

# **Minerals & Mineral Processing, Glass and Ceramics**

**The Complete Book on Glass and Ceramics Technology (2nd Revised Edition)**

**Author:** NIIR Board of Consultants & Engineers

**Format:** Paperback

**Book Code:** NI163

**Pages:** 624

**ISBN:** 9788178331751

**Price:** Rs. 1,495.00    **US\$** 150.00

Ceramics also known as fire clay is an inorganic, non-metallic solid article, which is produced by the art or technique of heat and subsequent cooling. The ceramics industry in India came into existence about a century ago and has matured over time to form an industrial base. From traditional pottery making, the industry has evolved to find its place in the market for sophisticated insulators, electronic and electrical items. The ceramic industry has been modernizing continuously, by newer innovations in product design, quality etc. Glass is an inorganic product typically produced by melting a mixture of silica, soda and calcium compound with desired metallic oxides that serves as coloring agents. Indian glass industry will increase on the sidelines of real estate growth across retail, residential and office estate. Glass production involves the fusion of several inorganic substances. These various substances include products such as silica sand, soda ash, dolomite and limestone, representing together 99% of all the raw materials, excluding recycled glass. Glass-ceramics are mostly produced in two steps: First, a glass is formed by a glass-manufacturing process. The glass is cooled down and is then reheated in a second step. In this heat treatment the glass partly crystallizes. In most cases nucleation agents are added to the base composition of the glass-ceramic. These nucleation agents aid and control the crystallization process. Glass-ceramics are fine-grained polycrystalline materials formed when glasses of suitable compositions are heat treated and thus undergo controlled crystallization to the lower energy, crystalline state. It is important to emphasize a number of points in this statement on glass ceramics. Glass ceramics has helped the electronics industry build much smaller and highly efficient transistors, leading to advances in all types of devices. The book covers almost all important aspects of Glass and Ceramic Industry: Properties, Applications, Manufacturing, Processing and Photographs of Plant & Machinery with Supplier's Contact Details. The major contents of the book are types of glasses, silicate glasses, boric oxide and borate glasses, phosphorus pentoxide and phosphate glasses, germanium dioxide and germanate glasses, titanate glasses, nitrate glasses, glasses based on water, halide glasses, modern glass working, monax and pyrex glass, electric welding, photo electric cells, glassy metals, analysis of glass, glass ceramics, ceramics as electrical materials, analysis of ceramics etc. The book will be useful to

the consultants, technocrats, research scholars, libraries and existing units and new entrepreneurs who will find a good base to work further in this field.

## **Directory/ Database/ List of Glass & Glass Products Manufacturers, Dealers and Exporters in India [.xlsx, excel format] 4th Edition**

**Format:** CD-Rom

**Book Code:** NID105

**Price:** Rs. 4,012.00    **US\$** 150.00

Offline Business directory is the best thing in today's business world. If you are searching for Buyers, then this Directory/Database is the perfect tool for you. By having the right business leads, you would be able to have immediate communication with prospective businesses, partners and customers through this boundless list of Glass & Glass Products Manufacturers, Dealers and Exporters in India in excel format, .xls We offer an extensive suite of Directories/ database to assist you in reaching the right businesses and people quickly and easily. Business Directories are used for sales planning, finding Buyers and marketing research to perform business analysis. With our company database/Directory, you will have access to company list. You will find a business list consisting of company contact details. We compiled list of companies in excel format to give you access to over hundred thousands of major & minor businesses and companies. From small business to Corporate Houses, our data is complete with business contact information to help you connect with the right companies or buyers. This database collection is a great resource for those suppliers who offer their goods and services to Glass & Glass Products Manufacturers, Dealers and Exporters like, Companies, Industries, Manufacturers, Developers, Builders, Building Contractors, Architects, Interior Decorators, Traders, Traders, Wholesalers, Retailers, Packaging Material Suppliers, Plant & Machinery Suppliers, Office Equipment Suppliers, Office Furniture Suppliers, Mobile Companies, Raw Material Suppliers, Advertisement Agencies, Office Stationery Suppliers, Transporters, Courier Companies, IT, Software Companies, Placement Companies, Labour Contractors etc. Information in this database contains over 8,900 records of Glass & Glass Products Manufacturers, Dealers and Exporters in India. Details Includes: Company Name (8,900), Contact Person (3,200), Postal Address (8,800), Phone No. (8,600 Landline or Mobile), Fax (2,100), E-mail (6,600), Website (1,900). Note: All Records does not contain all fields of information. However, maximum information has been incorporated. Format: MS Excel, .xlsx

