{3}{3} \mathcal{L} \mathcal{F} \otimes \mathcal{N} \mathcal{L} \mathcal{R} \mathcal{1} \frac{3}{3} \mathcal{E} \text{+} \text{--} \frac{3}{8} \mathcal{E} \frac{1}{3} \\ & \text{ff} \frac{5}{8} \otimes \text{oo} \frac{3}{4} \text{»} \mathcal{X} \mathcal{Y} \frac{1}{2} \frac{1}{2} \mathcal{Y} \mathcal{C} \mathcal{X} \mathcal{O} \mathcal{O} \frac{1}{2} \mathcal{A} \mathcal{A} \mathcal{O} \mathcal{E} \mathcal{C} \mathcal{X} \mathcal{O} \mathcal{O} \otimes \frac{1}{2} \frac{1}{2} \mathcal{A} \mathcal{E} \mathcal{C} \mathcal{X} \mathcal{O} \mathcal{O} \otimes \frac{1}{2} \frac{1}{2} \mathcal{O} \\ & \mathcal{N} \mathcal{E} \frac{1}{3} \mathcal{E} \otimes \text{oo} \frac{3}{4} \mathcal{N} \mathcal{E} \frac{1}{3} \mathcal{R} \mathcal{C} \mathcal{U} \frac{5}{8} \mathcal{N} \mathcal{L} \mathcal{E} \text{--} \mathcal{O} \text{"} \frac{2}{3} \otimes \frac{1}{3} \mathcal{R} \mathcal{1} \frac{3}{3} \mathcal{N} \mathcal{L} \frac{1}{8} \otimes \frac{5}{8} \mathcal{N} \mathcal{E} \mathcal{E} \mathcal{E} \frac{1}{8} \frac{1}{3} \otimes \text{oo} \mathcal{L} \mathcal{F} \mathcal{P} \text{t} \text{--} \frac{5}{8} \mathcal{N} \mathcal{L} \\ & \text{fi} \frac{5}{8} \frac{2}{3} \mathcal{L} \mathcal{F} \mathcal{E} \mathcal{N} \mathcal{L} \frac{5}{8} \frac{3}{4} \otimes \mathcal{N} \mathcal{L} \mathcal{N} \mathcal{L} \mathcal{H} \mathcal{T} \frac{3}{4} \text{ff} \mathcal{W} \mathcal{W} \mathcal{W} \mathcal{P} \mathcal{T} \frac{2}{3} \otimes \frac{1}{3} \mathcal{R} \mathcal{1} \frac{3}{3} \mathcal{N} \mathcal{L} \frac{1}{8} \otimes \frac{5}{8} \mathcal{N} \mathcal{E} \mathcal{E} \mathcal{E} \frac{1}{8} \frac{1}{3} \otimes \text{oo} \mathcal{L} \mathcal{F} \mathcal{P} \text{t} \text{--} \frac{5}{8} \mathcal{N} \mathcal{L} \end{aligned}$$

Alpha Chemika

ff1/3-N²1/3Rs ●1/3⊙1/3%1/3-

“R■+” -†,●‡SM“P_t -1/3⊕⊙1/3- †⁵8€⊙⊙N_LF£ ²²1/2£ - W€£ “-3/8⊙5/8F_R€ fi⁵8F_N£

●V_TN²3/3€£ ●1/3⊙1/3F_R1/3F_N£F_R1/3 ¥ €²²²21/4£ ‡-3/8€1/3

■⊙1-5/83/4 »²2¥1/21/2¥ⁿ21/2⊙⊙€⊙ f 1/2ⁿ1/41/4²²€² f 1/2ⁿ1/4⊙⊙²² f €²²22/4

●12/3€%⊙5/83/4 »²2¥²1/4²²€ⁿ1/4ⁿ£ »²2¥²1/4⊙1/21/4ⁿ⊙²²1/4

⋈N²1/3€%⊙3/4 5/8N_HT₁F_RN_LF”1/3%⊙ⁿ1/31/8⊙5/8N²€%1/3P_t1/81P_t€-

fi⁵82/3F_R€N_L5/83/4⊙N_LN_LH_T3/4f fWWWP_t1/3%⊙ⁿ1/31/8⊙5/8N²€%1/3¥F_R1/8€5/8-N_L€7/8€1/8P_t1/81N²

Universal aromatic

“3/83/8F_R5/8F_R3/4■%⊙1N_L ⊙1P_t 1/21/2²²€f 1/21/2²²€£□P_t‡P_tP_t-P_t£ “-€%⊙5/8F_R⊙W1/3F_R - 1/4²²1/4²²1/2£

□V_T€1/3F_R1/3N_L£ ‡⊙‡“P_t

■⊙1-5/83/4¥»²2¥1/2ⁿ€¥1/21/21/2²¹4² j■7/87/8€1/85/8j

ff⁵8%⊙3/4 »²2¥1/2ⁿ€¥1/21/2²²1/4² j□5/8F_R€3/85/8-1/85/8j

ff⁵8%⊙3/4 »²2¥²1/21/2⊙€€1/41/4²² j●12/3€%⊙5/8j

○1/3N_L3/4 »²2¥1/2ⁿ€¥1/21/4²²€1/4²

⋈N²1/3€%⊙3/4€-7/81”V_T-€⊕5/8F_RF_R1/3%⊙1/3F_R1N²1/3N_L€1/8P_t1/81N²

■V_TF_R1/8⊙1/3F_R5/83/4 V_T-€⊕5/8F_RF_R1/3%⊙2V_T”Rs1/3⊙11P_t1/81N²

F_R1/3%⊙5/8F_R3/4 %€N_L5/8F_R⊙H_T1/3N_L5/8%⊙1/41/4²²⊙N²1/3€%⊙P_t1/81N²

fi⁵82/3F_R€N_L5/83/4⊙N_LN_LH_T3/4f fWWWP_tV_T-€⊕5/8F_RF_R1/3%⊙1/3F_R1N²1/3N_L€1/8P_t1/81N²

IRON POWDER

INDUSTRIAL METAL POWDERS (INDIA) PVT. LTD

“3/8” $\frac{3}{8}$ “ $\frac{5}{8}$ “ $\frac{1}{2}$ “ $\frac{1}{4}$ “ $\frac{1}{8}$ “ $\frac{1}{16}$ “ $\frac{1}{32}$ “ $\frac{1}{64}$ “ $\frac{1}{128}$ “ $\frac{1}{256}$ “ $\frac{1}{512}$ “ $\frac{1}{1024}$ “ $\frac{1}{2048}$ “ $\frac{1}{4096}$ “ $\frac{1}{8192}$ “ $\frac{1}{16384}$ “ $\frac{1}{32768}$ “ $\frac{1}{65536}$ “ $\frac{1}{131072}$ “ $\frac{1}{262144}$ “ $\frac{1}{524288}$ “ $\frac{1}{1048576}$ “ $\frac{1}{2097152}$ “ $\frac{1}{4194304}$ “ $\frac{1}{8388608}$ “ $\frac{1}{16777216}$ “ $\frac{1}{33554432}$ “ $\frac{1}{67108864}$ “ $\frac{1}{134217728}$ “ $\frac{1}{268435456}$ “ $\frac{1}{536870912}$ “ $\frac{1}{1073741824}$ “ $\frac{1}{2147483648}$ “ $\frac{1}{4294967296}$ “ $\frac{1}{8589934592}$ “ $\frac{1}{17179869184}$ “ $\frac{1}{34359738368}$ “ $\frac{1}{68719476736}$ “ $\frac{1}{137438953472}$ “ $\frac{1}{274877906944}$ “ $\frac{1}{549755813888}$ “ $\frac{1}{1099511627776}$ “ $\frac{1}{2199023255552}$ “ $\frac{1}{4398046511104}$ “ $\frac{1}{8796093022208}$ “ 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$$f^{5/8} \cdot {}^2_3L_F \in N_{5/8} \cdot {}^3_4P_L \oplus N_{N_L L_T} \cdot {}^3_4ffWWP_L P_L F^{1/8} P^{5/8}_0 N^0 \in {}^1_8 \cdot {}^3_0{}^3_0 L_F P_t \cdot {}^1_8 P_t \in -$$

f5/82/3 L E N 5/3/4 P N H L F 3/4 f f W W W P 1/8 P 5/8 N 95/8 N 1/8 P 5/8 N 0 E 1/8 1/8 0 L F P 1/8 1/8 N 0

f5/2/3 L F E N 5/8 3/4 P N N H 3/4 f f W W W P 1/3 N 1/3 C 5/8 L 1/8 P 5/8 N O H T N 0/100 N 3/8 P 1/8 N O

f^{5/8}2^{3/4}L⁶E⁹N⁵5/8^{3/4}⊕N¹N¹H¹3/4ffWWWp¹L¹⁰00⊕11/8⊕5/8N⁰p¹€-

$$f_1^{5/8/3} L_F \in N_{L^{5/8/4}} \oplus N_{L^H T^{3/4}} f f \text{ WWW } P_t^{C_u^{5/8} L_F \oplus 1/3} C_R \in R_S^{1/3 1/8 1} C_R^H T^1 C_R^{1/3} N_L \in 1 - P_t \in -$$
$$f_{\frac{5}{8} \times \frac{2}{3}}^{\text{L}} \in N_{\frac{5}{8} \times \frac{3}{4}}^{\text{L}} \oplus N_{\text{L}, T_{\frac{3}{4}}}^{\text{L}} f_{\text{WWWPt}_{\frac{1}{3}} \text{Rs}_{\frac{1}{8}} \text{P}_{\frac{5}{8}} \text{N}_{\frac{0}{1}} \in \frac{1}{8} \times \frac{0}{100} \text{Pt}_{\frac{1}{8}} \text{N}_{\frac{0}{1}}}$$

$$\begin{aligned} & -\blacksquare\blacksquare\blacksquare\blacksquare\text{ff}, \blacksquare\bigcirc\bigcirc\text{f}\rightarrow\text{--}^3_4\text{ } \textcircled{a} \text{ f f f } ^5_8\text{R}^1\text{--}^1_8\text{ } ^1_3 \text{ " } \textcircled{\oplus} ^5_8\text{ } ^1_1\text{N}^{25}_8\text{R}^1\text{F}^5_8\text{N}^1\text{ } \bigcirc^{\text{TM}} \text{ } \textcircled{\text{a}} \textcircled{\text{c}} \textcircled{\text{a}} ^1_4 \\ & \text{N}^{21}_3\text{ } ^0_0\text{ } ^3_4 \text{ -- } \text{V}_\text{L}\text{F}\text{N}^1\text{N}^{25}_8\text{R}^1\text{--}^5_8\text{R}^1\textcircled{\oplus} \text{ } ^1_8\text{ } ^5_8 \text{ " } \square^{\text{TM}} \text{--} ^5_8\text{N}^2 \text{ } ^1_8\text{ } ^1_3\text{ } ^0_0\text{P}^1_8\text{ } ^1_1\text{N}^2 \\ & -\blacksquare\text{off} \text{--ff f f i--}^3_4 \text{ ; } \textcircled{\text{a}} ^1_4 \text{ ; } ^2\textcircled{\text{c}} \textcircled{\text{a}} \textcircled{\text{a}} \textcircled{\text{c}} ^2\textcircled{\text{a}} \text{ } \text{ ; } \textcircled{\text{a}} ^1_4 \text{ ; } ^1_2 \text{ } ^1_2\textcircled{\text{c}} \textcircled{\text{a}} \textcircled{\text{a}} \textcircled{\text{c}} ^1_2 \\ & \text{f} ^5_8\text{ } ^2_3\text{F} \text{ } ^1_8\text{ } ^5_8\text{ } ^3_4 \text{ } \textcircled{\text{a}} \text{N}^1\text{N}^1\text{L}^1\text{F}^1\text{ } ^3_4\text{ } f \text{ } ^0_0\text{ } ^1_8\text{ } ^5_8\text{N}^2 \text{ } ^1_8\text{ } ^1_3\text{ } ^0_0\text{P}^1_8\text{ } ^1_1\text{N}^2 \end{aligned}$$
[illegible][illegible]

