



HMIS Index:

0 - