RISE EARTH INFRACON PVT LTD

Raipur - 492001
CHATTISGARH

Presents

INNOVATIVE (First Time In India)

SODIUM SILICATE POWDER
(Water Soluble)

PRODUCT CHARACTERISTICS
&
APPLICATIONS DATA

SODIUM SILICATE HYDRATES & ANHYDROUS POWDERS

The soluble silicates are water soluble glasses generally manufactured from varied proportion to meet the needs of different users , Included among these products are the sodium which range from readily and highly soluble crystalline forms to lumps and powders which are sparingly soluble, from slightly sticky fluids to heavy viscous solutions which barely flow

For those preferring sodium silicates in the form of amorphous powders a variety of products is included in the line , They include both hydrated and anhydrous from which SiO_2 , Na_2O ratios from 2.00 to 3.22.

Sodium silicate powders are desirable for a variety of reasons , as an integrated in dry blended detergents and specially cements, to control interactions with other chemicals where liquids compatibility may be a problem or where reactivity must be delayed , for convenience in storage and handling or to avoid freezing , or to increase the concentration of silicate solutions beyond commercially available ranges. The chemical and physical characteristics of the most commom soluble silicate powders produced by are described in this bulletin , if you would like further details on their properties or applications or variations of these products to meet specially requirements , please contact us.

TECHNICAL SPECIFICATIONS

Sodium Silicate Powder With Brand Name

PROPERTIES	SODIUM SILICATE NEUTRAL	SODIUM SILICATE ALKALINE
Brand Name Na_2O/SiO_2	Bondsil - 33 1:3.1	Bondsil - 22 1:2.3
Na_2O/K_2O % SiO_2	19.00 59.85	26.1 60.5
Loss on Ignition Solubility	21.14 30 min	15.0 30 min
Residue % Fe	<2.0 <50 ppm	<2.0 <50 ppm
Cl ions pH	<250ppm +11	<250 ppm +12

Any Specific Ratio On Request ,

Note :

If Sodium silicate liquid is desired mix the powder in water (not exceeding 38%) by weight of water and immediately stir vigoursly for at least 10 mins, failure to stir initially can lead to formation of lumps which will be slow in dissolving.

CHARACTERISTICS

The various powdered sodium silicate are distinguished by one or more of the following characteristics ,

- Chemical composition, SiO2, Na2O ratio,
- Water content, anhydrous or hydrous,
- Particle size distribution, fine powder or granules.

Anhydrous (Water - Free) Sodium silicate glass is available as powders of various particle size at the same SiO2/Na2O ratios as the two more popular commercial liquid silicates. Hydrates products at the same ratio are offered for their more rapid rate of solution. The various powdered silicates and their composition is listed in Table - 1

TABLE 1 - TYPICAL PROPERTIES OF SODIUM SILICATES IN POWDER FORM

PRODUCT	Wt. Ratio SiO2/Na2O	% Na2O	% SiO2	% H2O	Approx. Density lb/ft.^{3} (kg/m^3)		Particle Distribution (Tyler Screen)
					Untamed	Tamped	
Bondsil - 33	3.22	23.30	75.0	0	65(1041)	102(1633)	Thru 20 mesh
Bondsil - 33	3.22	23.10	74.4	0	54(865)	88(1409)	Thru 65 mesh
Bondsil - 33	3.22	19.20	61.8	18.5	44(705)	66(10570	90%Thru 100 mesh
Bondsil - 22	2.00	32.70	65.4	0	45(721)	73(1169)	Thru 65 mesh
Bondsil - 22	2.00	32.70	65.4	0	46(737)	74(1185)	Thru 200 mesh
Bondsil - 22	2.00	27.00	54.0	18.0	46(737)	61(977)	90%Thru 100 mesh

TECHNICAL ADVICE

Table 2 lists some common uses for sodium silicate powders, the properties discussed in this bulletin may suggest new uses, Technical Representation will be happy to discuss individual requirements , submit samples, and provide application assistance

For More Information Contact Us :

TABLE 2 - COMMON USES FOR SODIUM SILICATE POWDERS

APPLICATION	FUNCTION	PRODUCT (S) RECOMMENDED
CERAMICS		
Manufacture of grinding wheels	Binder	Bondsil - 33
Binder for abrasive grit material	Binder	Bondsil - 33
CONCRETE		
Improving hardness and increased resistance to water penetration	Binder	Bondsil - 33
ENAMELWARE & GLAZES		
Making acid-resistant frits	Binder	Bondsil - 22
FOUNDRY		
Sand binder in the Antioch process	Binder	Bondsil - 33
METALS		
Cleaning aluminium	Detergency	Bondsil - 33
Corrosion prevention	Protective Coating	
PAINTS		
Dry paints mixture that can be combined with water when ready for application	Coating	Bondsil - 33
REFRACTORY CEMENTS		
• Furnace cements for laying up the brickwork of boiler settings & other heating units, also for kilns, industrial ovens & hearths	Binder	Bondsil - 33
• Linings for crucibles, brass furnace, ladles	Binder	Bondsil - 33
• Stove & patching cements for large & small jobs of cementing & patching	Binder	Bondsil - 33
• Cements for repairing the linings around coke over doors	Binder	Bondsil - 33

SODIUM SILICATE POWDER

Bondsil (First Time In India)

TYPICAL PROPERTIES & USE OF SODIUM SILICATE POWDER

1.The bondsil is nothing but an important substitude of sodium silicate powder. it is a water soluble powder manufactured from varied properties of an alkali metals & SiO2. We made the various range of silicate products to meet the need of difference users. They include both hydrated & unhydrated forms with SiO2, Na2O ratios from 2.00 to 3.22.

