Elchemy

ELVISC – FuSi™ (Fumed Silica)

Technical Datasheet

1. Technical Datasheet

Property	Specification
Physical Properties	
Appearance	White, fluffy powder
Physical Form	White, fluffy powder
Odor	Odorless
Molecular Weight	60.08 g/mol
Density / Specific Gravity	2.2 g/cm^3
Viscosity	Not applicable (used as a thickening agent)
Refractive Index	n20/D 1.46
pH (aqueous solution)	3.7 - 4.5 (in 4% dispersion)
Assay / Purity	≥ 99.8% SiO_2
Chemical Properties	
Ionic Nature	Non-ionic, but surface silanol groups (Si-OH) can engage in hydrogen bonding. Standard fumed silica is acidic in nature.
Incompatibilities	Incompatible with fluorine, oxygen difluoride, chlorine trifluoride, strong acids, and strong bases.
Hazardous Reactions / Decomposition Products	The material is stable and not normally reactive. Hazardous decomposition products are not expected under normal conditions of use. Thermal decomposition may generate oxides of carbon.
Thermal Properties	
Melting Point	1700 °C
Boiling Point	2230 °C
Flash Point	Not applicable
Decomposition Temperature	> 400 °C
Thermal Stability	Stable under recommended storage and handling conditions.
Solubility	
Solubility in Water	Practically insoluble; forms a colloidal dispersion.
Solubility in Ethanol	Practically insoluble.

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Property	Specification
Solubility in Glycerol	Forms dispersions.
General Organic Solvents	Practically insoluble.
Acids	Practically insoluble, except in hydrofluoric acid.
Alkali Hydroxide Solutions	Soluble in hot solutions of alkali hydroxide.

2. Processing Methods

High-Solids Anti-Corrosion Coating

A formulation designed for protective coatings with good sag resistance and pigment suspension.

Key Ingredients	Indicative Dosage (% w/w)
Epoxy Resin	50.0%
Polyamide Curing Agent	25.0%
Titanium Dioxide	15.0%
Talc	7.5%
Fumed Silica	1.5%
Xylene	1.0%

General Purpose RTV Silicone Sealant

A one-component, moisture-curing sealant for construction and general industrial use.

Key Ingredients	Indicative Dosage (% w/w)
Polydimethylsiloxane (PDMS) Polymer	75.0%
Plasticizer (e.g., Dimethylpolysiloxane)	12.0%
Fumed Silica	7.0%
Crosslinker (e.g., Methyltriacetoxysilane)	5.0%
Adhesion Promoter	1.0%

3. Dosing by Application

Application	Recommended / Max Dosage
Paints & Coatings	0.5% - 5.0%
Adhesives & Sealants	2.0% - 8.0%
Resins (Epoxy, Polyester)	0.5% - 5.0%

Application	Recommended / Max Dosage
Powder Coatings	0.5% - 1.5%
Rubber (Silicone)	5.0% - 30.0%

The information and data contained herein are believed to be accurate but may not be all inclusive and should only be used as a guide. The information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the product for his particular use and on condition that they assume the risk of the use thereof.

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