## [Directory/ Database/ List of Metals & Minerals Companies / Industries in India \(4th Edition\)](#)

**Format:** CD-Rom

**Book Code:** NID108

**Price:** Rs. 4,897.00    **US\$** 150.00

Offline Business directory is the best thing in today's business world. If you are searching for Buyers, then this Directory/Database is the perfect tool for you. By having the right business leads, you would be able to have immediate communication with prospective businesses, partners and customers through this boundless list of Metals & Minerals Companies / Industries in India in excel format, .xls We offer an extensive suite of Directories/ database to assist you in reaching the right businesses and people quickly and easily. Business Directories are used for sales planning, finding Buyers and marketing research to perform business analysis. With our company database/Directory, you will have access to company list. You will find a business list consisting of company contact details. We compiled list of companies in excel format to give you access to over hundred thousands of major & minor businesses and companies. From small business to Corporate Houses, our data is complete with business contact information to help you connect with the right companies or buyers. This database collection is a great resource for those suppliers who offer their goods and services to Metals & Minerals Companies / Industries like, Companies, Industries, Manufacturers, Traders, Buying Houses, Buying Agents, Traders, Wholesalers, Retailers, Cargo Shipper, Clearing Agents, Travel Agents, Custom House Clearing Agents, Bank, Money Exchanger, Packaging Material Suppliers, Plant & Machinery Suppliers, Office Equipment Suppliers, Office Furniture Suppliers, Mobile Companies, Raw Material Suppliers, Advertisement Agencies, Office Stationery Suppliers, Transporters, Courier Companies, IT, Software Companies, Placement Companies, Labour Contractors etc. Information in this database contains over 29,100 records of Metals & Minerals Companies / Industries in India. Details Includes: Company Name (29,100), Contact Person (17,000), Postal Address (29,400), Phone No. (27,200 Landline or Mobile), Fax (8,500), E-mail (24,100), Website (5,500). Note: All Records does not contain all fields of information. However, maximum information has been incorporated. Format: MS Excel, .xlsx

# **The Complete Technology Book on Minerals & Mineral Processing**

**Author:** NPCS Board of Consultants & Engineers

**Format:** Paperback

**Book Code:** NI204

**Pages:** 712

**ISBN:** 8178330164

**Price:** Rs. 2,200.00    **US\$** 200.00

Mineral is defined as a naturally occurring solid chemical substance formed through biogeochemical processes, having characteristic chemical composition, highly ordered atomic structure, and specific physical properties. By comparison, a rock is an aggregate of minerals and/or mineraloids and does not have a specific chemical composition. Mineral resources of India are sufficiently rich and varied to provide the country with strong industrial base. The country is particularly rich in metallic minerals of the ferrous group such as iron ores, manganese etc. It has the world largest reserves in mica and bauxite. In the field of extractive metallurgy, mineral processing, also known as mineral dressing or ore dressing, is the process of separating commercially valuable minerals from their ores. Mining is the extraction of valuable minerals or other geological materials from the earth, from an ore body; the term also includes the removal of soil. Materials recovered by mining include base metals, precious metals, iron, uranium, limestone, etc. There are three methods of mining; conventional or manual mining, semi mechanised mining and mechanised mining. Geopolymerisation is the processes which can transfer large scale alumina silicate wastes into value added geopolymeric products with sound mechanical strength and high acid, fire and bacterial resistance. One of many useful applications of geopolymerisation is the immobilization of heavy metals and radioactive elements. The production of non ferrous metals from natural mineral ores is, in general, highly energy intensive. Some of the non ferrous mineral sources are bauxite, granite, magnesite, limonite etc. Limestone is a sedimentary rock composed largely of the minerals calcite and aragonite, which are different crystal forms of calcium carbonate ( $\text{CaCO}_3$ ). Limestone processing includes several steps; primary crushing (jaw crusher, gyratory crusher, impact breaker), secondary crushing (cone crusher), fine grinding and pulverization, conveying, screening, washing, heavy media separation, optical mineral sorters, drying and storage. The non metallic mineral mining and quarrying industry segment covers a wide range of mineral extraction. Most of these minerals are found in abundance close to the surface, so underground mining is uncommon in this industry segment. Mineral resources of India are sufficiently rich and varied to provide the country with strong industrial base. The country is particularly rich in metallic minerals of the ferrous