Different uses of bondsil are as an ingredient in dry blended detergents.

2.Specially cements to control interaction with other chemicals where liquid compatibility may be a problem or where reactivity must be delayed, Also easy for storage, handling and avoid freezing.

3.It is a fine white powder and has a ratio 3.2, as well as all the other liquid silicates, when dissolves it forms a hazy, colourless solution. Bondsil are used for several specialised Refractory compounds, Detergents & Acid resistance cements. As acid resistant, its binding strength is developed even if it does not dissolved even if it does not dissolve completely after adding water, such cements are proved very satisfactory in many industrial applications, It is a fine white powder and has a ratio 3.2, as well all the other liquid silicates, when dissolved it forms a hazy, colourless solution, Bondsil.

5. Bondsil-33 is also preferred for making acid resistant Enamal frits. In making enamal frits the speed of reaction or the rate of melting of powder depends on the particle size. Also used as a binder in some cements & briqueting of various ares, and other mineral products.

6. Bondsil-33 should not stand for more length of time in open packages ar in containers that are not air-tight and water proof contact with air may result in taking (due to moisture absorption) and reduction of its lubility (due to absorption of carbondioxide).

7. Use of Bondsil In Refractory & Chemical Resistant Cements: Used as binder where stability of resistance to chemicals is required Silicate binder develops high green strength, by air setting without heat. They also impart increased tire stength, they are corrosive. They are easy and safe to handle. They forms no fumes on fire hazards. They are very much useful in refractories as refractory mortars and ramming Gunning, Patching mixes in practically all refractory or chemical resis tant construction and in their maintenance.

Some examples includes, Boiler incinerators, capolas, smelting furnaces. coke ovens, blast furnaces, open bearths, oxygen converters, electornic steel furnaces, heat treating furnaces, ladle linings, catalytic cracking chambers, sevage works, cheminey construction, electrolytic cells, acid manufacturing and soaking pits etc.

8. Sodium Silicate Powder (Alkaline Grade): Bondsil-22 Similar in appearance as Bondsil-33 and has a ratio of 2.3. It disso. Ives more quickly and easily comparing to Bondsil-33 due to its higher alkalinity. In some cases because of its rapid dissolving powder it is preferable where neutral grade powder dissolves slowly. Wherever high alkali containt is required alkaline grade is applicable.

Bondsil-22 is mainly used in specialised coatings and refractory cem- ents. Bondsil-22 is useful as binders for dry minerals. It can be utili- sed in cements with combination of liquid silicate binder where it is de- sirable to increase the total silicate solid containt without further incre- asing the velocity of the compound.

9. Effects Of Silicate (Bondsil) Composition: (For Detergent) It is extensively used in household and industrial detergent powder all over Europe and America. This is a common constituent of all the det ergent powder in Europs and America when no detergent is allowed with phosphate. You can eliminate the use of Tri Sodium Phosphate, Tri So dium Poly Phosphate, Sodium Perborate and Geolite.

Suggested Method Of Use

In detergent powder the Bandsil-33 can directly be added in deterge- nt powder at the final stage of mixing without any extra ordinary chang es in the process of production, it can be added only after full neutralis- ation of acid slurry.

ADVANTAGES :

a) It improves the ability to remove vegetable oil stains since bondsil is a strong oil emulsifier.

b) The release of alkali is gradual there by it is good to the hand without decreasing the effectiveness.

c) The release of silica in colledal stage adds to the anti redepositions pr. opertiesof the detergent powder, this property can bring down the quality of CMC leaning in decreasing cost.

d) It works as costly but effective builder avoid the use of water polluting Tri Sodium Phosphate and Sodium Tri Poly Phosphate

e) It works as an ion exchange thereby taking hard water very effectively.

f) Use of this material is simple and does not need major process change.

g) It is good corrosion inhibitor thereby not harming washing machine components if used for machine detergent.

h) It is a substitute of Geolite and Sodium Perborate.

Quantum Of Use:

It will be difficult to recommend exact percentage of Bondsil as the quantity depends your brand positioning and targetted market segment, however a use of 5% to 12 % Bondsil can be suggested.

Effects Of Silicate (Bondsil) Composition:

The more alkaline silicate import creator plasticity to cement structures and result in higher green strength, concentrated wet mixes may some what sticky. The tendency of low ratio silicate to fuse at high temperatures may be offset in practice by the fact that less of it is needed to obtain good strength at a given consistency, a refractory cement made from a more highly alkaline silicate will contain less water making for denser structure with less shrinkage.