

MATERIAL SAFETY DATA SHEET

TETA EPOXY HARDENER

I. 24-HOUR EMERGENCY CONTACT INFORMATION

CHEM-TEL United States.....800-255-3924
International.....813-248-0585

II. HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

Substance, Trivial Name.....CAB-O-SIL®, amorphous fumed silica
Formal Name.....Synthetic Amorphous Silicon Dioxide, Crystalline-free
Chemical Name.....Oxide
Chemical Formula.....SiO₂
Molecular Weight.....60
CAS NO.....112945-52-5 (Specific), 7631-86-9 (General)
% by weight.....99+

Trade Names and Synonyms: fumed silica, M-5, Colloidal silica, Synthetic silica

Material Uses: Used as a rheology control, reinforcement and free flow agent in Silicone Rubber, Coatings, Adhesives, and Pharmaceuticals etc.

Product Description.....Fumed Silica

III. PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point.....2230°C/4046°F
Melting Point.....1700°C/3092°F
Vapor Pressure.....Not Applicable
Density.....2.2 g/cm³ @ 25°C/77°F
Viscosity.....Not Applicable
Evaporation Rate (butyl acetate = 1).....Not Applicable
pH.....4.0 (approximately 4% silica in water)
% Volatile by Volume.....Not Applicable
Solubility in Water.....Insoluble in water
Water / Oil Distribution.....Not Applicable
Pour Point.....Not Applicable
Appearance and Odor.....White, Odorless
Odor Threshold.....Not Applicable
Physical State.....Solid Powder

V. REACTIVITY DATA

Extinguishing Media.....Not Applicable
Unsuitable Media.....Not Applicable
Flash Point.....Not Applicable
Flash Point Method.....Not Applicable
Lower Explosive Limit.....Not Applicable
Upper Explosive Limit.....Not Applicable
Ignition in Air.....Not Defined
Flammable Classification.....Not Applicable
Flame Propagation in Air.....Not Applicable
Fire Fighting Procedure.....Not Applicable
Combustion Hazards.....Not Applicable
Protective Equipment.....Standard equipment for structural fire fighting
Unusual Fire Hazards.....See section III
Dust Explosion Potential.....Will not create or support conditions for a dust explosion
Sensitivity to Impact.....Not Applicable
Static Discharge Effects.....Static electricity can build up when subjected to friction

Chemical Stability.....	Stable
Conditions to Avoid.....	None
Incompatible Materials.....	Not Applicable
Reactivity.....	Stable
Hazardous Decomposition.....	None
Hazardous Polymerization.....	None

VI. HEALTH HAZARD DATA

Main Hazards: Dry powdered materials can build static electrical charges when subjected to friction. Proper precautions when using CAB-O-SIL fumed silica in the presence of flammable or explosive gasses and liquids should be taken to prevent accidents.

Potential Health effects:

- Eye: May cause irritation at high dust levels
- Skin: May cause drying of skin
- Ingestion: None expected
- Inhalation: Temporary discomfort due to inhalation of dust
- Chronic: Not listed as carcinogen by IARC, NTP, Z list or OSHA
- Teratology: None identified
- Reproductive Info: None identified
- Target Organs: Lung

Routes of exposure: Ingestion, Inhalation, Eye and Skin

Acute Inhalation Effect: None known other than possible temporary discomfort

Acute Ingestion Effect: None expected

Acute Eye Effect: Irritation at high dust levels

Acute Skin Effect: May cause drying of skin
Chronic Inhalation Effect: There is no human data available that suggests that occupational exposures to synthetic fumed silica will cause adverse chronic health effects. Long-term inhalation animal studies involving a variety of insoluble solid particles have resulted in chronic inflammation, lung fibrosis and lung tumors in rats. Tumors were not observed in similar studies using other animal species (i.e., mouse and hamster). Most inhalation toxicologists feel the tumor response is unique to rats and not relevant to human exposure. Synthetic fumed silica was not used in these tests. The researchers who conducted the above studies felt the adverse reactions in the rat were due to high exposure levels of insoluble dusts overwhelming the lung clearance mechanisms (lung overload phenomenon) and is not the result of specific chemical effect of the particulate tested. This effect is not expected to occur from occupational exposure to synthetic amorphous silica.

Chronic Ingestion effect: None expected

Chronic eye effect: None expected

Chronic skin effect: None expected

Sensitization to Material: None expected

Medical Conditions Aggravated: Dermatitis

Synergistic Materials: None expected

Mutagenicity: In-vitro and in-vivo tests negative for mutagenicity

Reproductive Toxicity: None known

Teratogenicity: None known

Carcinogenicity: Not listed as a carcinogen By IARC, NTP, Z list or OSHA

LD50 for Material:

Greater than 5,000 mg/kg, acute oral rat
Greater than 5,000 mg/kg, acute dermal for rabbits
Greater than 5,000 mg/kg, rat No OECD method
Oral-rat 3,160 mg/kg (SAX)
LC50 for Material: Not applicable
Greater than 0.139 mg/ quarter hour, Rat acute inhalation

First Aid:

Inhalation: Not hazardous. In case of discomfort, remove exposed individual to fresh air
Ingestion: Not hazardous. No treatment required
Eyes: Immediately flush lightly with plenty of water for 15 minutes. Get medical attention
Skin: Not hazardous

HMIS Ratings.....Health (1) – Flammability (0) – Reactivity (0)

VII. PRECAUTIONS FOR SAFE HANDLING and USE

Handling Precautions: Ventilated work area if necessary. Take precautionary measures against possible build-up of electrostatic charge. Assess manual handling of bagged product; take suitable precautions.

Storage: Product should be stored dry and away from volatile chemicals.

