

106-E, Kamla Nagar, New Delhi-110007, India.  
 Tel: 91-11-23843955, 23845654, 23845886, +918800733955  
 Mobile: +91-9811043595  
 Email: [npcs.ei@gmail.com](mailto:npcs.ei@gmail.com), [info@entrepreneurindia.co](mailto:info@entrepreneurindia.co)  
 Website: [www.entrepreneurIndia.co](http://www.entrepreneurIndia.co)

## Industrial Chemicals Technology Hand Book

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## Description

Growth in demand for chemicals in developing countries is high leading to substantial cross border investment in the chemical sector. The chemical industry comprises the companies that produce industrial chemicals. Chemicals are used to make a wide variety of consumer goods, as well as thousands inputs to manufacturing, construction, and service industries. The applications of industrial chemical are in various fields like in organic chemicals, paint, varnishes, resins, petroleum, pigments, printing inks, acrylics polyesters engineering thermoplastics. The chemical industry itself consumes 26 percent of its own output. In modern age chemical industries have permeated most extensively in comparison with other industries and are progressing at a very rapid pace. Chemical industry is one of the oldest industries in India. It not only plays a crucial role in meeting the daily needs of the common man, but also contributes significantly towards industrial and economic growth of the nation. The chemical industry forms the backbone of the industrial and agricultural development and provides building blocks for downstream industries; it is an important constituent of the Indian economy. The chemical industry in India which generates almost 13% of total national export is growing annually at a growth rate anywhere between 10% and 12%. Global chemical production is growing and the growth is contributed by the chemical industry of developing countries.

The book contains manufacturing processes, reactions, equipments details, process flow diagram of number of chemicals, which have huge industrial uses. The major contents of the book are iodine from oil well brines, lactic acid from corn sugar, modern production of chlorine and caustic soda, organic chemicals, chemicals derived from methane and so on.

This book is very useful for new entrepreneurs, industrialists, consultants, research scholars, technical institutions, chemists and libraries. This book is recommended to all

related to field of chemical process technology.

## Content

### 1. Iodine From Oil Well Brines

Brine Collection

Brine Cleanup

Blowing-Out And Recovery

Iodine Finishing

Process Control

### 2. Lactic Acid From Corn Sugar

Dextrose, Whey, Or Molasses May Be Used For Lactic Acid Fermentations

Four Different Grades

In Commercial Practice Yields Of 85% Of Fermentable Hexose Are Normal

*L. Delbrückii* Is Culture Used; Corn Sugar Is Principal Fermentation Medium

Calcium Lactate Is Produced During 4- To 6-Day Fermentation Period

Recycled Calcium Sulfate Added To Aid Filtration

Calcium Lactate And Sulfuric Acid React To Form Lactic Acid

Stainless Steel Is Used For Acid Evaporators

Calcium Lactate Is Also Processed As An End Product

Fermentation Processes Operate Around The Clock

Corrosion Is A Major Problem In Production Of Lactic Acid

Foods And Tanning Industries Use Large Quantities Of Lactic Acid

Salts And Other Derivatives Are Used In Diversified Industries

Future Expansions In Lactic Acid Production Must Supply A Quality Product At A Lower

Price

### 3. Modern Production Of Chlorine And Caustic Soda

Raw Materials

Storage And Preparation

Chlorine Production

Caustic Preparation

Hydrogen Chloride

Filling And Storage Systems

Instrumentation And Safety

### 4. Nitrofurans

Uses For Nitrofurans Extend Into Fields Of Both Human And Veterinary Medicine

Synthesis Of 5-Nitro-2-Furaldehyde Diacetate Is Initial Phase Of Batchwise Procedure  
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Synthesis Of Furazolidone Is Based On Reaction Of 3-Amino-2-Oxazolidone With 5-Nitro-2-Furaldehyde Diacetate  
Analytical Tests Are Run On All Raw Materials And Final Products

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Chloromethanes

Acetylene

Hydrogen Cyanide

Carbon Disulfide

Chemicals Derived From Ethylene

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Ethylene Oxide

Chlorinated Ethanes And Ethylenes

Ethanol

Ethylbenzene

Acetaldehyde, Acetic Acid, Acetic Anhydride, Vinyl Acetate

Ethylene Oligomers (Alpha Olefins) And Linear Primary Alcohols

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Cumene (Phenol)

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N-Butyl Acetate

Iso-Butyl Acetate

Sec. Butyl Acetate

Tert-Butyl Acetate

Manufacturing Process

Note

Reaction

Flow Diagram

Uses

Grades

Toxicity

Epoxy Resins

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Manufacturing Process

From Methanol

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From Formaldehyde And Ammonia

Reaction

Flow Diagram

Uses

Grades

Toxicity

Solubility Of Pentaerythritol

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Reaction

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Note

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Reaction

Note

Uses

Grades

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Typical Crystal Properties Of Rutile And Anatase TiO<sub>2</sub>

Manufacturing Process

Sulphate Process

Note

Reaction

Chloride Process

Note  
Grades  
Toxicity

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Note  
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Reaction  
Flow Diagram

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Uses  
Grades  
Toxicity

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NIIR PROJECT CONSULTANCY SERVICES  
106-E, Kamla Nagar, New Delhi-110007, India.  
Tel: 91-11-23843955, 23845654, 23845886, +918800733955  
Mobile: +91-9811043595  
Email: [npcs.ei@gmail.com](mailto:npcs.ei@gmail.com), [info@entrepreneurindia.co](mailto:info@entrepreneurindia.co)  
Website: [www.entrepreneurIndia.co](http://www.entrepreneurIndia.co)