$\bigcirc \frac{1}{3} N \in \mathbb{L}^{-1} - \frac{3}{8} \%_0 \vdash - \frac{3}{8} V_T F N \sqsubset R \in \mathbb{L}^5 \mathbb{L}^F \blacksquare \frac{1}{3} C_R \cup^3 \blacksquare \%_0 \mathbb{L} \text{ ff } \blacksquare^a \mathbb{C}^{\frac{1}{4} \mathbb{N}^3}, V_T \frac{2}{3} \mathbb{L} \in \mathbb{L} \text{ ffi } P_t \text{ " } P_t \blacktriangleright \blacksquare \cdot P_t \blacksquare$
 $- \frac{1}{N} \frac{3}{4} \frac{21}{2} \frac{1}{4} \mathbb{Q}^{\mathbb{Q}}$
 $\blacksquare \mathbb{Q} \frac{3}{4} \gg \mathbb{X}^{\mathbb{Q}} \mathbb{C} \nmid \frac{1}{4} \frac{1}{4} \frac{2}{2} \mathbb{O} \frac{1}{2} \frac{1}{2} \frac{1}{2}$
 $\text{fi} \frac{5}{8} \frac{2}{3} \mathbb{L}^F \in \mathbb{N}^{\frac{5}{8} \frac{3}{4}} \mathbb{O} \mathbb{N}^{\mathbb{L}} \mathbb{L}^T \mathbb{L}^F \frac{3}{4} f f \text{ www } W P_t \in \frac{1}{3} \mathbb{O} \frac{1}{8} \mathbb{O} \frac{5}{8} \mathbb{N}^{\mathbb{Q}} \in \frac{1}{8} \frac{1}{3} \%_0 \mathbb{L}^F P_t \frac{1}{8} \mathbb{N}^{\mathbb{Q}}$
 $\bigcirc \frac{1}{3} N \frac{3}{4} \gg \mathbb{X}^{\mathbb{Q}} \mathbb{C} \frac{1}{4} \frac{1}{4} \frac{2}{2} \mathbb{O} \frac{1}{2} \frac{1}{2} \mathbb{Q}$

[illegible]
$$\begin{aligned} & \text{"3/83/8 F R 5/8 F L F 3/4 \langle 1/3 \in 0_{00} R s \text{ ff} \in N^{95/8} L_F - 1^N e^H t_{00} 5/8 N \mathbb{N}^2 R_{1/3} N_{5/8} 5/8 7/8 T M 1/3 u_{1/3} - 3/8 5/8 \square 3/8 \mathbb{E} } \\ & \pm \cup 5/8 \% 1/3 \mathbb{E} R_{1/3} \otimes 1 L_F \\ & \blacksquare \odot P_{1/3/4} \gg 1/2 1/4 \mathbb{C} \text{ j}^a \mathbb{C} : \alpha^a \text{ } 1/2 21/2^2 \text{ } \alpha_n \alpha \alpha \\ & f j 5/8 2/3 L_F \in N_{5/8} 3/4 \odot N_{1/3} L_H L_F 3/4 f f \text{ WWW P t} \odot N^{91/3} L_F 1/8 \odot 5/8 N^{\circ} \in 1/8 1/3 \% 00 L_F P t_{1/8} 1^N \mathbb{N}^{\circ} \end{aligned}$$
[illegible]

$$\square^{5/8-5/8} \Gamma_{R1/30/00} \pm -7/81 \Gamma_{RN^{91/3}NL} \in 1-$$
$$\dagger^{5/8}7/8^{5/8}\in\text{ffo}^{\text{TM}}-\oplus^{5/8}\text{N}^0\in1/8^{1/3}0/00\ddagger^{-3/8}\text{V}_{\text{TF}}^{\text{N}}\text{L}_{\text{R}}\text{R}_{\text{S}}-1\text{P}_{\text{t}}\text{L}_{\text{R}}^{\text{N}}\text{L}^{3/8}\text{P}_{\text{t}}$$
$${}^{3/8}{}^{3/8}{}^{\mathbb{C}}{}^{\mathbb{R}}{}^{5/8}{}^{\mathbb{L}}{}^{\mathbb{F}}{}^{\mathbb{L}}{}^{\mathbb{F}}{}^{3/4} \quad {}^{02\mathbb{a}}{}^{\odot}{}^{\mathbb{L}} \quad \mathbb{f} \in -1/8{}^{\mathbb{P}}{}^{5/8}{}^{\mathbb{M}} \quad -\mathbb{V}{}^{\mathbb{T}}{}^{\mathbb{L}}{}^{\mathbb{F}} \in -5/8{}^{\mathbb{L}}{}^{\mathbb{F}}{}^{\mathbb{L}}{}^{\mathbb{F}} \quad -5/8-{}^{\mathbb{N}}{}^{5/8}{}^{\mathbb{C}}{}^{\mathbb{R}}{}^{\mathbb{L}} \quad \square \in 1/3-{}^{\mathbb{L}}{}^{\mathbb{F}}{}^{\mathbb{P}}{}^{1/3}- \quad \square 1/3{}^{3/8}{}^{\mathbb{L}}$$
$$\dagger^{5/8}7/8^{5/8}\in -\in^{\mathbf{N}}_{\mathbf{L}}\mathbf{R}\mathbf{s}\mathbb{Z} \text{ “} -^{\mathbb{P}}\mathbf{V}_{\mathbf{T}}\in \blacksquare \ulcorner_{\mathbf{R}}1\oplus \in -1/8^{5/8}\mathbb{Z} \text{ } -^{\mathbb{P}}\in -1/3$$
$$N^{01/3} \in {}^0_{00}3/4 \quad \in -7/8 {}^1N_L - {}^0_{01/8} {}^5/8 N^{01} P_{t1/8} N^{01} \mathcal{E}$$
[illegible]
$$N_L - C_{01/8} \oplus 5/8 N^{\oplus} \otimes N^{\oplus 1/3} \in 0/00 P_t 1/8 1 N^{\oplus}$$
$$f f^{5/8 0/00} 3/4 \gg \text{aa} \odot \text{n} \nabla 220 \nabla \text{n} 2 \text{C}^{\circ} \odot \text{n} \odot \text{C} \int \text{n} 2 \text{C}^{\circ} \odot \text{n} \text{R}^{\circ} \int \text{n} 2 \text{C}^{\circ} \odot \text{n} \text{R}^{\circ} \text{X}$$

○¹/₃~~N~~³/₄ »aa©n¥220¥n2¢⁰©n¤®

$$f^{5/8 2/3} L_F \in N_{L^{5/8 3/4}} \oplus N_{L^N L_H L_F^{3/4}} f f \frac{WWW}{P_t} N_{L-C_0 1/8 \oplus 5/8 N^0 P_t 1/8 1 N^0}$$
$$\text{"}\frac{3}{8}\frac{3}{8}\frac{1}{8}\text{R}\frac{5}{8}\text{F}\frac{1}{8}\text{F}\frac{3}{4} \blacksquare \text{P}_t \blacksquare \text{P}_t - 1 \text{N} \frac{1}{4} \frac{22}{22} \Sigma \bullet \text{V}_T \text{F}\frac{1}{3}\frac{7}{8}\frac{7}{8}\frac{1}{3} \text{P} \text{£} \text{‡} - \text{"} \text{‡} \text{£} \text{"}\frac{2}{3}\text{V}_T \text{P}\frac{1}{3}\frac{2}{3} \in \text{£}$$
$$P_t \rightarrow P_{t+1}$$
$$\blacksquare \textcircled{\text{P}} \text{P}_{\frac{3}{4}} \text{ » } \textcircled{\text{X}} \textcircled{\text{R}} \textcircled{\text{Q}} \frac{1}{2} \text{ }^{22\text{a}} \frac{1}{2} \text{ }^{\text{a}1} \text{ }_{2\text{n}} \text{F} \text{ » } \textcircled{\text{X}} \textcircled{\text{R}} \textcircled{\text{Q}} \frac{1}{2} \text{ }^{22\text{a}} \frac{1}{2} \text{ }^{\text{a}1} \text{ }_{2\text{R}} \text{F} \text{ » } \textcircled{\text{X}} \textcircled{\text{R}} \textcircled{\text{Q}} \text{ }^{2\text{a}} \text{ }^{\text{C}} \textcircled{\text{Q}} \frac{1}{4} \frac{1}{2} \text{ }^2 \textcircled{\text{C}} \textcircled{\text{R}}$$
$$N^{01/3} \in 0/00^{3/4} \quad \in -7/8^{1''} \in \in 1/8^N \quad P_t^{1/3} 5/8$$
$$f_1^{5/8} f_2^{2/3} L_F \in N_{L_F}^{5/8} P_t^{3/4} \otimes^N N_{L_H T_L F^{3/4}} f f \in \in^{1/8} N_{P_t}^{1/3} P_t^{5/8}$$

PRINTED BAGS

PolyPak America

“3/8”R5/8F3/4 1/2 1/4 1/4 1/3 LFL fi 1/3 F@-@NL 1- -1V%005/8 1/3 R3/8 R1L “-@5/8%005/8 F@-“
 @a1/2 1/4 Ffi-“
 N1/3 @%003/4 L1/3%005/8 F”H10%00Rs H1/3%uPt1/81N°
 R11/81/3%003/4 1/4 1/2 1/4 Pt1/2nCPt1/2Caa
 ff10%00%0 O R5/85/83/4 @aaPt@1/2nPtCaaa
 O1/3N3/4 1/4 1/2 1/4 Pt1/2nCPt1/2Caa
 fi5/83 L@NL5/83/4 WWWP H10%00Rs H1/3%uPt1/81N°

Shields Bag and Printing

“3/8”R5/8F3/43/4aaa 1/8%u “@5/8-VT5/8 ...1/3%u@N1/3 F1/3 F@-@NL 1- @a1/2
 i@aa; 2C@Y@n1/4a
 i2a; 1/2C@Yn1/4aC O“fi
 -“R- ■○○±-3/4
 ...1/3%u@N1/3 -1/3%005/8 F ■7/87/8@1/85/8 @aa 1/8%u “@5/8-VT5/8 ...1/3%u@N1/3
 fi1/3 F@-@NL 1- @a1/2
 i@aa; 2C@Y@n1/4a
 i2a; 1/2C@Yn1/4aC O“fi
 N1/3 @%003/4 L1/3%005/8 F”L@5/8%003/8 F2/31/3@Pt1/81N°
 fi5/83 L@NL5/83/4 @NL L H1/4 f WWWP L@5/8%003/8 F2/31/3@Pt1/81N°

Yantai Evergreen Packaging Co., Ltd.

