



NIIR PROJECT CONSULTANCY SERVICES

Minerals & Mineral Processing, Glass and Ceramics

[The Complete Book on Glass and Ceramics Technology](#)

Author: NIIR Board of Consultants & Engineers

Format: Paperback

Book Code: NI163

Pages: 624

ISBN: 8178330334

Price: Rs. 1,275.00 **US\$** 125.00



The technology of glass ceramics are now a day wide field involving a great variety of raw materials, manufacturing processes, as well as products, and of considerable diversity in theoretical background. The manufacture of traditional glasses and ceramics is based on the utilization of the most widely occurring natural raw materials. Glass is an inorganic product that is typically produced by melting a mixture of silica, soda and calcium compound with the desired metallic oxides that serve as colouring agents. The glass industry covers products such as silicate glasses, phosphate glasses, germanate glasses, halide glasses, nitrate glasses etc. Glass products are used widely in households, construction, laboratories and consumer items such as bangles, beads, pearls, etc. A ceramic is an inorganic, nonmetallic solid prepared by the action of heat and subsequent cooling. Ceramic materials may have a crystalline or partly crystalline structure, or may be amorphous (e.g., a glass). Because most common ceramics are crystalline, the definition of ceramic is often restricted to inorganic crystalline materials, as opposed to the noncrystalline glasses. Commercial application of glass ceramics are dinnerware, fine mesh screens, cookware, burner covers, semiconductor doping sources etc. The domestic glass industry is facing increasing competition in the global, as well as domestic markets. State of the art technology in manufacturing is becoming increasingly important in the industry. Modern technology and operations are replacing traditional methodologies in fibre glass composites. The demand for ceramic and glass products is growing globally with over 90 percent of the total demand for advanced ceramic materials coming from electronic goods and allied industries, thanks to the product ability to withstand extreme environmental conditions. This book majorly deals with 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 technology of glass ceramics are now a day wide field involving a great variety of raw materials, manufacturing processes, as well as products, and of considerable diversity in theoretical background. The manufacture of traditional glasses and ceramics is based on the utilization of the most widely occurring natural raw materials. The efforts have been made to provide maximum and latest information about processing of glass and ceramics and their products in this book. This book is an invaluable resource for entrepreneurs, technocrats, manufacturers of glass and ceramic products, research scholars, technical institutions etc.

[**Directory/ Database/ List of Glass & Glass Products Manufacturers, Dealers and Exporters in India \(2nd Edition\)**](#)

Format: CD-Rom

Book Code: NID105

Price: Rs. 3,599.00 **US\$** 150.00

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[**Directory/ Database/ List of Metals & Minerals Companies / Industries in India \(3rd Edition\)**](#)

Format: CD-Rom

Book Code: NID108

Price: Rs. 4,838.00 **US\$** 150.00



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[The Complete Technology Book on Minerals & Mineral Processing](#)

Author: NPCS Board of Consultants & Engineers

Format: Paperback

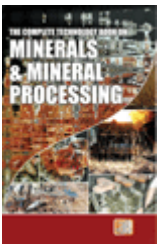
Book Code: NI204

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 (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 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 \(3rd Edition\)](#)

Format: CD-Rom

Book Code: NID155

Price: Rs. 4,956.00 US\$ 150.00

Contains: 464 records with following information: Name of Company, Address, City, Pin Code, Phone, Fax, Email*, Website*. Name of Directors, Energy Type & Consumption, 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, Capital Expenditure Projects (Capex). Comparison amongst companies (Assets, Cash Flow, Cost as % 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) (*Wherever available) Note: All Records does not contain all fields of information. However, maximum Information has been incorporated. Format: MS Excel



[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 \(3rd Edition\)](#)

Format: CD-Rom

Book Code: NID172

Price: Rs. 6,136.00 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 Tat 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: 573 records Includes: Name of Company, Address, City, Pin Code, Phone, Fax, E-mail*, Website*. 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 Comparison amongst companies (Assets, Cash Flow, Cost as % 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) (*Wherever available) Note: All Records does not contain all fields of information. However, maximum Information has been incorporated. Format: MS Excel



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

and Limestone

Author: Dr. H. Panda

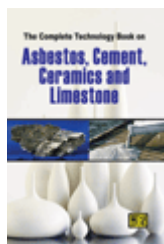
Format: Paperback

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 (CaCO₃). 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.

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.

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