

Pharmaceutical Pellets and Granules –

***Manufacturing Plant Detailed Project
Report, Profile, Business Plan, Industry
Trends, Market Research, Survey,
Manufacturing Process, Machinery, Raw
Materials, Feasibility Study, Investment
Opportunities, Cost And Revenue***

Introduction

The word “Pellet” has been used to describe a variety of systematically produced, geometrically defined agglomerates obtained from diverse starting materials utilizing different processing conditions. Pellets range in size, typically, between 0.5 – 1.5 mm, though other sizes could be prepared. Pellets are for pharmaceutical purposes and are produced primarily for the purpose of oral controlled-release dosage forms having gastro resistant or sustained-release properties or the capability of site-specific drug delivery. For such purposes, coated pellets are administered in the form of hard gelatin capsules or disintegrating tablets that quickly liberate their contents of pellets in the stomach. As drug-delivery systems become more sophisticated, the role of pellets in the design and development of dosage forms is increasing.

Formulation of drugs in multiple-unit dosage forms, such as coated pellets filled in capsules or compressed into tablets, offers flexibility as to target-release properties. The safety and efficacy of the formulation is higher than that of other dosage forms. Solid dosage formulation and design usually involves a series of compromises, since producing the desired properties frequently involves competing objectives. The correct selection and balance of excipients materials and processes in a solid dosage formulation, to achieve the desired response is not in practice easy to achieve. Pellets are of a great interest to the pharmaceutical industry for a variety of reasons. Pelletized products not only offer flexibility in dosage form design and development, but are also utilized to improve the safety and efficiency of bioactive agents. Pellets range in size, between 0.5 to 1.5.

USES & APPLICATION

Pellets/ granules may have varied applications in varied industries. It just requires an innovative bend to use it to derive maximum profitability. The smooth surface & the uniform size of the pellets allow uniform coating not only for each pellet but also from batch to batch. Highlighted below are some of the few instances where smooth surfaced uniform pellets are being successfully used: Improved appearance of the products. Coating of pellets can be done with different drugs to enable a controlled release rate. In case of immediate Release Products larger surface area of pellets enables better distribution. Chemically incompatible products can be formed into pellets & delivered in a single dose by encapsulating them.

In the chemical industries it is used to avoid powder dusting. Varied applications are possible in the pellet form. Eg: sustained release. Pellets ensure improved flow properties, and flexibility in formulation development and manufacture. The coating material may be colored with a dye material so that the beads of different coating thickness will be darker in color and distinguishable from those having fewer coats. The beads or granules of different thickness of coatings are blended in the desired proportions to give the desired effect. The thickness of the coat on the pellets dictates the rate at which the drug/ contents are released from the coated particles. A smooth surface of the pellets & uniform coating thickness for each pellet. By selecting the proper formulation, processing conditions and processing equipment it is possible to attain smooth surfaced & uniform pellets. The most common advantages of pelletization are:

Improved appearance of the product and the core is pharmaceutically elegant. Pelletization offers flexibility in dosage form design and development, Pellets are less susceptible to dose dumping, It reduces localized concentration of irritative drugs, It improves safety and efficacy of a drug, Pellets offer reduced variation in gastric emptying rate and transit time, Pellets disperse freely in G.I.T. and invariably maximize drug absorption and also reduce peak plasma fluctuation, Pellets ensure improved flow properties in formulation development.

MARKET SURVEY

The Indian pharmaceutical industry is the fourth largest in the world in terms of volume of output and thirteenth in domestic demand. However, the Indian industry, valued at USD 17 bn in represented just over 1% of the global pharmaceutical industry (USD 1700 bn) in value terms. The domestic market is estimated at Rs 680 bn. According to the Federation of Indian Chambers of Commerce and Industry (FICCI), another apex industry association, there are some 6,000 firms engaged in the sector. In terms of revenue generation, there are 100 big companies (including subsidiaries of MNCs) each with sales of at least USD 650,000, 200 medium size companies with sales ranging between USD 210,400 and USD 650,000; and 5700 small companies with sales of less than USD 210,400.

Because many of these companies focus on producing similar generic or same drugs, the industry is characterized by fierce competition and high volumes, razor-thin profit margins, overcapacity, and declining prices. The growth has been driven by many factors, such as legislative reforms, growth in contract manufacturing and outsourcing, value added foreign acquisitions and joint ventures and India's acumen and expertise in reverse engineering of patented drug molecules. India has, in the meantime, been trying to comply with the World Trade Organization's Trade Related Intellectual Property Agreement (TRIPs) obligations. India is now among the top five pharmaceutical emerging markets.