“3/8”R5/8F3/4-NL R5/85/8 N3/4o1Pt@L@1/3- 1/33/8 O VTL@1/3- @LFL R@1/8NL
 ...1/3-NL1/3@ -@NL Rs@ -@1/3-3/81-@ ■R1@-1/85/8Pt -@-1/3
 ff5/80%005/8 H1-5/83/4@nY21/42Yn1/4n1/2n2@
 -1-NL1/31/8NL ■5/8 R L1-3/4● RPR5/85/8
 ff5/80%003/4@nY21/42Yn1/4n1/2n2@
 O1/3N3/4@nY21/42Yn1/4n1/2n2@
 fi5/83 L@NL5/83/4 WWWP % VTN2/312/31/3@Pt1/81N°Pt1/8-

LAB CHEMICALS

New Alliance Dye Chem Private Limited

● CRP_t “-1/3-3/8 j-1/3%005/8LF ● 1/3-1/3%5/8CR_i
“3/83/8CR_{5/8}LF_{3/4} 1/4£ £ -1/3V_TCR_{1/3}2/3© —11H_T5/8CR_{1/3}NL€⊕5/8 †1V_TLF€—© —11/8€5/8NL_{Rs}£ n2£
ff■—ff££ ■CR_{1/3}CR_NL©1/3-1/3 -1/3N⁰¹1/3% □11/33/8£ 05/81/3CR ■CR_{1/3}CR_NL©1/3-1/3 -1/3N⁰¹1/3% †€©©
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○1/3N³4 »j₀£:¥₀£1/21/2£¥1/2ⁿ²©£
fi5/82/3LF€NL_{5/8}3/4 ©NL_NL_T3/4ffWWWP_N€1/8CR₁-V_TNL_{CR}€5/8-NL_{LF}P_t1/8P_t€-

Titan Biotech Limited

● CRP_t ffin⁰⁵5/8LF© j“LF€LFNL_{1/3}-NL ●1/3CR_u5/8NL€—© ●1/3-1/3%5/8CR_i
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-1N⁰N⁰⁵5/8CR_{1/8}€1/30/0 -1N⁰H_T0/005/8N£ ,5/80/00€ ¥ ⁰²²²1/41/4£ ‡-3/8€1/3
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○1/3N³4 »j₀£:¥₀£⁰²²²1/2⁰²²£
fi5/82/3LF€NL_{5/8}3/4 ©NL_NL_T3/4ffWWWP_N€NL_{1/3}-2/3€1N_L5/81/80/00NL_{3/8}P_t€-

Labcare Scientific

● CRP_t -1/3N⁰ □1/32/3CR€5/80/0 j■1/3CR_NL-5/8CR_i
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fi5/82/3LF€NL_{5/8}3/4 ©NL_NL_T3/4ffWWWP_N€0/001/32/31/81/3CR_{5/8}LF_{1/8}€5/8-NL€7/8€1/8P_t€-

Naugra Export

● CRP_t ff- -1/3W⁰-5/8Rs jN⁰H_T1CR_NL ,€CR_{5/8}1/8NL₁CR_i
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fi5/82/3LF€NL_{5/8}3/4
©NL_NL_T3/4ffWWWP_N€5/8F_VT€H_TN⁰⁵5/8-NL_{LF}€-LF_NL_{CR}V_TN⁰⁵5/8-NL_{LF}N⁰¹3-V_T7/81/31/8NL_VT_{CR}5/8CR_{LF}P_t1/81N⁰

Triveni Interchem Pvt. Ltd. (Group of Triveni —05/8N⁰€1/81/3%0LF_i

● CRP_t SMP_t SMP_t -€—©© f ●CRP_t ■€-1/3%€- ,5/8LF_{1/3}€ ,€CR_{5/8}1/8NL₁CR j●1/3-1/3%€—©
,€CR_{5/8}1/8NL₁CR_i
“3/83/8CR_{5/8}LF_{3/4} ⁰¹1/4££ ■1/31/8©1/3CR_{1/3}NL-1/3 —©1/3CR □1/3LF_N1/3£ □P_t‡P_tP_t-£ ff11/3H_T€ ¥
1/4ⁿ²££ □V_T©1/3CR_{1/3}NL£ ‡-3/8€1/3
●12/3€0/005/83/4 »j₀£:¥₀£1/21/2⁰²²²£»j₀£:¥₀£1/21/2⁰²²²£
ff5/80/005/8H_T©1-5/83/4 »j₀£:¥₀£1/2ⁿ²£¥_{nn}©n⁰²£
○1/3N³4 »j₀£:¥₀£1/2ⁿ²£¥_{nn}©n⁰²£
fi5/82/3LF€NL_{5/8}3/4 ©NL_NL_T3/4ffWWWP_N€NL_{CR}€⊕5/8-€€-NL_{5/8}CR_{1/8}05/8N⁰P_t1/81N⁰

[illegible]

$\bigcirc_{1/3} \mathbf{N}_{3/4} \stackrel{\mathfrak{a}21}{\mathfrak{a}} \mathfrak{1/4} \mathfrak{1/4} \mathfrak{Y} \mathfrak{e}29 \mathfrak{a} \mathfrak{1/4} \mathfrak{a} \mathfrak{a}$
 $\text{—} \mathfrak{5/8} \mathfrak{0/00} \mathfrak{00} \blacksquare \mathfrak{e} \mathfrak{1} \text{—} \mathfrak{5/8} \mathfrak{3/4} \gg \mathfrak{e} \mathfrak{N} \mathfrak{Y} \mathfrak{e} \mathfrak{1/4} \mathfrak{e} \mathfrak{N} \mathfrak{C} \mathfrak{C} \mathfrak{a} \mathfrak{1/2} \mathfrak{1/2} \mathfrak{n} \mathfrak{2}$
 $\mathfrak{N} \mathfrak{e} \mathfrak{1/3} \mathfrak{e} \mathfrak{00} \mathfrak{3/4} \mathfrak{L} \mathfrak{F} \mathfrak{1/3} \mathfrak{00} \mathfrak{5/8} \mathfrak{L} \mathfrak{F} \mathfrak{N} \mathfrak{L} \text{—} \mathfrak{00} \mathfrak{00} \mathfrak{e} \mathfrak{P} \mathfrak{V} \mathfrak{T} \mathfrak{1/3} \mathfrak{M} \mathfrak{1} \text{—} \mathfrak{M} \mathfrak{P} \mathfrak{t} \mathfrak{1/8} \mathfrak{1} \mathfrak{N} \mathfrak{e}$
 $\mathfrak{f} \mathfrak{5/8} \mathfrak{2/3} \mathfrak{L} \mathfrak{F} \mathfrak{e} \mathfrak{N} \mathfrak{L} \mathfrak{5/8} \mathfrak{3/4} \mathfrak{W} \mathfrak{W} \mathfrak{W} \mathfrak{P} \mathfrak{t} \mathfrak{L} \mathfrak{0} \mathfrak{00} \mathfrak{H} \mathfrak{T} \mathfrak{1/3} \mathfrak{N} \mathfrak{0} \mathfrak{L} \mathfrak{F} \mathfrak{P} \mathfrak{t} \mathfrak{1/8} \mathfrak{1} \mathfrak{N} \mathfrak{e}$

TM $\in \frac{1}{3} - \text{M} \text{F} \text{V}_T$ ■ $\text{R}^1 \text{⊗} \in -\frac{1}{8} \text{5/8} \text{£} - \text{⊖} \in -\frac{1}{3}$

fi1^rcu N_L ∈ N⁹⁵/₈ ³/₄ @3₄²²¥@03₄1² i⁻⁵/₈ € - -⁹ N_L ∈ N⁹⁵/₈ \hat{c}
 ■@1⁻⁵/₈ ³/₄ @n¥²²¥@0@0n@0¥@0@001²/₂ i fi1^rcu € - -⁹ N_L ∈ N⁹⁵/₈ \hat{c}
 ○₁/₃ N₃ ³/₄ @n¥²²¥@0@02@0@
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 >N⁹¹/₃ € 00³/₄ N⁹¹/₃ @00 € 5⁸ " @10⁰⁰/₀₀ 00 Rs ¥ N_L 5⁸/₁ 8⁰ P_t ⁻⁵/₈ N_L
 fi5²/₃ _L € N_L 5⁸/₃ ³/₄ @N_L N_L ³/₄ f f W W W P_t W¹/₃ N_L 5⁸/_R ¥ N_L 5⁸/₁ 3¹ N_L ⁹⁵/₈ - N_L 1⁸ € 5₈ N⁹⁰ € 1⁸/₃ ³/₀₀ P_t 1⁸ N⁹⁰

[illegible][illegible]

343/83R5/LF5/34 1/21/4® 0134W13234T VTRR11/338L 1/2-3/8 7/8%0011FR L <®1/3C/U1/3¥0000
 123€0005/8 ■®1-5/83/4 »©©00000C¥1/2nn0n1/2

[illegible]

Photographs/Images for Reference

Machinery Photographs

JACKETED REACTOR



FILTER



FLUIDISED BED DRYER



STORAGE TANK



REFRIGERATION UNIT



COOLING TOWER



DISTILLATION ASSEMBLY



BOILER



Raw Material Photographs

FOR PARACETAMOL-P-NITROPHENOL



IRON POWDER



IBUPROFEN



ACETIC ACID



METHANOL



6-APA (AMINO PENICILLANIC ACID)



TRIETHYL AMINE (6-APA)



TRIMETHYLCHLOROSILANE



DMA, HCL
(Dimethylamine Hydrochloride)



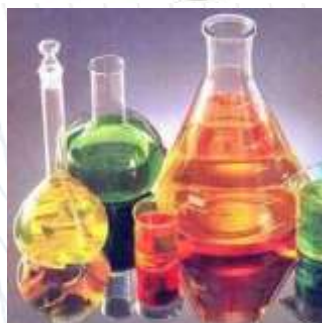
D-(-)-2-HYDROXYPHENYLGLYCINE
CHLORIDE



ACTIVATED CARBON



LABORATORY, ETP & OTHER CHEMICALS



Product Photographs

PARACETAMOL



IBUPROFEN





Plant Layout



Conclusion

In conclusion, our comprehensive report on the API manufacturing business project serves as a valuable resource for stakeholders and potential investors in the pharmaceutical industry. We have meticulously covered various aspects of the project, providing detailed information and analysis.

The report begins with an exploration of the project's location, including district profiles and geotechnical site characterization. This initial phase provides a solid foundation for understanding the environmental and geographical factors that will influence the project.

Moving forward, we have conducted in-depth studies on specific pharmaceutical ingredients, such as Metformin, Amoxicillin, Ibuprofen, and Paracetamol. These sections offer insights into the medical uses, chemical properties, manufacturing processes, and safety measures associated with each API.

Our report also includes a SWOT analysis that identifies the project's strengths, weaknesses, opportunities, and threats. This strategic assessment helps stakeholders make informed decisions and plan for future development.

Furthermore, we have conducted a comprehensive risk assessment, covering various aspects, including chemical and biological exposure, environmental contamination, quality control failures, supply chain disruptions, regulatory non-compliance, intellectual property breaches, equipment failures, accidents, fires, and market dynamics risks. Each risk category includes a thorough examination of potential outcomes and mitigation strategies.

The report delves into the social and economic impacts of the API manufacturing unit, highlighting its potential benefits to the local community and the broader economy. We have also discussed future challenges that may arise in the API manufacturing sector, offering insights into preparedness and adaptation strategies.

A market survey provides a deep dive into the global and Indian API markets, with insights on types, applications, synthesis methods, regional dynamics, and key players. This information is invaluable for understanding market trends and competition.

In addition, we have included financial data and comparisons of major Indian players and companies in the API manufacturing industry. This financial analysis offers insights into profitability, liquidity, and overall financial performance.

Finally, the report features photographs and images for reference, including machinery, raw materials, and finished products, providing visual context to the information presented. The plant layout section provides a visual representation of the project's physical structure.

In conclusion, our report serves as a comprehensive guide for anyone interested in the API manufacturing business, from project location and technical details to market analysis and financial insights. It offers a thorough understanding of the industry, its potential, and the strategies required for success in the competitive pharmaceutical sector.

PROJECT FINANCIALS

Active Pharma Ingredients (API)

Annexure 1

Assumptions made

- 1 Interest cost for CC limit (WC finance) is @10.00%
- 2 Semi Variable & Fixed Expenses are done on 40:60 basis on full capacity utilisation in 5th Year of operation.
- 3 For working capital calculation, the WC cycle is considered by taking following assumptions are made:
 - a Stock on hand i.e. Raw material cost @ 1 month, Finished goods @ 1 months and WIP cost taken for 1 days.
 - b Receivables @0 months.
 - c Current liabilities @ 1 months.
- 4 Currency is (Amount in Rs.) and (Rs. in Lakhs) in some tables
Indian Currency in Rs.

Active Pharma Ingredients (API)

Annexure 2

[NPCS/5515/24212]

PLANT ECONOMICS

Active Pharma Ingredients (API)

Metformin, Amoxicillin, Ibuprofen & Paracetamol

Rated Plant Capacity			
Total Production per Day	=		Kg/Day
Total Production per Month	=		Kg/Month
Total Production per Annum	=		Kg/Annum
Basis			
No. of working days	=		Days/Month
	=		Days/Annum
No. of shifts	=		Shifts per day
One shift	=		Hours
Total working Hours per day			Hours per day

Prepared by "Niir Project Consultancy Services"

Active Pharma Ingredients (API)

Annexure 3

[NPCS/5515/24212]

PRODUCTION SCHEDULE

Name of Product	Kg. Per Day	Kg. Per Annum	Total Batch	UOM
Metformin (500 mg & 850 mg)				
Amoxicillin (500 mg)				
Ibuprofen (500 mg)				
Paracetamol (500 mg)				

Active Pharma Ingredients (API)

Annexure 4

[NPCS/5515/24212]

LAND & BUILDING

(Amount in Rs.)

Particulars of Proposed Assets (UOM)	UOM	Quantity	Rate	Total
Land Area Required	Sq.mts			
Factory Building -				
Metformin Section	Sq.mts			
Amoxicillin Section	Sq.mts			
Ibuprofen Section	Sq.mts			
Paracetamol Section	Sq.mts			
Tank Area	Sq.mts			
Raw Material Store Area	Sq.mts			
Finished Product Store	Sq.mts			
Administrative Block	Sq.mts			
Laboratory	Sq.mts			
Utility Area	Sq.mts			
Electrical & D.G. Set Room	Sq.mts			
Fuel Storage Area	Sq.mts			
Water Storage Area	Sq.mts			
Water Treatment Area	Sq.mts			
E.T.P. Area	Sq.mts			
Workshop	Sq.mts			
Toilets	Sq.mts			
Security Room	Sq.mts			

Active Pharma Ingredients (API)

Annexure 4

LAND & BUILDING

(Amount in Rs.)

Particulars of Proposed Assets (UOM)	UOM	Quantity	Rate	Total
Land Development Cost, Boundary Wall, Gate & Road etc.	Sq.mts			
			TOTAL	

Active Pharma Ingredients (API)

[NPCS/5515/24212]

Annexure 5

PLANT & MACHINERY

(Amount in Rs.)

Particulars of Assets Proposed (UOM)	UOM	Quantity	Rate	Total
Indigenous Machineries				
FOR METFORMIN - Jacketed Reactor 2 KL	Nos.			
Condenser	Nos.			
Storage Tank 2 KL	Nos.			
Filter	Nos.			
Spray Dryer	Nos.			
Storage Hopper	Nos.			
FOR AMOXICILLIN - Jacketed Reactor 2 KL	Nos.			
Filter	Nos.			
Vacuum Fluid Bed Dryer	Nos.			
Storage Tank 5 KL	Nos.			
Fuel Storage Tank	Nos.			
Distillation Assembly with Condenser	Nos.			
FOR IBUPROFEN GL Reactor Cap. 500 Ltrs.	Nos.			
Stainless Steel Reactor Cap. 1 KL	Nos.			
Stainless Steel Reactor Cap. 10 KL	Nos.			
Filter	Nos.			
Fluidized Bed Dryer	Nos.			
Distillation System (Contineous)	Nos.			
Storage Tank 5 KL	Nos.			
FOR PARACETAMOL - Jacketed Reactor Cap. 2 KL	Nos.			
Distillation Assembly Cap. 1 KL	Nos.			
Filter	Nos.			
Vacuum Fluid Bed Dryer	Nos.			
Compressed Air System	Nos.			
Refrigeration System	Nos.			
Cooling Tower	Nos.			
Boiler Cap. 4 Ton/hr	Nos.			
Pipeline, Pumps etc,	Sets			

Prepared by "Niir Project Consultancy Services"

Active Pharma Ingredients (API)

Annexure 5

PLANT & MACHINERY

(Amount in Rs.)

Particulars of Assets Proposed (UOM)	UOM	Quantity	Rate	Total
Tablet Making & Packaging Machines	Nos.			
Maintenance Equipments	Nos.			
Erection & Installation				
Miscellaneous Equipmetns like pumps, valves, pipeline & fittings	Nos.			
Laboratory Equipments	Nos.			
			TOTAL	

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Active Pharma Ingredients (API)

Annexure 6

[NPCS/5515/24212]

OTHER FIXED ASSETS

(Amount in Rs.)

Particulars of Assets Proposed	Quantity	Rate	Amount
Furniture & Fixtures			
Office Equipment, Furniture plus Other Equipment & Accessories			
Pre-operative & Preliminary Expenses			
Electrical Installation 250 KVA			
Electrical Cable, MCB, Meter Boxes, Switch Board etc.			
Fire Fighting Equipment			
D.G. set 200 KVA			
Effluent Treatment Plant			
Website Development & Promotion			
Water Resources with Storage Tank			
Others			
Technical know how			
Office Vehicles			
Office Automation Equipments (Telephone/ Fax/ Computer)			
Provision for Contingencies			
		TOTAL	

Active Pharma Ingredients (API)

Annexure 7

[NPCS/5515/24212]

WORKING CAPITAL Requirement Per Month

Raw Materials	UOM	Quantity	Rate	Amount	Qty p.a.	Qty per Batch
For Metformin - Dicyanodiamide	Kgs					
Dimethylammonium Chloride	Kgs					
For Amoxicillin - Methylene chloride	Kgs					
6-APA (Aminopencillanic acid)	Kgs					
Triethyl Amine (6-APA)	Kgs					
Trimethylchlorosilane (TMCS)	Kgs					
N,N-dimethylaniline	Kgs					
DMA, HCl (Dimethylamine hydrochloride)	Kgs					
D-(-)-2-hydroxyphenylglycine chloride hydrochloride	Kgs					
NaCl (Sodium Chloride)	Kgs					
For Ibuprofen - Isobutyl Benzene	Kgs					
AlCl3	Kgs					
Acetal Chloride	Kgs					
Toluene	Kgs					
Zinc Octate	Kgs					
NaOH	Kgs					
Methyl dichloride	Kgs					

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Active Pharma Ingredients (API)

Annexure 7

WORKING CAPITAL Requirement Per Month

Raw Materials	UOM	Quantity	Rate	Amount	Qty p.a.	Qty per Batch
For Paracetamol - p-nitrophenol	Kgs					
Iron Powder	Kgs					
Acetic Acid	Kgs					
Methanol	Kgs					
Activated Carbon	Kgs					
Printed Packing Strips (include PVC Film, Aluminium Foil & Adhesives) each Strips App. Wt. 2 gms Size	Kgs					
Lab Chemicals Cost						
Consumable Store						
			TOTAL			

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Active Pharma Ingredients (API)

Annexure 8

[NPCS/5515/24212]

Overheads Required Per Month

(Amount in Rs.)

Utilities and Overheads	Quantity	Rate	Amount
Power Consumption			
Water Consumption			
Fuel Cost			
Insurance Professional fees			
Administration Expense			
Stationery Exp., Telephone, Postage			
Repairs and Maintanance			
Internet Expenses			
Conveyance Exp.			
Publicity Exp.			
		TOTAL	

Total load is 200 Kwatts

Utilities and Overheads	Quantity	Rate	Amount
Royalty and other charges			
Selling and Distribution expenses			
		TOTAL	

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Active Pharma Ingredients (API)

Annexure 9

Salary and Wages

[NPCS/5515/24212]

(Amount in Rs.)

Salary and Wages	UOM	Quantity	Rate	Amount
General Manager	Nos.			
AGM (Comm.)	Nos.			
Production, Engineering & Quality Control Manager	Nos.			
Chemical Engineers	Nos.			
Quality Control Supervisors	Nos.			
Production Supervisors	Nos.			
Skilled Workers	Nos.			
Electricians	Nos.			
Fitters	Nos.			
Unskilled Workers	Nos.			
Accountant	Nos.			
Computer Operators	Nos.			
Office Staffs	Nos.			
Sales Executives	Nos.			
Store Keeper	Nos.			
Peons	Nos.			
Security Officer	Nos.			
Security Guards	Nos.			
TOTAL BASIC SALARY				
Plus Perks (25% p.a. of Basis Salaries)				
Per Month			TOTAL	
Per Annum				

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Active Pharma Ingredients (API)

Annexure 10

[NPCS/5515/24212]

TURNOVER PER ANNUM

(Amount in Rs.)

