

Sodium Silicate Production

using Rice Husk Ash

(Used in Adhesive, Drilling fluids, Concrete and general masonry treatment, Detergent auxiliaries, Water treatment, Refractory use, Dye auxiliary, Sealing of leaking water-containing structures)

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, Plant Economics, Production Schedule, Working Capital Requirement, Plant Layout, Process Flow Sheet, Cost of Project, Projected Balance Sheets, Profitability Ratios, Break Even Analysis

Introduction

Sodium silicate is used as raw material for several purposes: silica gel production, preparation of catalysts, inks, load for medicines, concrete hardening accelerator, component of detergents and soaps, refractory constituent and deflocculant in clay slurries.

Technology for rice husk ash (RHA) to sodium silicate Today rice husk is used as industrial fuel. This leads to production of large quantity of rice husk ash (RHA). RHA is now used mostly as land fill.

Rice husk / hull ash (RHA) contains:

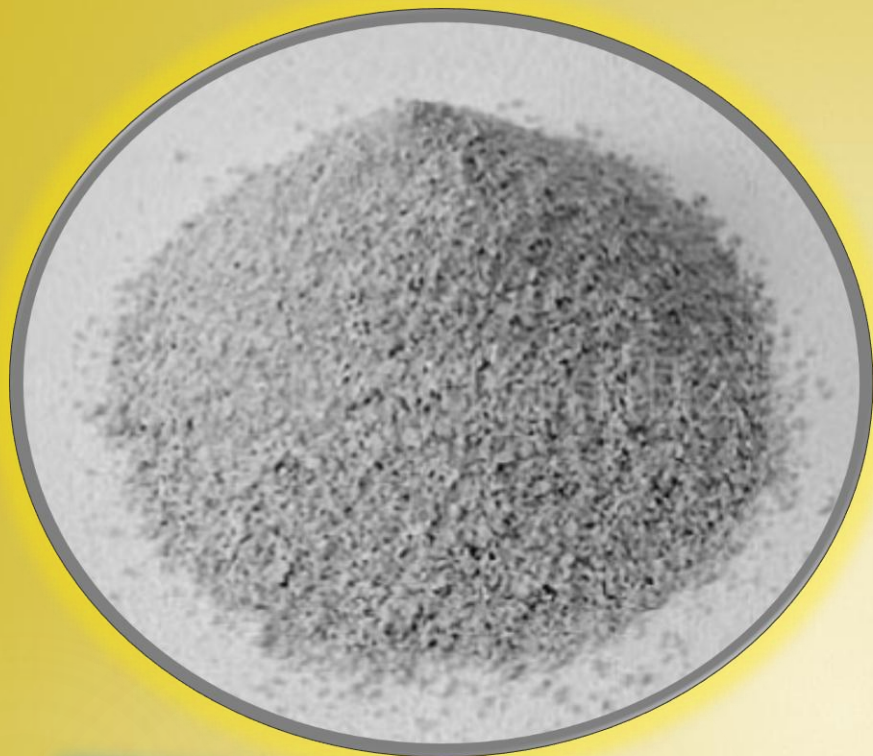
Biogenic Amorphous Silica

Carbon

Un-burnt rice husk / hull

Sodium silicate products are manufactured as solids or thick liquids, depending on proposed use. For instance, water glass functions as a sealant in metal components. Finally, even though, sodium silicate manufacture is a mature industry, there is current research for new applications given its heat conductive properties.

Sodium silicate is a colourless compound of oxides of sodium and silica. It has a range of chemical formula varying in sodium oxide (Na_2O) and silicon dioxide or silica (SiO_2) contents or ratios. Sodium silicate is the generic name for a series of compounds derived from soluble sodium silicate glasses. They are water solutions of sodium oxide (Na_2O) and silicon dioxide (SiO_2) combined in various ratios.



Varying the proportions of SiO_2 to Na_2O and the solids content results in solutions with differing properties that have many diversified industrial applications. These are sold as 20% to 50% aqueous solutions called water glass.

Rice husk a major by-product of the rice milling industry, is one of the most commonly available lignocellulosic materials that can be converted to different types of fuels and chemical feedstocks

through a variety of thermo chemical conversion processes. Rice husk is an agricultural residue abundantly available in rice producing countries. The husk surrounds the paddy grain.

India is a major rice producing country, and the husk generated during milling is mostly used as a fuel in the boilers for processing paddy, producing energy through direct combustion and/or by gasification.

About 20 million tones of RHA are produced annually. This RHA is a great environment threat causing damage to the land and the surrounding area in which it is dumped. Lots of ways are being thought of for disposing them by making commercial use of this RHA.

Sodium silicates are used in the composition of acid resisting and refractory cements.

Other uses of the silicate are as follows: as a suspension agent in air purification processes, from industrial wastes, for water proofing stone products, as a coating material in the packing materials, such as wooden panels, paper or cardboard boxes, for the insulation of electric copper wires, in the preservation of eggs. As a whole it is a good project for entrepreneurs to invest.

Properties of Sodium silicate

- Sodium silicate is a white powder that is readily soluble in water, producing an alkaline solution.
- It is one of a number of related compounds like, sodium ortho silicate, sodium pyro silicate, etc. All are glassy, colorless and dissolve in water.
- Sodium silicate is stable in neutral and alkaline. In acidic solutions, the silicate ion reacts with hydrogen ions to form silicic acid, which when heated and roasted forms silica gel, a hard, glassy substance.

- Liquids and solids based on sodium silicate and produced by PQ Corporation have a density from 1.6g/cubic cm. to about 1.4 g/cubic cm.