The Indian pharma industry has been growing at a compounded annual growth rate (CAGR) of more than 15 per cent over the last five years and has significant growth opportunities. The Indian pharmaceutical sector is expected to grow five-fold to reach Rs 5 lakh crore (US\$ 91.45 billion) by 2020, as per Dr A J V Prasad, Joint Secretary, Department of Pharmaceuticals (DoP). The industry, particularly, has been the front runner in a wide range of specialties involving complex drugs' manufacture, development, and technology. With the advantage of being a highly organized sector, the number of pharmaceutical companies are increasing their operations in India.

Few Indian Major Players are as under

Bbott India Ltd.

Anglo-French Drugs & Inds. Ltd.

Biological E. Ltd.

Boehringer Mannheim India Ltd.

Cadila Laboratories Pvt. Ltd.

Cadila Pharmaceuticals Ltd.

Chemcel Biotech Ltd.

Cosme Farma Laboratories Ltd.

Fermenta Biotech Ltd.

H P M Industries Ltd.

Indian Drugs & Pharmaceuticals Ltd.

Inventia Healthcare Pvt. Ltd.

Pharmacia Healthcare Ltd.
Rhyme Organics & Chemicals Ltd.
Sandoz (India) Ltd.
Sarvodaya Labs Ltd.
Shiv Herbal Research Laboratory Ltd.
Sidmak Laboratories (India) Pvt. Ltd.
Smith Stanistreet Pharmaceuticals Ltd.
Stanpacks (India) Ltd.
T T K Healthcare Ltd.
Varun Polymol Organics Ltd.
Virgo Polymers (India) Ltd.
Wallace Pharmaceuticals Ltd.

Project at a Glance

PROJECT AT A GLANCE

(Rs. in lacs)

COST OF PROJECT				MEANS OF FINANCE			
Particulars	Existing	Proposed	Total	Particulars	Existing	Proposed	Total
Land & Site Development Exp.	0.00	105.00	105.00	Capital	0.00	136.90	136.90
Buildings	0.00	79.50	79.50	Share Premium	0.00	0.00	0.00
Plant & Machineries	0.00	208.20	208.20	Other Type Share Capital	0.00	0.00	0.00
Motor Vehicles	0.00	15.00	15.00	Reserves & Surplus	0.00	0.00	0.00
Office Automation Equipments	0.00	81.50	81.50	Cash Subsidy	0.00	0.00	0.00
Technical Knowhow Fees & Exp.	0.00	30.00	30.00	Internal Cash Accruals	0.00	0.00	0.00
Franchise & Other Deposits	0.00	0.00	0.00	Long/Medium Term Borrowings	0.00	410.69	410.69
Preliminary & Pre-operative Exp	0.00	3.00	3.00	Debentures / Bonds	0.00	0.00	0.00
Provision for Contingencies	0.00	20.00	20.00	Unsecured Loans/Deposits	0.00	0.00	0.00
Margin Money - Working Capital	0.00	5.39	5.39				
TOTAL	0.00	547.59	547.59	TOTAL	0.00	547.59	547.59

Project at a Glance

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	5.04	9.07	15.04	24.00	0.00	100.00	5.04	0.00	5.04	1.00	0.00
2-3	8.26	11.77	23.30	18.00	0.00	100.00	8.26	0.00	8.26	1.00	0.00
3-4	11.41	14.48	34.71	12.00	0.00	100.00	11.41	0.00	11.41	1.00	0.00
4-5	14.41	17.10	49.12	6.00	0.00	100.00	14.41	0.00	14.41	1.00	0.00
5-6	17.24	19.60	66.36	0.00	0.00	100.00	17.24	0.00	17.24	1.00	0.00

Project at a Glance

Year	D. S. C. R.			Debt / - Deposit s Debt	Equity as- Equity	Total Net Worth	Return on Net Worth	Profitability Ratio					Assets Turnover Ratio	Current Ratio
	Individu al	Cumulati ve	Overall					GPM	PBT	PAT	Net Contrib ution	P/V Ratio		
	(Number of times)			(Number of times)		%	%	%	%	%		%		
Initial				3.00	3.00									
1-2	1.33	1.33		1.60	1.60	3.12		11.31%	4.35%	3.14%	702.48	31.99%	2.67	0.91
2-3	1.67	1.49		0.77	0.77	1.93		12.76%	6.66%	4.41%	742.00	28.96%	2.82	1.10
3-4	2.07	1.67	2.07	0.35	0.35	1.23		13.72%	8.28%	5.33%	846.15	28.90%	2.82	1.32
4-5	2.55	1.86		0.12	0.12	0.82		14.36%	9.41%	5.99%	950.31	28.85%	2.73	1.56
5-6	3.11	2.07		0.00	0.00	0.58		14.77%	10.19%	6.45%	1054.46	28.81%	2.58	2.11

Project at a Glance

BEP	
BEP - Maximum Utilisation Year	5
Cash BEP (% of Installed Capacity)	60.33%
Total BEP (% of Installed Capacity)	63.39%
IRR, PAYBACK and FACR	
Internal Rate of Return .. (In %age)	26.86%
Payback Period of the Project is (In Years)	2.814 Years
Fixed Assets Coverage Ratio (No. of times)	11.175

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What do we offer?