Name of Product	UOM	Quantity	Rate	Amount
Metformin (500 mg & 850 mg)	Kgs			
Amoxicillin (500 mg)	Kgs			
Ibuprofen (500 mg)	Kgs			
Paracetamol (500 mg)	Kgs			
			TOTAL	

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Active Pharma Ingredients (API)

Annexure 11

[NPCS/5515/24212]

SHARE CAPITAL

(Rs. in Lakhs)

Share Capital (No. of Shares)	Face Value USD/ Share	Equity Share Capital		
30098				
Particulars	Existing	Existing	Proposed	Proposed
	%age		%age	
Equity Capital				
Preference Share Capital				
Total				

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Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 1

COST OF PROJECT AND MEANS OF FINANCE

(Rs. in Lakhs)

Particulars	Existing	Proposed	Total
COST OF PROJECT			
Land & Site Development Exp.			
Land Area Required			
Land Development Cost, Boundary Wall, Gate & Road etc.			
Buildings			
Factory Building -			
Office Buildings			
Plant & Machineries			
Indigenous Machineries			
Erection & Installation			
Laboratory Equipments			
Miscellaneous Equipmetns like pumps, valves, pipeline & fittings			
Imported Machineries			
Technical know how			
Office Vehicles			
Office Automation Equipments (Telephone/ Fax/ Computer)			
Office Equipment, Furniture plus Other Equipment & Accessories			
Other Misc. Assets			
Pre-operative & Preliminary Expenses			
Provision for Contingencies			
Total Capital Cost of Project			
Margin Money for Working Capital			
Total Cost of Project			
MEANS OF FINANCE			
Equity Share Capital			
Others - Preference Share Capital			
Total Equity Share Capital			
Long/Medium Term Borrowings			
FROM BANK			
From Other Financial Institutions			
Total Long/Medium Term Borrowings			
Total Means of Finance			

Active Pharma Ingredients (API)

ANNEXURE - 2

[NPCS/5515/24212]

PROFITABILITY AND NET CASH ACCRUALS

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
Revenue/Income/Realisation					
Gross Sales Realisation					
Less : Excise Duties/Levies					
Net Sales Realisation					
Total Revenue/Income/Realisation					
Expenses/Cost of Products/Services/Items					
Raw Material Cost					
Indigenous					
Total Nett Consumption					
Lab & ETP Chemical Cost					
Packing Material Cost					
Sub Total of Net Consumption					
Miscellaneous Cost					
Employees Expenses					
Fuel Expenses					
Power/Electricity Expenses					
Depreciation					
Royalty & Other Charges					
Repairs & Maintenance Exp.					
Other Mfg. Expenses					

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Active Pharma Ingredients (API)

ANNEXURE - 2

[NPCS/5515/24212]

PROFITABILITY AND NET CASH ACCRUALS

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
Cost of Output of Goods Sold					
Gross Profit					
Administration Expenses					
Technical Knowhow Fees & Exp.					
Financial Charges					
Long/Medium Term Borrowing					
On Wkg. Capital Borrowings					
Total Financial Charges					
Selling Expenses					
Total Cost of Sales					
Net Profit Before Taxes					
Tax on Profit					
Net Profit After Taxes					
Depreciation Added Back					
Technical Knowhow Fees & Exp.					
Net Cash Accruals					

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Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 3

ASSESSMENT OF WORKING CAPITAL REQUIREMENTS

(Rs. in Lakhs)

Particulars	Stk.Prđ.	Stk.Prđ.		Operating Years				
	1st Year	2nd Yr&+		1-2	2-3	3-4	4-5	5-6
Capacity	Months	Months	%					
CURRENT ASSETS								
Stocks on Hand								
Raw Material Cost								
Indigenous								
Lab & ETP Chemical								
Packing Material								
Miscellaneous Cost								
Work-in-Process								
Finished Goods								
Current Expenses								
Receivables								
Total								
Cash/Bank Balances								
Gross Wkg. Capital								

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Active Pharma Ingredients (API)

ANNEXURE - 3

[NPCS/5515/24212]

ASSESSMENT OF WORKING CAPITAL REQUIREMENTS

(Rs. in Lakhs)

Particulars	Stk.Prd. 1st Year	Stk.Prd. 2nd Yr&+		Operating Years				
				1-2	2-3	3-4	4-5	5-6
Capacity	Months	Months	%					
CURRENT LIABILITIES								
Sundry Creditors - Raw Material Cost								
Indigenous			M					
Lab & ETP Chemical			M					
Packing Material			M					
Miscellaneous Cost			M					
Current Expenses			M					
Other Current Liabilities			M					
Total								
Instalments Due Within Next 12 Months: Term Borrowings								
Total Current Liabilities								
Net Wkg.Capital(Tot.CA - Tot.CL)								
M.P.B.F. -Method I								
As Per Tandon Com.Norm-Method II - Permissible Finance - D.P.(%age)								
Work in Process %	0.65	DP						
Finished Goods %	0.70	DP						
Total Bank Finance(DP Method)								
Bank Finance(Turnover Method)								
Bank Finance : As per DP Method								
Margin Money : (At Commencement)								
Margin Money:(incl.Cash/Bk. Bal)								
% Margin Money - Net Wkg.Capital								
Current Ratio (No. of times)								

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Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 3

Working note for calculation of Work-in-process

Description of Product	% assumed for WIP Completion	Rate per unit in Rs.	Equivalent (%) Rate per unit in Rs.
For Metformin - Dicyanodiamide			
Dimethylammonium Chloride			
For Amoxicillin - Methylene chloride			
6-APA (Aminopencillanic acid)			
Triethyl Amine (6-APA)			
Trimethylchlorosilane (TMCS)			
N,N-dimethylaniline			
DMA, HCl (Dimethylamine hydrochloride)			
D-(-)-2-hydroxyphenylglycine chloride hydrochloride			
NaCl (Sodium Chloride)			
For Ibuprofen - Isobutyl Benzene			
AlCl ₃			
Acetal Chloride			
Toluene			
Zinc Octate			
NaOH			
Methyl dichloride			
For Paracetamol - p-nitrophenol			
Iron Powder			
Acetic Acid			

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Methanol			
Activated Carbon			

Active Pharma Ingredients (API)

ANNEXURE - 3

Working note for calculation of Work-in-process

Description of Product	% assumed for WIP Completion	Rate per unit in Rs.	Equivalent (%) Rate per unit in Rs.
Printed Packing Strips (include PVC Film, Aluminium Foil & Adhesives) each Strips App. Wt. 2 gms Size			
Lab Chemicals Cost			
Consumable Store			
Total			

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Active Pharma Ingredients (API)

ANNEXURE - 4

[NPCS/5515/24212]

SOURCES AND DISPOSITION OF FUNDS

(Rs. in Lakhs)

Particulars	Constr. Period	Operating Years				
		1-2	2-3	3-4	4-5	5-6
SOURCES OF FUNDS						
Net Profit Before Tax with Interest Charges Added Back but after Depreciation Provision						
Equity Share Capital						
Depreciation						
Incr.in Long/Medium Term Proposed-FROM BANK						
Incr.in Bank Borrowing for Working Capital						
Incr.in Cur.Liabilities						
Technical Knowhow Fees & Exp.						
Total Sources of Fund						
DISPOSITIONS OF FUNDS						
P & P Expenses						
Technical Knowhow Fees						
Incr.in Capital Expense						
Incr.in Current Assets						
Decr.in Long/Medium Term Proposed-FROM BANK						
Interest/Financial Exp.						
Taxes on Profit						
Total Disposition						
Opening Balance						
Net Surplus / Deficit						
Closing Balance						

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Active Pharma Ingredients (API)

ANNEXURE - 5
PROJECTED BALANCE SHEETS

[NPCS/5515/24212]

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
Equity Share Capital					
Surplus of Previous Year					
Add : Net Profit After Taxes					
Surplus at the End of Year					
Unsecured Deposits					
Long/Medium Term Borrowings Proposed-FROM BANK					
Bank Borrowing for Wkg. Capital					
Current Liabilities					
Sundry Creditors					
Other Current Liabilities					
Total Current Liabilities					
Total of Liabilities					

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Active Pharma Ingredients (API)

ANNEXURE - 5
PROJECTED BALANCE SHEETS

[NPCS/5515/24212]

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
A S S E T S					
Fixed Assets					
Gross Block					
Less : Depreciation to Date					
Net Block					
Current Assets					
Stocks on Hand					
Receivables					
Other Current Assets					
Cash and Bank Balances					
Total Current Assets					
P & P Exp. and/or Other Dvp.Exp.					
(To The Extent Not W/Off)					
Other Non Current Assets					
Total of Assets					
ROI (Average of Fixed Assets)					
RONW (Average of Share Capital)					
ROI (Average of Total Assets)					

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Active Pharma Ingredients (API)

ANNEXURE - 6

[NPCS/5515/24212]

PROFITABILITY RATIOS, DSCR, DEBT EQUITY, ETC.

(Rs. in Lakhs)

Particulars		Operating Years				
		1-2	2-3	3-4	4-5	5-6
Profit Percentages to Net Sales						
Gross Profit						
% Of G.P. to Net Sales						
Net Profit Before Taxes						
% of N.P.B.T. To Net Sales						
Net Profit After Taxes						
% of N.P.A.T. To Net Sales						
Debt Service Coverage Ratio						
Funds Available to Service Debts						
Net Profit After Taxes						
Depreciation Charges						
Technical Knowhow Fees & Exp						
Interest on Long/Medium Term						
T o t a l						
Debt Service Obligations						
Repayment of Long/Medium Ter						
Interest on Long/Medium Term						
T o t a l						
D. S. C. R. (Individual)						
D. S. C. R. (Cumulative)						
D. S. C. R. (Overall)
Parameters						
Initial Equity Capital						
Credit Balance in P & L						
Total Capital excl Unsec Deposits						
Unsecured Dep.						
Total Equity incl Unsecured Deposits						

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Active Pharma Ingredients (API)

ANNEXURE - 6

[NPCS/5515/24212]

PROFITABILITY RATIOS, DSCR, DEBT EQUITY, ETC.

(Rs. in Lakhs)

Particulars		Operating Years				
		1-2	2-3	3-4	4-5	5-6
Long/Medium Term Borrowings from Bank	902.95	722.36	541.77	361.18	180.59	0.00
Term lia. Incl Unsecured Deposit						
Total Liabilities						
Total Liabilities incl Unsecured Deposits						
DEBT EQUITY RATIO considering i.e.Total Term Lia./NW						
Unsecured Dep. as Equity						
Unsecured Dep. as Debt						
Total Outside Lia./NW						
Assets Turnover Ratio (x)						
No. of Shares of 10.00 each						
Earnings Per Share(EPS) (in USD)						
Proposed dividend						
Cash EPS (in Rs.)						
Dividend Per Share(DPS) (in Rs.)						
Payout Ratio (%Age)						
Retained Earnings/Share (in Rs.)						
Retained Earnings (%Age)						
Book Value Per Share (in Rs.)						
Debt Per Share (in Rs.)						
Probable Mkt.Price/Share(in Rs.)						
Price / Book Value (x)						
Price Earnings Ratio (x)						
Yield (%Age)						

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Active Pharma Ingredients (API)

ANNEXURE - 7 BREAK EVEN ANALYSIS

[NPCS/5515/24212]

(Rs. in Lakhs)

Particulars	Ratio	Operating Years				
		1-2	2-3	3-4	4-5	5-6
BREAK EVEN ANALYSIS						
Total Value of Output						
Variable Cost & Expenses						
Raw Material Cost						
Lab & ETP Chemical Cost						
Packing Material Cost						
Sales Commission/Exp.						
Sub-total						
Less:W.I.P. Adjustments						
Total Variable Cost						
Net Contribution						
Profit Volume Ratio (%)						
Semi-Var./Semi-Fixed Exp.						
Miscellaneous Cost						
Employees Expenses						
Power/Electricity Expen						
Fuel Expenses						
Royalty & Other Charges						

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Active Pharma Ingredients (API)

ANNEXURE - 7 BREAK EVEN ANALYSIS

[NPCS/5515/24212]

(Rs. in Lakhs)

Particulars	Ratio	Operating Years				
		1-2	2-3	3-4	4-5	5-6
Repairs & Maintenance E						
Other Mfg. Expenses						
Administration Expenses						
Selling Expenses						
Interest on Wkg.Capital						
Tot.Semi-Var./Fixed Exp.						
Fixed Expenses / Cost						
Miscellaneous Cost						
Employees Expenses						
Power/Electricity Expen						
Fuel Expenses						
Royalty & Other Charges						
Repairs & Maintenance E						
Other Mfg. Expenses						
Administration Expenses						
Selling Expenses						
Intrest-Fixed Borrowing						
Intrest-Working Capital						
Depreciation Charges						

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Active Pharma Ingredients (API)

ANNEXURE - 7
BREAK EVEN ANALYSIS

[NPCS/5515/24212]

(Rs. in Lakhs)