Hygienic Practices: Avoid eye contact. Wash exposed skin and clothing frequently.

Special Precautions: Avoid creating dust. Clean up spills promptly.

Personal Precautions: Wear goggles if release creates conditions where eye contact is probable. If airborne dust concentrations exceed the applicable exposure limits, then an approved respirator for dust/mist is recommended.

Spill Cleanup Measures: Spills may be collected, preferably by vacuum, and placed in suitable container for disposal.

Environmental Precautions: Fumed silica is a not hazardous waste. Dispose of in landfill in accordance with international, national, U.S. federal and local laws and regulations.

VIII. CONTROL MEASURES

Inhalation Standards:

TLV (U.S.) = 10 mg/cubic meter total dust particles not otherwise classified
PEL (U. S.) = 10 mg/cubic meter for nuisance dust
MAK (Germany) = 4mg/cubic meter total dust
OES (U.K.) = 6 mg/cubic meter total inhalable, 2.4 mg/cubic meter respirable

Eye-Face Protection: Safety glasses with side shields or goggles recommended preventing eye contact.

Skin Protection: Drying may occur. Use barrier cream prior to skin contact.

Protective Clothing: None required

Respiratory Protection: Approved dust/mist respirator recommended for illegal concentrations

Engineering Controls: Use general or local exhaust ventilation to meet exposure limit requirements

Other Protective Measures: Wash exposed skin and clothing frequently

IX. REGULATORY INFORMATION (Not meant to be all-inclusive)

UN Number.....Not Classified
UN Proper Shipping Name.....Fumed silica, Crystalline-free
UN Class.....Not Classified
UN Packing Group.....Not Classified
U.S. Rail Regulations.....Not Classified

National Registries: CAB-O-SIL®

Australia: AICS Australian Inventory list, CAS # 7631-86-9

Canada: CEPA, Canadian Environmental Protection Act, 6th Amendment Domestic Substances List, CAS #7631-86-9.

Europe: EINECS, European Inventory of Existing Commercial Chemicals Substances, #2315454.

Japan: MITI, Ministry of International Trade and Industry List of Existing Chemical Substances. #1-548(1-810)

United Kingdom: Control of Substances Hazardous to Health Regulations 1994 – listed in Guidance Note EH40. Chemicals (Hazardous Information and Packaging for Supply) Regulation 1994-Not listed

United States: TSCA, Toxic Substance Control Act, CAS #7631-86-9

U.S. Clean Air Act, 1990: (CAA Section 112, 40 CFR82): CAB-O-SIL® fumed Silica does not contain and is not manufactured with Class I or Class II ozone depleting chemicals, as defined in the Clean Air Act of 1990.

Comprehensive Environmental Response, Compensation & Liability Act, (CERCLA, 40 CFR302): Not hazardous. Superfund Amendments & Reauthorization Act (SARA) Title III.

Emergency Planning & Community Right-To-Know ACT (EPCRA, 40 CFR355): Non-Hazardous

SARA Section 311 (40 CFR 370): MSDS Requirements: not regulated

SARA Section 312 (40 CFR 370): Applies in quantities greater than or equal to 10,000 lbs.

SARA Section 313 (40 CFR 372): Does not contain any of the substance identified under Section 313 as toxic.

U.S. CONEG Legislation: Not determined.

U. S. FDA Regulations: The use of CAB-O-SIL® has been approved by the United States Food and Drug Administration (FDA) for many food applications as both direct food additive at levels up to 2% by weight and as a substance allowed in the manufacture of materials that come in direct contact with food in various producing, manufacturing, packing, preparing, transporting and holding operations. Pertinent sections can be found in Title 21 Code of Federal Regulations, Part 172 Food Additives Permitted for Direct Addition to Food for Human Consumption.

Safety and Risk Phrases: S17 Keep away from combustible material may form static electricity S25 Avoid contact with eyes; S36 Wear suitable PPE; S37 Wear suitable gloves; S38 In case of insufficient ventilation, wear suitable respiratory equipment; R36/R37/R38 Irritating to eyes, skin, and respiratory system.

Pharmaceutical Information: CAB-O-SIL® meets all of the requirements for colloidal silicon dioxide as describe in the U.S. Pharmacopoeia National Formulary. It also meets the requirements as described in the European Pharmacopoeia and the Deutsches Arzneibuch (DAB 1996) and the Japanese Pharmacopoeia. It appears in the Handbook of Pharmaceutical Excipients under the monograph, colloidal silicon dioxide.

Safety and Risk Phrases: S17 Keep away from combustible material may form static electricity S25 Avoid contact with eyes; S36 Wear suitable PPE; S37 Wear suitable gloves; S38 In case of insufficient ventilation, wear suitable respiratory equipment; R36/R37/R38 Irritating to eyes, skin, and respiratory system.

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North America
2425 SW 36th Street
San Antonio, Texas 78237 USA
Phone: 210 434 5043

South America
Estrada de Acesso à Zona
Industrial Portuária de Suape, s/no.
Recife, PE, Brazil 55.590-000
Phone: 55 81 3501 0023

Europe
P.O. Box 6, 4190 CA
Geldermalsen, The Netherlands
Phone: 31 345 587 587

Asia Pacific
No. 7A, Tuas Avenue 3
Jurong, Singapore 639407
Phone: 65 6861 6118

Middle East
P.O. Box 17324
Dubai, UAE
Phone: 971 4881 3566

www.fgspipe.com • fgspipe@nov.com

2700 West 65th Street
Little Rock, Arkansas 72209
Phone: 1 (501) 618-2256

25 S. Main Street
Sand Springs, Oklahoma 74063
1 (918) 245-6651

NOV Fiber Glass Systems

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MSD5300 January 2011