Make Money from Waste.

How a Rice Miller can earn Extra Income in Extraction of Sodium Silicate from Rice Husk Ash (RHA) Project

Introduction

Rice husk ash (RHA), a by-product from the rice industry, was used as principal source of amorphous silica for the production of sodium silicate solution used for the replacement of standard commercial sodium silicate in the mix-design of metakaolin based geopolymer composites. Three initial concentrations of NaOH were considered with the aim to investigate on the optimum dissolution and formation of silica oligomers capable to act as binder during the geopolymerization. Results (FT-IR and XRD) showed that RHA-NaOH sodium silicate solutions have characteristics similar to that of standard commercial sodium silicate and the residual carbonates present in the viscous pastes can be monitored during the preparation of geopolymers using the mix-design. Combined 25Â vol% standard sodium silicate solution with vol% of RHA-NaOH based sodium silicate solution conducted to good polycondensation, densification, high flexural strength and low porosity similar to that of the standard matrix of metakaolin based composites. The new approach is found promising for the significant reduction of the Global Warming Potential of Geopolymers.

Rice husk / hull ash (RHA) contains:

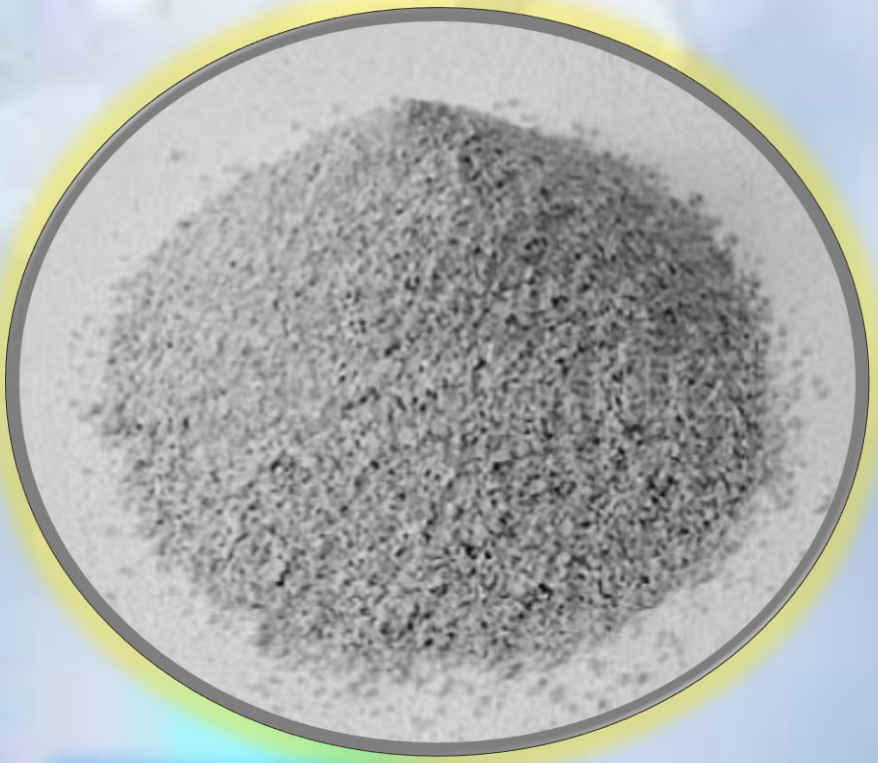
Biogenic Amorphous Silica

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 (Na2O) and silicon dioxide or silica (SiO2) 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 (Na2O) and silicon dioxide (SiO2) combined in various ratios.



Varying the proportions of SiO2 to Na2O 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 are 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 Sodium Silicate from Rice Husk Ash Plant ?

4. What are the requirements of Working Capital for setting up 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 Sodium Silicate from Rice Husk Ash plant ?

8. What are the machinery and equipment requirements for setting up Sodium Silicate from Rice Husk Ash plant ?

9. Who are the Suppliers and Manufacturers of Plant & Machinery for setting up Sodium Silicate from Rice Husk Ash plant ?

10. What are the requirements of raw material for setting up Sodium Silicate from Rice Husk Ash plant ?

11. Who are the Suppliers and Manufacturers of Raw materials for setting up Sodium Silicate from Rice Husk Ash plant ?

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Tags

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Investment Opportunity in Extraction of Sodium Silicate form Rice Husk & Rice Hull, Application of silica extracted from rice husk ash, Study of the Efficiency of Extracted Sodium Silicate from Rice Husk Ash, Method of obtaining Sodium Silicate from Rice Husk, Obtaining Sodium Silicate from Rice Husk Ash, Extraction Process of Sodium Silicate from Rice Hull, Mechanical Performance of Rice Husk Ash, Best Small Business Ideas in India to Start Business, 100% Risk Free Business, Profitable Small Business Ideas with Small Investment, Best Home Based Business Ideas, Best Part Time Business Ideas to Start New Business, Best Ideas for Low Budget Business and More Profits, Top Best Small Business Ideas for Women in 2017, Most Profitable Business Ideas with Low Investment, Easy Simple Best Unique Low Cost Small Investment, Start up Business Ideas, Secret to Making Money by Starting Small Business, Small Business Ideas with Small Capital, Top Best Small Business Ideas for Beginners 2017, Small Business But Big Profit in India, Best Low Cost Business Ideas, Small Business Ideas that are Easy to Start, How to Start Business in India, Top Small Business Ideas in India for Starting Your Own Business, Top Easy Small Business Ideas in India, Small Investment Big Returns,

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