Particulars	Ratio	Operating Years				
		1-2	2-3	3-4	4-5	5-6
Deferred Expenses W/Off						
Total Fixed Expenses						
Tot.Fixed/Semi-Fixed Exp						
Tot.Cash Fixed/SemiFixed						
Cash Break Even Sales						
Cash Margin of Safety						
Break Even Sales						
Margin of safety						
At Maximum Utilisation :	Year					
(as % of Installed Capacity)						
Cash B.E.P. :	%					
B.E.P. :	%					

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Active Pharma Ingredients (API)

ANNEXURE - 8

[NPCS/5515/24212]

SENSITIVITY ANALYSIS - I

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
INCREASE IN SALES PRICES ::: By 2.00 %					
Resultant - Sale Value(Sales)					
Resultant - Gross Profit					
Resultant - N.P.B.T.					
Resultant - Tax on Profit					
Resultant - N.P.A.T.					
Resultant - Funds available					
As such - Debt Obligations					
Resultant - DSCR (Individual)					
Resultant - DSCR (Cumulative)					
Resultant - DSCR (Overall)
Resultant - Sale Value(Output)					
As such - Variable Cost					
Resultant - Nett Contribution					
Resultant - PV Ratio (%age)					
Resultant - Cash BEP Sales					
Resultant - Cash Margin of Safety					
Resultant - BEP Sales					
Resultant - Margin of safety					
Resultant - Cash BEP % (Yr. 5)	

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Active Pharma Ingredients (API)

ANNEXURE - 8

[NPCS/5515/24212]

SENSITIVITY ANALYSIS - I

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
Resultant - BEP %age (Yr. 5)	
Resultant - DEBT EQUITY RATIO					
- Unsecured Dep. as Equity					
- Unsecured Dep. as Debt					
Resultant - ROI (%age) (Based on Fixed Assets)					
Resultant - RONW (%age)					
DECREASE IN SALES PRICES ::: By 2.00 %					
Resultant - Sale Value(Sales)					
Resultant - Gross Profit					
Resultant - N.P.B.T.					
Resultant - Tax on Profit					
Resultant - N.P.A.T.					
Resultant - Funds Available					
As such - Debt Obligations					
Resultant - DSCR (Individual)					
Resultant - DSCR (Cumulative)					
Resultant - DSCR (Overall)

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Active Pharma Ingredients (API)

ANNEXURE - 8

[NPCS/5515/24212]

SENSITIVITY ANALYSIS - I

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
Resultant - Sale Value(Output)					
As such - Variable Cost					
Resultant - Nett Contribution					
Resultant - PV Ratio (%age)					
Resultant - Cash BEP Sales					
Resultant - BEP Sales					
Resultant - Cash Margin of Safety					
Resultant - Margin of Safety					
Resultant - Cash BEP % (Yr. 5)	*****	*****	*****	*****	
Resultant - BEP %age (Yr. 5)	*****	*****	*****	*****	
Resultant - DEBT EQUITY RATIO					
- Unsecured Dep. as Equity					
- Unsecured Dep. as Debt					
Resultant - ROI (%age)					
Resultant - RONW (%age)					

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Active Pharma Ingredients (API)

ANNEXURE - 9
SENSITIVITY ANALYSIS - II

[NPCS/5515/24212]

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
INCREASE IN SALES PRICES ::: By 5.00 %					
Resultant - Sale Value(Sales)					
Resultant - Gross Profit					
Resultant - N.P.B.T.					
Resultant - Tax on Profit					
Resultant - N.P.A.T.					
Resultant - Funds available					
As such - Debt Obligations					
Resultant - DSCR (Individual)					
Resultant - DSCR (Cumulative)					
Resultant - DSCR (Overall)
Resultant - Sale Value(Output)					
As such - Variable Cost					
Resultant - Nett Contribution					
Resultant - PV Ratio (%age)					
Resultant - Cash BEP Sales					
Resultant - BEP Sales					
Resultant - Cash Margin of Safety					
Resultant - Margin of Safety					
Resultant - Cash BEP % (Yr. 5)	

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Active Pharma Ingredients (API)

ANNEXURE - 9
SENSITIVITY ANALYSIS - II

[NPCS/5515/24212]

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
Resultant - BEP %age (Yr. 5)	
Resultant - DEBT EQUITY RATIO					
- Unsecured Dep. as Equity					
- Unsecured Dep. as Debt					
Resultant - ROI (%age)					
Resultant - RONW (%age)					
DECREASE IN SALES PRICES ::: By 5.00 %					
Resultant - Sale Value(Sales)					
Resultant - Gross Profit					
Resultant - N.P.B.T.					
Resultant - Tax on Profit					
Resultant - N.P.A.T.					
Resultant - Funds Available					
As such - Debt Obligations					
Resultant - DSCR (Individual)					
Resultant - DSCR (Cumulative)					
Resultant - DSCR (Overall)

Active Pharma Ingredients (API)

ANNEXURE - 9
SENSITIVITY ANALYSIS - II

[NPCS/5515/24212]

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
Resultant - Sale Value(Output)					
As such - Variable Cost					
Resultant - Nett Contribution					
Resultant - PV Ratio (%age)					
Resultant - Cash BEP Sales					
Resultant - BEP Sales					
Resultant - Cash Margin of Safety					
Resultant - Margin of Safety					
Resultant - Cash BEP % (Yr. 5)	
Resultant - BEP %age (Yr. 5)	
Resultant - DEBT EQUITY RATIO					
- Unsecured Dep. as Equity					
- Unsecured Dep. as Debt					
Resultant - ROI (%age)					
Resultant - RONW (%age)					

Active Pharma Ingredients (API)

ANNEXURE - 10
SENSITIVITY ANALYSIS - III

[NPCS/5515/24212]

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
INCREASE IN MAIN MATERIAL PRICES :: By 2.00 %					
Resultant - Main Material Amt					
Resultant - Gross Profit					
Resultant - N.P.B.T.					
Resultant - Tax on Profit					
Resultant - N.P.A.T.					
Resultant - Funds available					
As such - Debt Obligations					
Resultant - DSCR (Individual)					
Resultant - DSCR (cumulative)					
Resultant - DSCR (overall)
As such - Sale Value(Output)					
Resultant - Variable Cost					
Resultant - Nett Contribution					
Resultant - PV Ratio (%age)					
Resultant - Cash BEP Sales					
Resultant - BEP Sales					
Resultant - Cash Margin of Safety					

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Active Pharma Ingredients (API)

ANNEXURE - 10
SENSITIVITY ANALYSIS - III

[NPCS/5515/24212]

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
Resultant - Margin of Safety					
Resultant - Cash BEP % (Yr. 5)	
Resultant - BEP %age (Yr. 5)	
Resultant - DEBT EQUITY RATIO					
- Unsecured Dep. as Equity					
- Unsecured Dep. as Debt					
Resultant - ROI (%age)					
Resultant - RONW (%age)					
DECREASE IN MAIN MATERIAL PRICES ::: By 2.00 %					
Resultant - Main Material Amt					
Resultant - Gross Profit					
Resultant - N.P.B.T.					
Resultant - Tax on Profit					
Resultant - N.P.A.T.					
Resultant - Funds available					
As such - Debt Obligations					
Resultant - DSCR (Individual)					

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Active Pharma Ingredients (API)

ANNEXURE - 10
SENSITIVITY ANALYSIS - III

[NPCS/5515/24212]

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
Resultant - DSCR (cumulative)					
Resultant - DSCR (overall)
As such - Sale Value(Output)					
Resultant - Variable Cost					
Resultant - Nett Contribution					
Resultant - PV Ratio (%age)					
Resultant - Cash BEP Sales					
Resultant - BEP Sales					
Resultant - Cash Margin of Safety					
Resultant - Margin of Safety					
Resultant - Cash BEP % (Yr. 5)	
Resultant - BEP %age (Yr. 5)	
Resultant - DEBT EQUITY RATIO					
- Unsecured Dep. as Equity					
- Unsecured Dep. as Debt					
Resultant - ROI (%age)					
Resultant - RONW (%age)					

Prepared by “Niir Project Consultancy Services”

Active Pharma Ingredients (API)

ANNEXURE - 11
SENSITIVITY ANALYSIS - IV

[NPCS/5515/24212]

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
INCREASE IN MAIN MATERIAL PRICES :: By 5.00 %					
Resultant - Main Material Amt					
Resultant - Gross Profit					
Resultant - N.P.B.T.					
Resultant - Tax on Profit					
Resultant - N.P.A.T.					
Resultant - Funds available					
As such - Debt Obligations					
Resultant - DSCR (Individual)					
Resultant - DSCR (Cumulative)					
Resultant - DSCR (Overall)]
As such - Sale Value(Output)					
Resultant - Variable Cost					
Resultant - Nett Contribution					
Resultant - PV Ratio (%age)					
Resultant - Cash BEP Sales					
Resultant - BEP Sales					

Prepared by “Niir Project Consultancy Services”

Active Pharma Ingredients (API)

ANNEXURE - 11
SENSITIVITY ANALYSIS - IV

[NPCS/5515/24212]

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
Resultant - Cash Margin of Safety					
Resultant - Margin of Safety					
Resultant - Cash BEP % (Yr. 5)	*****	*****	*****	*****	
Resultant - BEP %age (Yr. 5)	*****	*****	*****	*****	
Resultant - DEBT EQUITY RATIO					
- Unsecured Dep. as Equity					
- Unsecured Dep. as Debt					
Resultant - ROI (%age)					
Resultant - RONW (%age)					
DECREASE IN MAIN MATERIAL PRICES ::: By 5.00 %					
Resultant - Main Material Amt					
Resultant - Gross Profit					
Resultant - N.P.B.T.					
Resultant - Tax on Profit					
Resultant - N.P.A.T.					
Resultant - Funds Available					
As such - Debt Obligations					

Prepared by "Niir Project Consultancy Services"

Active Pharma Ingredients (API)

ANNEXURE - 11
SENSITIVITY ANALYSIS - IV

[NPCS/5515/24212]

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
Resultant - DSCR (Individual)					
Resultant - DSCR (Cumulative)					
Resultant - DSCR (overall)
As such - Sale Value(Output)					
Resultant - Variable Cost					
Resultant - Nett Contribution					
Resultant - PV Ratio (%age)					
Resultant - Cash BEP Sales					
Resultant - BEP Sales					
Resultant - Cash Margin of Safety					
Resultant - Margin of Safety					
Resultant - Cash BEP % (Yr. 5)	
Resultant - BEP %age (Yr. 5)	
Resultant - DEBT EQUITY RATIO					
- Unsecured Dep. as Equity					
- Unsecured Dep. as Debt					
Resultant - ROI (%age)					
Resultant - RONW (%age)					

Prepared by “Niir Project Consultancy Services”

Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 12
SHAREHOLDING PATTERN AND STAKE STATUS

(Rs. in Lakhs)

Shares	Face Value USD/ Share	Share Capital				
30098	10.00	300.98				
Particulars	Existing	Existing	Proposed	Proposed	Total	Total
	%age		%age		%age	
Capital						
Share Premium						
Total						

Active Pharma Ingredients (API)

ANNEXURE - 13

[NPCS/5515/24212]