group such as iron ores, manganese etc. It has the world largest reserves in mica and bauxite. This book basically deals with methods of mining, mining machineries, geopolymerisation of mineral products and waste, industrial and scientific aspects of non ferrous metals production, processing of alumina rich Indian iron ore slimes, limestone processing, limestone exploration and extraction, the mineralogy of asbestos, the use of asbestos and asbestos free substitutes in buildings, flotation column ;a novel technique in mineral processing, applications of thermal plasma in the synthesis of covalent carbides, nitrogenous fertilizers, manufacture of ammonium bicarbonate etc. This book is designed to describe the details of mining and processing of different minerals like alumina rich iron ore slimes, conversion of waste to a high valued product, lime stone, asbestos, coal beneficiation, gravity concentration processes to recover values from coal and ore fines and many more. The book is meant for everyone who wants to study about the subject or wants to venture into the field of mineral processing.



# **The Complete Book on Glass Technology**

**Author:** NPCS Board of Consultants & Engineers

**Format:** Paperback

**Book Code:** NI205

**Pages:** 584

**ISBN:** 8178330172

**Price:** Rs. 1,625.00    **US\$** 150.00

Glass is an amorphous solid usually formed by the solidification of a melt without crystallisation. It is an inorganic product of melting, which has been cooled to rigid state without crystallization. Melting is in fact the sole large scale industrial method of glass making. Glass is being used worldwide and has various applications. They are typically brittle and optically transparent. It is widely used in buildings and having industrial applications. The presence of glasses in our everyday environment is so common that we rarely notice their existence. Glass, as a substance, plays an essential role in science and industry. There are various methods of glass making other than melting for example condensation of vapours, conversion of crystals to an amorphous form using mechanical means or irradiation with fast neutrons, dehydration and sintering of gels, etc. Silica (the chemical compound  $\text{SiO}_2$ ) is a common fundamental constituent of glass. The properties of glass can be varied and regulated over an extensive range by modifying the composition, production techniques, or both. In any glass, the mechanical, chemical, optical, and thermal properties cannot occur separately. Instead, any glass represents a combination of properties, and in selecting an individual glass for a product, it is this combination that is important. As an architectural element, glass has become the quite essential product for your home or building. The applications of glass are limited only by your imagination; glass has many applications both internal and external that play a vital role in the function and design of your project. Industrially produced glasses can be divided into groups according to various criteria: composition, appearance, properties, application, method of forming etc. According to their chemical composition glasses are classified as silica glass (quartz glass), water (soluble) glass or sodium silicate glass, crystal glass, heat resistant glass, low alkali glass etc. Glass is finding ever wider applications in modern technology; sealing glasses which have been in use for many years, serve in vacuum tight joining of glass to metal, especially in vacuum electronics, in nuclear technology (protection from radiation, immobilization of radioactive waste by fusion into a chemically resistant glass, etc.), in agriculture (as carrier of fertilizers with long term effects) and a number of possible application in electronics and many more. Some of the

fundamentals of the book are structure of glass, structure of special melts and glasses, composition of glass, glass formation, crystallization and liquid, optical properties, theoretical strength of glasses, practical strengths of glasses, flaw sources and removal, viscosity of glass forming melts, theoretical principles of glass melting, chemical reactions occurring in glass melting, dissolution of solids in the melt, flow of glass in melting furnaces, physical chemical factors in sol gel processing, deposition of transparent non crystalline, metal oxide coatings by the sol gel process etc. The present book covers different important parameters of glass technology. The book is comprehensive guide for researchers, technologists, new entrepreneurs and professionals.