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- *We empower our customers with the prerequisite know-how to take sound business decisions*
- *We help catalyze business growth by providing distinctive and profound market analysis*
- *We serve a wide array of customers , from individual entrepreneurs to Corporations and Foreign Investors*
- *We use authentic & reliable sources to ensure business precision*

Our Approach

Requirement collection

Thorough analysis of the project

Economic feasibility study of the Project

Market potential survey/research

Report Compilation

Who do we serve?

- *Public-sector Companies*
- *Corporates*
- *Government Undertakings*
- *Individual Entrepreneurs*
- *NRI's*
- *Foreign Investors*
- *Non-profit Organizations, NBFC's*
- *Educational Institutions*
- *Embassies & Consulates*
- *Consultancies*
- *Industry / trade associations*



Sectors We Cover

- *Ayurvedic And Herbal Medicines, Herbal Cosmetics*
- *Alcoholic And Non Alcoholic Beverages, Drinks*
- *Adhesives, Industrial Adhesive, Sealants, Glues, Gum & Resin*
- *Activated Carbon & Activated Charcoal*
- *Aluminium And Aluminium Extrusion Profiles & Sections,*
- *Bio-fertilizers And Biotechnology*
- *Breakfast Snacks And Cereal Food*
- *Bicycle Tyres & Tubes, Bicycle Parts, Bicycle Assembling*

Sectors We Cover *Cont...*

- *Bamboo And Cane Based Projects*
- *Building Materials And Construction Projects*
- *Biodegradable & Bioplastic Based Projects*
- *Chemicals (Organic And Inorganic)*
- *Confectionery, Bakery/Baking And Other Food*
- *Cereal Processing*
- *Coconut And Coconut Based Products*
- *Cold Storage For Fruits & Vegetables*
- *Coal & Coal Byproduct*

Sectors We Cover *Cont...*

- *Copper & Copper Based Projects*
- *Dairy/Milk Processing*
- *Disinfectants, Pesticides, Insecticides, Mosquito Repellents,*
- *Electrical, Electronic And Computer based Projects*
- *Essential Oils, Oils & Fats And Allied*
- *Engineering Goods*
- *Fibre Glass & Float Glass*
- *Fast Moving Consumer Goods*
- *Food, Bakery, Agro Processing*

Sectors We Cover *Cont...*

- *Fruits & Vegetables Processing*
- *Ferro Alloys Based Projects*
- *Fertilizers & Biofertilizers*
- *Ginger & Ginger Based Projects*
- *Herbs And Medicinal Cultivation And Jatropha (Biofuel)*
- *Hotel & Hospitality Projects*
- *Hospital Based Projects*
- *Herbal Based Projects*
- *Inks, Stationery And Export Industries*

Sectors We Cover *Cont...*

- *Infrastructure Projects*
- *Jute & Jute Based Products*
- *Leather And Leather Based Projects*
- *Leisure & Entertainment Based Projects*
- *Livestock Farming Of Birds & Animals*
- *Minerals And Minerals*
- *Maize Processing(Wet Milling) & Maize Based Projects*
- *Medical Plastics, Disposables Plastic Syringe, Blood Bags*
- *Organic Farming, Neem Products Etc.*

Sectors We Cover *Cont...*

- *Paints, Pigments, Varnish & Lacquer*
- *Paper And Paper Board, Paper Recycling Projects*
- *Printing Inks*
- *Packaging Based Projects*
- *Perfumes, Cosmetics And Flavours*
- *Power Generation Based Projects & Renewable Energy Based Projects*
- *Pharmaceuticals And Drugs*
- *Plantations, Farming And Cultivations*
- *Plastic Film, Plastic Waste And Plastic Compounds*
- *Plastic, PVC, PET, HDPE, LDPE Etc.*

Sectors We Cover *Cont...*

- *Potato And Potato Based Projects*
- *Printing And Packaging*
- *Real Estate, Leisure And Hospitality*
- *Rubber And Rubber Products*
- *Soaps And Detergents*
- *Stationary Products*
- *Spices And Snacks Food*
- *Steel & Steel Products*
- *Textile Auxiliary And Chemicals*

Sectors We Cover *Cont...*

- *Township & Residential Complex*
- *Textiles And Readymade Garments*
- *Waste Management & Recycling*
- *Wood & Wood Products*
- *Water Industry(Packaged Drinking Water & Mineral Water)*
- *Wire & Cable*

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