QUANTITATIVE DETAILS OF OUTPUT, SALES AND STOCKS

Particulars	UOM	Operating Years				
		1 - 2	2 - 3	3 - 4	4 - 5	5 - 6
Determined Capacity P.A of Products/Services	.					
Metformin (500 mg & 850 mg)	Kgs					
Amoxicillin (500 mg)	Kgs					
Ibuprofen (500 mg)	Kgs					
Paracetamol (500 mg)	Kgs					
Achievable Efficiency/Yield % of Products/Services/Items						
Metformin (500 mg & 850 mg)	%					
Amoxicillin (500 mg)	%					
Ibuprofen (500 mg)	%					
Paracetamol (500 mg)	%					
Net Usable Load/Capacity of Products/Services/Items						
Metformin (500 mg & 850 mg)	Kgs					
Amoxicillin (500 mg)	Kgs					
Ibuprofen (500 mg)	Kgs					
Paracetamol (500 mg)	Kgs					
No of Shifts Wkg./Day						
No of Working Days/Year						

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Active Pharma Ingredients (API)

ANNEXURE - 13

[NPCS/5515/24212]

QUANTITATIVE DETAILS OF OUTPUT, SALES AND STOCKS

Particulars	UOM	Operating Years				
		1 - 2	2 - 3	3 - 4	4 - 5	5 - 6
Expected Usage/Utilisation of Achievable Load/Capacity (%)						
Metformin (500 mg & 850 mg)	%					
Amoxicillin (500 mg)	%					
Ibuprofen (500 mg)	%					
Paracetamol (500 mg)	%					
Expected Usage/Output						
Metformin (500 mg & 850 mg)	Kgs					
Amoxicillin (500 mg)	Kgs					
Ibuprofen (500 mg)	Kgs					
Paracetamol (500 mg)	Kgs					
Total						
Expected Sales/ Revenue/ Income of Products/ Services/ Items						
Metformin (500 mg & 850 mg)	Kgs					
Amoxicillin (500 mg)	Kgs					
Ibuprofen (500 mg)	Kgs					
Paracetamol (500 mg)	Kgs					

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Active Pharma Ingredients (API)

ANNEXURE - 14

[NPCS/5515/24212]

PRODUCT-WISE DOMESTIC SALES REALISATION

(Rs. in Lakhs)

Operating Year	UOM	Quantity	Rate	Sales
Description of Product				
1-2				
Metformin (500 mg & 850 mg)	Kgs			
Amoxicillin (500 mg)	Kgs			
Ibuprofen (500 mg)	Kgs			
Paracetamol (500 mg)	Kgs			
Year Totals ::				
2-3				
Metformin (500 mg & 850 mg)	Kgs			
Amoxicillin (500 mg)	Kgs			
Ibuprofen (500 mg)	Kgs			
Paracetamol (500 mg)	Kgs			
Year Totals ::				
3-4				
Metformin (500 mg & 850 mg)	Kgs			
Amoxicillin (500 mg)	Kgs			
Ibuprofen (500 mg)	Kgs			
Paracetamol (500 mg)	Kgs			
Year Totals ::				
4-5				
Metformin (500 mg & 850 mg)	Kgs			
Amoxicillin (500 mg)	Kgs			
Ibuprofen (500 mg)	Kgs			
Paracetamol (500 mg)	Kgs			
Year Totals ::				
5-6				
Metformin (500 mg & 850 mg)	Kgs			
Amoxicillin (500 mg)	Kgs			
Ibuprofen (500 mg)	Kgs			
Paracetamol (500 mg)	Kgs			
Year Totals ::				

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Active Pharma Ingredients (API)

ANNEXURE - 15

[NPCS/5515/24212]

TOTAL RAW MATERIAL COST

(Rs. in Lakhs)

Operating Year / Description of Product	UOM	Output Quantity	Adj. for WIP Stks	Total Quantity	Cost Per Unit	Material Type I	Material Type II	Total
1-2								
Metformin (500 mg & 850 mg)	Kgs							
Amoxicillin (500 mg)	Kgs							
Ibuprofen (500 mg)	Kgs							
Paracetamol (500 mg)	Kgs							
Total Raw Mat.Requirement								
2-3								
Metformin (500 mg & 850 mg)	Kgs							
Amoxicillin (500 mg)	Kgs							
Ibuprofen (500 mg)	Kgs							
Paracetamol (500 mg)	Kgs							
Total Raw Mat.Requirement								
3-4								
Metformin (500 mg & 850 mg)	Kgs							
Amoxicillin (500 mg)	Kgs							
Ibuprofen (500 mg)	Kgs							
Paracetamol (500 mg)	Kgs							
Total Raw Mat.Requirement								
4-5								
Metformin (500 mg & 850 mg)	Kgs							

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Active Pharma Ingredients (API)

ANNEXURE - 15

[NPCS/5515/24212]

TOTAL RAW MATERIAL COST

(Rs. in Lakhs)

Operating Year / Description of Product	UOM	Output Quantity	Adj. for WIP Stks	Total Quantity	Cost Per Unit	Material Type I	Material Type II	Total
Amoxicillin (500 mg)	Kgs							
Ibuprofen (500 mg)	Kgs							
Paracetamol (500 mg)	Kgs							
Total Raw Mat.Requirement								
5-6								
Metformin (500 mg & 850 mg)	Kgs							
Amoxicillin (500 mg)	Kgs							
Ibuprofen (500 mg)	Kgs							
Paracetamol (500 mg)	Kgs							
Total Raw Mat.Requirement								

Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 16

RAW MATERIAL COST PER UNIT

(Amount in Rs.)

Description of Product / Description of Raw-Material	UOM	Qty.Per Batch	Losses %age	Total Quantity	Rate Per Unit	Total	Batch Qty of Output	Amount Per Unit
Active Pharma Ingredients (API)								
For Metformin - Dicyanodiamide	Kgs							
Dimethylammonium Chloride	Kgs							
For Amoxicillin - Methylene chloride	Kgs							
6-APA (Aminopencillanic acid)	Kgs							
Triethyl Amine (6-APA)	Kgs							
Trimethylchlorosilane (TMCS)	Kgs							
N,N-dimethylaniline	Kgs							
DMA, HCl (Dimethylamine hydrochloride)	Kgs							
D-(-)-2-hydroxyphenylglycine chloride hydrochloride	Kgs							
NaCl (Sodium Chloride)	Kgs							
For Ibuprofen - Isobutyl Benzene	Kgs							
AlCl ₃	Kgs							
Acetal Chloride	Kgs							
Toluene	Kgs							
Zinc Octate	Kgs							
NaOH	Kgs							
Methyl dichloride	Kgs							
For Paracetamol - p-nitrophenol	Kgs							
Iron Powder	Kgs							
Acetic Acid	Kgs							

Active Pharma Ingredients (API)

Methanol	Kgs							
Activated Carbon	Kgs							
Sub Totals								
Add Loss/Wastage @ 0.00%	0.00%							
Totals (Indigenous)								

Active Pharma Ingredients (API)

ANNEXURE - 17

[NPCS/5515/24212]

TOTAL LAB & ETP CHEMICALS COST

(Rs. in Lakhs)

Operating Year / Description of Product	UOM	Output Quantity	Adj. for WIP Stks	Total Quantity	Cost Per Unit	Total
1-2						
Lab Chemicals Cost						
Year Total::						
2-3						
Lab Chemicals Cost						
Year Total::						
3-4						
Lab Chemicals Cost						
Year Total::						
4-5						
Lab Chemicals Cost						
Year Total::						
5-6						
Lab Chemicals Cost						
Year Total::						

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Active Pharma Ingredients (API)

ANNEXURE - 18

[NPCS/5515/24212]

CONSUMABLES, STORES AND SPARES EXPENSES

(Rs. in Lakhs)

Operating Year / Description of Product	UOM	Output Quantity	Adj. for WIP Stks	Total Quantity	Cost Per Unit	Total
1-2						
Consumable Store						
Year Total::						
2-3						
Consumable Store						
Year Total::						
3-4						
Consumable Store						
Year Total::						
4-5						
Consumable Store						
Year Total::						
5-6						
Consumable Store						
Year Total::						

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Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 19

TOTAL PACKING MATERIAL COST

(Rs. in Lakhs)

Operating Year / Description of Product	UOM	Output Quantity	Adj. for WIP Stks	Total Quantity	Cost Per Unit	Total
1-2						
Active Pharma Ingredients (API)	Kgs					
Year Total::						
2-3						
Active Pharma Ingredients (API)	Kgs					
Year Total::						
3-4						
Active Pharma Ingredients (API)	Kgs					
Year Total::						
4-5						
Active Pharma Ingredients (API)	Kgs					
Year Total::						
5-6						
Active Pharma Ingredients (API)	Kgs					
Year Total::						

Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 20

PACKING MATERIAL COST PER UNIT

(Amount in Rs.)

Description of Product / Description of Packing Material	UOM	Qty.Per Batch	Losses %age	Total Quantity	Rate Per Unit	Total	Batch Qty of Output	Amount Per Unit
Active Pharma Ingredients (API)								
Printed Packing Strips (include PVC Film, Aluminium Foil & Adhesives) each Strips App. Wt. 2 gms Size	Kgs							
Sub Total								
Add Loss/Wastage @ 0.00 %								
Product Total								

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Active Pharma Ingredients (API)

ANNEXURE - 21
EMPLOYEES EXPENSES

[NPCS/5515/24212]

(Rs. in Lakhs)

Placement / Designation	Dept./ Category	Starting Year	Starting Month	No.of Persons	Pay Per Month	Total Per Annum
Factory Personnel						
As Applicable from Year 1						
General Manager						
AGM (Comm.)						
Production, Engineering & Quality Control Manager						
Chemical Engineers						
Quality Control Supervisors						
Production Supervisors						
Skilled Workers						
Electricians						
Fitters						
Unskilled Workers						
Accountant						
Computer Operators						
Office Staffs						
Sales Executives						
Store Keeper						
Peons						
Security Officer						

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Active Pharma Ingredients (API)

ANNEXURE - 21
EMPLOYEES EXPENSES

[NPCS/5515/24212]

(Rs. in Lakhs)

Placement / Designation	Dept./ Category	Starting Year	Starting Month	No.of Persons	Pay Per Month	Total Per Annum
Security Guards						
TOTAL						
Welfare Expenses						
Year Total						
Total (Factory)						
Grand Total						

EMPLOYEES EXPENSES

Operating Year	%age Increase	Total
1-2		
2-3		
3-4		
4-5		
5-6		

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Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 22 FUEL EXPENSES

(Rs. in Lakhs)

Operating Year	%age Increase	Total
1-2		
2-3		
3-4		
4-5		
5-6		

Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 23

POWER/ELECTRICITY EXPENSES

(Rs. in Lakhs)

Operating Year	%age Increase	Total
1-2		
2-3		
3-4		
4-5		
5-6		

Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 24

ROYALTY AND OTHER CHARGES

(Rs. in Lakhs)

Operating Year	%age Increase	Total
1-2		
2-3		
3-4		
4-5		
5-6		

Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 25

REPAIRS AND MAINTENANCE EXPENSES

(Rs. in Lakhs)

Particulars	%age to Assets Value	Total
Buildings		
-Factory Building		
-Office Building		
Plant & Machineries		
-Imported Machineries		
-Indigenous Machineries		
-Maintenance Equipments		
-Laboratory Equipments		
-Miscellaneous Machines		
-Foundation, Installati		
-Motor Vehicles		
-Office Automation Equi		
-Furniture & Fixtures		
TOTAL		

Operating Year	% Increase	Total
1-2		
2-3		
3-4		
4-5		
5-6		

Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 26

OTHER MANUFACTURING EXPENSES

(Rs. in Lakhs)