# **Selected Formulary Book on Petroleum, Lubricants, Fats, Polishes, Glass, Ceramics, Nitrogenous Fertilizers, Emulsions, Leather and Insecticides**

**Author:** NPCS Board of Consultants & Engineers

**Format:** Hardcover

**Book Code:** NI211

**Pages:** 784

**ISBN:** 9788190568562

**Price:** Rs. 2,275.00 US\$ 200.00

A man entering an industry soon finds that most of the products manufactured by his company are not synthetic or definite chemical compounds, but are mixtures, blends or highly complex compounds of which he knows little or nothing. The literature in this field, if any, may be meager, scattered or antiquated. Formulation is a key process in the overall life cycle so that products are delivered that is of the right quality, at a competitive cost, and is made available within the specified time scale. A formula is an entity constructed using the symbols and formation rules of a given logical language. In science, a specific formula is a concise way of expressing information symbolically as in a mathematical or chemical formula. The chemical formula identifies each constituent element by its chemical symbol and indicates the number of atoms of each element found in each discrete molecule of that compound. If a molecule contains more than one atom of a particular element, this quantity is indicated using a subscript after the chemical symbol and also can be combined by more chemical elements. It is all in the formula, whose implications also remain undiscovered by modern economists. It plays a major role in every process whether it is manufacturing process or preservation. There is a big importance of formula in our life because formulas and equations deal with everyday things like shapes, investments, mixing things, movement, lighting, travel and a host of other things they provide information you can use in planning activities. This book basically deals with the extracting oil from cottonseed, silver nitrate test for cottonseed oil, solid linseed oil, decolorizing or bleaching linseed oil, linseed oil for varnish making, refining linseed oil, mineral oil, leather stuffing grease, leather adhesion grease, liquid belting lubricant, belt adhesion compounds, belt preserving grease, government harness dressing, rubber belt dressing (non static), wire drawing lubricant, wire drawing composition, metal drawing lubricant, cold drawing metal lubricant, drawing compound for aluminum, brass drawing lubricating emulsion, sheet steel drawing lubricant, non seizing threads and gaskets, machine tool lubricant, slushing oil for metal protection horse shoe grease etc. This book is an invaluable resource of the formulae of petroleum, lubricants, fats, polishes, glass, ceramics, nitrogenous fertilizers, emulsions, leather and insecticides. This book present

several hundred advanced product formulations for household, industrial and other applications. The purpose of publishing this book is very useful for chemists, entrepreneurs, existing units, technocrats and engineering students.

## **Directory / Database of Corporate/Leading Companies in Indian Mineral Products (Non Metallic Minerals, Metallic Ores, Slag, Ash, Mineral Fuels) with Financial Figures (5th Edition)**

**Format:** CD-Rom

**Book Code:** NID155

**Price:** Rs. 5,133.00    **US\$** 150.00

"Contains: 940 records with following information: Name of Company, Address, City, Pin Code, Phone, Fax, Email (748), Website (363). Name of Directors, Location of Plants, Project Capacity, Production, Name of Products, Turnover, Product industry Code, List of Major Raw Materials with their consumption quantity & Raw material value, credit ratings. Comparison amongst companies ( Cash Flow, Cost as % of sales, Forextransactions, Growth in Assets & Liabilities, Growth in Income & Expenditure, Income & expenditure, Liabilities, Liquidity Ratios, Profitability Ratio, Profits, Return Ratios, Structure of Assets & Liabilities (%), Assets, Working Capital & Turnover Ratios) (\*Wherever available) Note: All Records does not contain all fields of information. However, maximum Information has been incorporated. Format: MS Excel "