The future demand for sodium silicate is a function of growth of the end-user industries, mainly soap and detergent factories, pulp and paper mills, paint, pigment and adhesive factories.

Few Indian Major Players are as under

- **Abhiraami Chemicals Ltd.**
- **Balls & Cylpebs Ltd.**
- **Kiran Global Chems Ltd.**
- **Shri Aster Silicates Ltd.**

Project at a Glance

PROJECT AT A GLANCE				(USD in Thousands)			
COST OF PROJECT				MEANS OF FINANCE			
Particulars	Existing	Proposed	Total	Particulars	Existing	Proposed	Total
Land & Site Development Exp.	0.00	62.50	62.50	Capital	0.00	234.50	234.50
Buildings	0.00	304.00	304.00	Share Premium	0.00	0.00	0.00
Plant & Machineries	0.00	340.00	340.00	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	78.00	78.00	Cash Subsidy	0.00	0.00	0.00
Technical Knowhow Fees & Exp.	0.00	50.00	50.00	Internal Cash Accruals	0.00	0.00	0.00
Franchise & Other Deposits	0.00	0.00	0.00	Long/Medium Term Borrowings	0.00	703.51	703.51
Preliminary & Pre-operative Exp	0.00	6.00	6.00	Debentures / Bonds	0.00	0.00	0.00
Provision for Contingencies	0.00	34.00	34.00	Unsecured Loans/Deposits	0.00	0.00	0.00
Margin Money - Working Capital	0.00	48.51	48.51				
TOTAL	0.00	938.01	938.01	TOTAL	0.00	938.01	938.01

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	279.96	713.16	289.96	2400.00	0.00	100.00	279.96	0.00	279.96	1.00	0.00
2-3	590.50	969.87	880.46	1800.00	0.00	100.00	590.50	0.00	590.50	1.00	0.00
3-4	887.50	1220.40	1767.96	1200.00	0.00	100.00	887.50	0.00	887.50	1.00	0.00
4-5	1166.77	1459.51	2934.73	600.00	0.00	100.00	1166.77	0.00	1166.77	1.00	0.00
5-6	1425.45	1683.45	4360.18	0.00	0.00	100.00	1425.45	0.00	1425.45	1.00	0.00

Project at a Glance

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	1.12	1.12		1.88	1.88	2.22		27.62%	6.70%	5.34%	1042.79	84.78%	1.34	0.73
2-3	1.43	1.27		0.96	0.96	1.23		32.39%	14.36%	9.65%	1208.59	84.22%	1.53	1.08
3-4	1.79	1.43	1.77	0.44	0.44	0.64		35.57%	19.64%	12.69%	1381.06	84.21%	1.60	1.61
4-5	2.20	1.59		0.15	0.15	0.31		37.69%	23.29%	14.83%	1553.52	84.20%	1.57	2.29
5-6	2.68	1.77		0.00	0.00	0.13		39.04%	25.77%	16.31%	1725.99	84.19%	1.48	5.77



Project at a Glance

BEP

BEP - Maximum Utilisation Year	5
Cash BEP (% of Installed Capacity)	65.81%
Total BEP (% of Installed Capacity)	69.31%

IRR, PAYBACK and FACR

Internal Rate of Return .. (In %age)	20.82%
Payback Period of the Project is (In Years)	2 Years 9 Months
Fixed Assets Coverage Ratio (No. of times)	4.146

Major Queries/Questions Answered in the Report?

- 1. What is Sodium Silicate from Rice Husk Ash industry ?**
- 2. How has the Sodium Silicate from Rice Husk Ash industry performed so far and how will it perform in the coming years ?**
- 3. What is the Project Feasibility of a Sodium Silicate from Rice Husk Ash Plant ?**
- 4. What are the requirements of Working Capital for setting up a Sodium Silicate from Rice Husk Ash plant ?**

- 5. What is the structure of the Sodium Silicate from Rice Husk Ash Business and who are the key/major players ?**
- 6. What is the total project cost for setting up Sodium Silicate from Rice Husk Ash plant ?**
- 7. What are the operating costs for setting up a Sodium Silicate from Rice Husk Ash plant ?**
- 8. What are the machinery and equipment requirements for setting up a Sodium Silicate from Rice Husk Ash plant ?**

- 9. Who are the Suppliers and Manufacturers of Plant & Machinery for setting up a Sodium Silicate from Rice Husk Ash plant ?**
- 10. What are the requirements of raw material for setting up a Sodium Silicate from Rice Husk Ash plant ?**
- 11. Who are the Suppliers and Manufacturers of Raw materials for setting up a Sodium Silicate from Rice Husk Ash plant ?**
- 12. What is the Manufacturing Process and Formulations of a Sodium Silicate from Rice Husk Ash plant ?**

- 13. What is the total size of land required for setting up a Sodium Silicate from Rice Husk Ash plant ?**
- 14. What will be the income and expenditures for a Sodium Silicate from Rice Husk Ash plant ?**
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18. What are the Personnel (Manpower) Requirements for setting up a Sodium Silicate from Rice Husk Ash Business?

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20. What is the time required to break-even?

21. What is the Break-Even Analysis of a Sodium Silicate from Rice Husk Ash plant?

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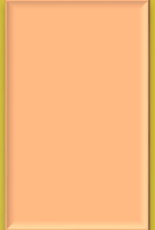


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Who are we?

- *One of the leading reliable names in industrial world for providing the most comprehensive technical consulting services*
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What do we offer?

- *Project Identification*
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- *Market Research Reports*
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- *Entrepreneur India (An Industrial Monthly Journal)*



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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*



- *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*

- *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*

- *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*

- *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.*

- *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.*

- *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*

- *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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