Particulars	Total
Insurance Professional fees	
Water Exp.	
T o t a l	

Operating Year	% Increase	Total
1-2		5.47
2-3		
3-4		
4-5		
5-6		

Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 27

ADMINISTRATIVE AND GENERAL EXPENSES

(Rs. in Lakhs)

Particulars	Total
Administration Expense	
Stationery Exp., Telephone, Postage	
Repairs and Maintenance	
Internet Expenses	
Conveyance Exp.	
Publicity Exp.	
Total	

Operating Year	% Increase	Total	Misc	Total
1-2				
2-3				
3-4				
4-5				
5-6				

Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 28

SELLING AND DISTRIBUTION EXPENSES

(Rs. in Lakhs)

Operating Year	% Increase	Total
1-2		1.00
2-3		
3-4		
4-5		
5-6		

Active Pharma Ingredients (API)

ANNEXURE - 29

[NPCS/5515/24212]

DEPRECIATION CHARGES AS PER BOOKS (TOTAL)

(Rs. in Lakhs)

Operating Year	F.Assets Type A-1	F.Assets Type A-2	F.Assets Type B	F.Assets Type C	F.Assets Type D-1	F.Assets Type D-2	Total
Particulars	Factory Building -	Office Buildings	PLANT & MACHINERY	Office Vehicles	Office Automation Equipments (Telephone/ Fax/ Computer)	Furniture & Fixtures	
1-2							
2-3							
3-4							
4-5							
5-6							

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Active Pharma Ingredients (API)

ANNEXURE - 29

[NPCS/5515/24212]

DEPRECIATION CHARGES AS PER BOOKS (TOTAL)

(Rs. in Lakhs)

Particulars	Method	Deprn.Rate	Part Consideration (for Asset put to use less than 6 months)
Type A :: Buildings			
Factory Building -	WDV		
Office Buildings	WDV		
Type C			
Office Vehicles	WDV		
Type D :: Misc. Fixed Assets			
Equipments (Telephone/ Fax/ Computer)	WDV		
Furniture & Fixtures	WDV		
Type B :: Plant & Machineries (All calculation are given in Annexure 30)			

Contingencies, Pre-operative Expenses and Capital WIP are capitalised as under (Rs. in Lakhs)

Description	P & P Expenses	Contingencies	Capital WIP	Total
Factory Building -				
Office Buildings				
Total				

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Active Pharma Ingredients (API)

ANNEXURE - 30

[NPCS/5515/24212]

DEPRECIATION CHARGES AS PER BOOKS (P&M)

(Rs. in Lakhs)

Operating Year	F.Assets Type B-1	F.Assets Type B-2	F.Assets Type B-3	F.Assets Type B-4	F.Assets Type B-5	F.Assets Type B-6	Total
PLANT & MACHINERY	Imported Machinerie s	Indigenous Machinerie s	Erection & Installation	Laboratory Equipments	Miscellaneous Equipmetns like pumps, valves, pipeline & fittings	Maintenance Equipments	
1-2							
2-3							
3-4							
4-5							
5-6							

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Active Pharma Ingredients (API)

ANNEXURE - 30

[NPCS/5515/24212]

DEPRECIATION CHARGES AS PER BOOKS (P&M)

(Rs. in Lakhs)

Particulars	Method	Dep.Rate	Part Consideration, if any
Imported Machineries	WDV		
Indigenous Machineries	WDV		
Erection & Installation	WDV		
Laboratory Equipments	WDV		
Miscellaneous Equipmetns like pumps, valves, pipeline & fittings	WDV		
Maintenance Equipments	WDV		

Contingencies, Pre-operative Expenses and Capital WIP are capitalised as under

(Rs. in Lakhs)

Description	P & P Expenses	Contingencies	Capital WIP	Total
Imported Machineries				
Indigenous Machineries				
Erection & Installation				
Laboratory Equipments				
Miscellaneous Equipmetns like pumps, valves, pipeline & fittings				
Maintenance Equipments				
Total				

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Active Pharma Ingredients (API)

ANNEXURE - 31

[NPCS/5515/24212]

DEPRECIATION CHARGES AS PER INCOME TAX ACT (WDV) (TOTAL)

(Rs. in Lakhs)

Operating Year	F.Assets Type A-1	F.Assets Type A-2	F.Assets Type B	F.Assets Type C	F.Assets Type D-1	F.Assets Type D-2	Total
Particulars	Factory Building -	Office Buildings	PLANT & MACHINERY	Office Vehicles	Office Automation Equipments (Telephone/ Fax/ Computer)	Furniture & Fixtures	
1-2							
							111.96
2-3							
							87.04
3-4							
							68.04
4-5							
							53.52
5-6							
							42.38

Depreciation hereinabove is calculated as per WDV at rates prescribed under I.T.Act

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Active Pharma Ingredients (API)

ANNEXURE - 31

[NPCS/5515/24212]

DEPRECIATION CHARGES AS PER INCOME TAX ACT (WDV) (TOTAL)

Particulars	Method	Dep.Rate	Part Consideration (for Asset put to use less than 6 months)
Type A :: Buildings			
Factory Building	WDV		
Office Building	WDV	0.10	0.50
Type C			
Motor Vehicles	WDV		
Type D :: Misc. Fixed Assets			
Office Automation Equipments	WDV		
Furniture & Fixtures	WDV		

Type B :: Plant & Machineries(All calculation are given in Annexure 32)

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Active Pharma Ingredients (API)

ANNEXURE - 32

[NPCS/5515/24212]

DEPRECIATION CHARGES AS PER INCOME TAX ACT(WDV) (P&M)

(Rs. in Lakhs)

Operating Year	F.Assets Type B-1	F.Assets Type B-2	F.Assets Type B-3	F.Assets Type B-4	F.Assets Type B-5	F.Assets Type B-6	Total
PLANT & MACHINERY	Imported Machineries	Indigenous Machineries	Erection & Installation	Laboratory Equipments	Miscellaneous Equipmetns like pumps, valves, pipeline & fittings	Maintenance Equipments	
1-2							
2-3							
3-4							
4-5							
5-6							

Depreciation hereinabove is calculated as per WDV at rates prescribed under I.T.Act

(Rs. in Lakhs)

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Active Pharma Ingredients (API)

ANNEXURE - 32

[NPCS/5515/24212]

DEPRECIATION CHARGES AS PER INCOME TAX ACT(WDV) (P&M)

Particulars	Method	Dep.Rate	Part Consideration, if any
Imported Machineries	WDV		
Indigenous Machineries	WDV		
Maintenance Equipments	WDV		
Laboratory Equipments	WDV		
Miscellaneous Equipments	WDV		
Foundation, Installation etc.	WDV		

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Active Pharma Ingredients (API)

ANNEXURE - 33

[NPCS/5515/24212]

INTEREST AND REPAYMENT ON TERM LOANS

(Rs. in Lakhs)

A	Name of Institution-Bank	ABC BANK	
B	Term Borrowing Amount		Thousand
C	Repayment Term (Years)		Years
D	Repayment Instalments		Instalments
E	Repayment Commencement		
F	Rate of Interest(General)		p.a.
F	Rate of Interest(Initial)		p.a.
G	Apply Gen. Int. Rate from Year		
H	Interest Calculation		

Operating Year	Period Ended	Repayment	Outstanding	Interest
	Quarter Ended			
1-2				
	TOTAL :			
2-3				
	TOTAL :			
3-4				
	TOTAL :			
4-5				
	TOTAL :			
5-6				
	TOTAL :			
Total Loan amount				

Note : Repayment is considered as being made at the end of the period

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Active Pharma Ingredients (API)

[NPCS/5515/24212]

ANNEXURE - 34 TAX ON PROFITS

(Rs. in Lakhs)

Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
Net Profit Before Taxes					
Adjustments to NPBT					
Add : Depreciation as provided					
Less : Depreciation as per IT					
Recomputed NPBT					
Taxable Profits					
(%)					
Tax on Profits					

Active Pharma Ingredients (API)

ANNEXURE - 35

[NPCS/5515/24212]

PROJECTED PAY-BACK PERIOD AND IRR

(Rs. in Lakhs)

Particulars	Operating Years					Total
	1-2	2-3	3-4	4-5	5-6	
IN-FLOW of Funds						
Net Profit After Taxes						
Added Back						
Depreciation Charges						
P & P Expenses W/off						
Interest Charges						
Revenue Inflow of Funds						
Residual Value-M/Money						
Total Inflow of Funds						
OUT-FLOW of Funds						
Capital Out-flow of Funds						

(Rs. in Lakhs)

Projected Pay Back Period					
Particulars	Operating Years				
	1-2	2-3	3-4	4-5	5-6
Year	1	2	3	4	5
Initial Investment					
Total Initial Investment					
Yearly Cash Flow					
Accumulated Cash Flow					
Pay Back Period					

Active Pharma Ingredients (API)

ANNEXURE - 35

[NPCS/5515/24212]

PROJECTED PAY-BACK PERIOD AND IRR

(Rs. in Lakhs)

Projected IRR			
Year	CFAT	PV factor @15%	0.15
Initial Investment			
1-2			
2-3			
3-4			
4-5			
5-6			
Total PV			
IRR			

Active Pharma Ingredients (API)

[NPCS/5515/24212]

PROJECT AT A GLANCE

(Rs. in Lakhs)

COST OF PROJECT				MEANS OF FINANCE			
Particulars	Existing	Proposed	Total	Particulars	Existing	Proposed	Total
Land & Site Development Exp.				Capital			
Buildings				Share Premium			
Plant & Machineries				Other Type Share Capital			
Motor Vehicles				Reserves & Surplus			
Office Automation Equipments				Cash Subsidy			
Technical Knowhow Fees & Exp.				Internal Cash Accruals			
Franchise & Other Deposits				Long/Medium Term Borrowings			
Preliminary& Pre-operative Exp				Debentures / Bonds			
Provision for Contingencies				Unsecured Loans/Deposits			
Margin Money - Working Capital							
TOTAL				TOTAL			

Active Pharma Ingredients (API)

PROJECT AT A GLANCE

[NPCS/5515/24212]

Year	Annualised		Book Value	Debt	Dividend	Retained Earnings		Payout	Probable Market Price	P/E Ratio	Yield Price/ Book Value
	EPS	CEPS	Per Share		Per Share	Per Share				No.of Times	
	Rs.	Rs.	Rs.	Rs.	Rs.	%	Rs.	%	Rs.		%
1-2											
2-3											
3-4											
4-5											
5-6											

Year	D. S. C. R.			Debt / - Deposits Debt	Equity as- Equity	Total Net Worth	Return on Net Worth	Profitability Ratio					Assets Turnover Ratio	Current Ratio
	Individual	Cumulative	Overall					GPM	PBT	PAT	Net Contribution	P/V Ratio		
	(Number of times)			(Number of times)		%	%	%	%	%		%		
Initial				3.00	3.00									
1-2														
2-3														
3-4														
4-5														
5-6														

Active Pharma Ingredients (API)

PROJECT AT A GLANCE

[NPCS/5515/24212]

BEP	
BEP - Maximum Utilisation Year	
Cash BEP (% of Installed Capacity)	
Total BEP (% of Installed Capacity)	
IRR, PAYBACK and FACR	
Internal Rate of Return .. (In %age)	
Payback Period of the Project is (In Years)	
Fixed Assets Coverage Ratio (No. of times)	