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## **Directory / Database of Indian Corporate/Leading Companies in Non-Metallic Mineral Products (Silica Minerals, Abrasives, Stone, Mineral Phosphate, Magnesium Carbonate, Gypsum & Plasters, Limestone, Mica, Granite etc.) with Financial Figures (5th Edition)**

**Format:** CD-Rom

**Book Code:** NID172

**Price:** Rs. 6,372.00 **US\$** 225.00

"PRODUCTS COVERED: CEMENT, ASBESTOS, ABRASIVES Cement & Clinker, Products of Cement, Concrete, Asbestos-Cement Products, Millstone, Grindstone, Limestone, Abrasive Powder, Slag Wool, Rock Wool, Asphalt, Bitumen, Coal Tar Pitch, Earthen Wares & Plaster Products, Mica Products, Gypsum Board, Micro Abrasive Power CERAMIC PRODUCTS Bricks, Blocks, Refractory Bricks, Tiles, Ceramic Materials, Fibre, Pipe GLASS & GLASSWARES Float Glass, Glass Articles, Glass Cullet, Fiber Glass, Sheet Glass, Mineral Glass Sheet, Broken Glass PEARLS & PRECIOUS STONES Pearls, Diamond, Rough Diamonds, Semi Finished Diamonds, Cut & Polished Diamonds, Synthetic Semi Precious Stones, Gold Ornaments & Jewellery, Semi Finished Jewellery. Contains: 858 records Includes: Name of Company, Address, City, Pin Code, Phone, Fax, E-mail (635), Website (321). Name of Directors, Location of Plants, Project Capacity, Production, Name of Products, Turnover, Product industry Code, List of Major Raw Materials with their consumption quantity & Raw material value, credit ratings. Comparison amongst companies ( Cash Flow, Cost as % of sales, Forextransactions, Growth in Assets & Liabilities, Growth in Income & Expenditure, Income & expenditure, Liabilities, Liquidity Ratios, Profitability Ratio, Profits, Return Ratios, Structure of Assets & Liabilities (%), Assets, Working Capital & Turnover Ratios) (\*Wherever available) Note: All Records does not contain all fields of information. However, maximum Information has been incorporated. Format: MS Excel "

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## **[The Complete Technology Book on Asbestos, Cement, Ceramics and Limestone](#)**



**Author:** Dr. H. Panda

**Format:** Paperback

**Book Code:** NI297

**Pages:** 592

**ISBN:** 9788178331669

**Price:** Rs. 1,875.00 US\$ 150.00

Asbestos is the generic term for a group of naturally occurring fibrous minerals with high tensile strength, flexibility, and resistance to thermal, chemical and electrical conditions. Asbestos fibers are of high-tensile strength, flexible, heat and chemical resistance, and good frictional properties. Cement is the most essential raw material in any kind of construction activity. Ceramics also known as fire clay is an inorganic, non-metallic solid article, which is produced by the art or technique of heat and subsequent cooling. Limestone is a sedimentary rock, mainly composed of calcium carbonate (CaCO<sub>3</sub>). It is the principal source of crushed stone for construction, transportation, agriculture, and industrial uses. Emerging applications in commercial sectors such as asbestos, cement and ceramic are poised to fuel demand in the coming years. Growing demand for limestone in the production of cement as well as in several other chemicals that are used in the production of high-value every-day products offers significant opportunities for growth. Global Limestone consumption is projected to reach 5.7 billion tons and expected to grow at an average annual rate of 4–5% in coming years. Presently, cement production is 330 million tonnes and expected to double to reach almost 550 million tonnes in future. The major contents of the book are asbestos, monitoring and identification of air-borne asbestos, asbestos in industrial applications, asbestos – cement products, non – occupational asbestos emissions and exposures, cements, mortars and concrete, raw materials, additives and fuels for cement, processes of manufacturing of cement, cement based on natural and artificial pozzolanas, fast-setting cements, special portland cements, packing of cement, storages of cement, ceramics, lime & limestone, glass & glass ceramics etc. It describes the manufacturing processes and photographs of plant & machinery with supplier's contact details. It will be a standard reference book for professionals, entrepreneurs, those studying and researching in this important area and others interested in the field of these industries.

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**[Handbook on Gypsum and Gypsum Based Products \(Mining, Processing, Transportation, Handling & Storage, Gypsum Board,](#)**

## **Plaster of Paris with Machinery & Equipment Details)**

**Author:** P.K. Tripathi

**Format:** Paperback

**Book Code:** NI321

**Pages:** 360

**ISBN:** 9788194737919

**Price:** Rs. 2,275.00 US\$ 200.00

Handbook on Gypsum and Gypsum based Products (Mining, Processing, Transportation, Handling & Storage, Gypsum Board, Plaster of Paris with Machinery & Equipment Details)

Gypsum is chemically known as calcium sulfate dihydrate and it contains calcium and sulfur, which is bound to oxygen and water. Gypsum is an abundant mineral and takes various forms including alabaster, which is a material, used in decoration and construction. This is a non-toxic mineral and it can be helpful to humans, animals, plant life, and the environment. The majority of gypsum produced is used to manufacture gypsum board or building plasters and it is used in many other ways. Gypsum products are used in dentistry, medicine, homes, and industry. In homes, gypsum plaster is used to make walls; in industry, it is used to make molds.

Three types of gypsum products are plaster, stone, and high-strength or improved stone. The Gypsum and the Gypsum products are used for construction purposes. It is also used in industry for making pottery, moulds etc. It is used by orthopedics to make plaster casts and helps the dentist for the cast preparation, models and dies, impression material, investment material, mounting of Casts, as a mold material for processing of complete dentures etc. The global gypsum board market size is anticipated to exhibit a CAGR of 11.9% in terms of revenue. Increasing utilization of gypsum boards in decorative and partitioning applications in residential constructions is anticipated to drive the market. The demand for gypsum boards is driven by the residential sector, where the product is widely used in multi-family constructions for room partitioning. Durability and lightweight coupled with easy handling of the product are some of the factors anticipated to propel the demand. The major contents of the book are Mining, Processing, Transportation, Handling & Storage, Gypsum Board, Plaster of Paris for gypsum, Plant Layout, Process Flow Chart and Diagram, Plant & Machinery Suppliers and Photographs of Machineries. This book is one-stop guide to one of the fastest growing sector of the Gypsum and Gypsum based Products, where opportunities abound for manufacturers, retailers, and entrepreneurs. This is the only complete handbook on gypsum and gypsum based Products. It serves up a feast of how-to information, from concept to purchasing equipment.

# About NIIR

**NIIR PROJECT CONSULTANCY SERVICES (NPCS)** is a reliable name in the industrial world for offering integrated technical consultancy services. NPCS is manned by engineers, planners, specialists, financial experts, economic analysts and design specialists with extensive experience in the related industries.

Our various services are: Detailed Project Report, Business Plan for Manufacturing Plant, Start-up Ideas, Business Ideas for Entrepreneurs, Start up Business Opportunities, entrepreneurship projects, Successful Business Plan, Industry Trends, Market Research, Manufacturing Process, Machinery, Raw Materials, project report, Cost and Revenue, Pre-feasibility study for Profitable Manufacturing Business, Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Business Opportunities, Investment Opportunities for Most Profitable Business in India, Manufacturing Business Ideas, Preparation of Project Profile, Pre-Investment and Pre-Feasibility Study, Market Research Study, Preparation of Techno-Economic Feasibility Report, Identification and Section of Plant, Process, Equipment, General Guidance, Startup Help, Technical and Commercial Counseling for setting up new industrial project and Most Profitable Small Scale Business.

NPCS also publishes various process technology, technical, reference, self employment and startup books, directory, business and industry database, bankable detailed project report, market research report on various industries, small scale industry and profit making business. Besides being used by manufacturers, industrialists and entrepreneurs, our publications are also used by professionals including project engineers, information services bureau, consultants and project consultancy firms as one of the input in their research.

Our Detailed Project report aims at providing all the critical data required by any entrepreneur vying to venture into Project. While expanding a current business or while venturing into new business, entrepreneurs are often faced with the dilemma of zeroing in on a suitable product/line.

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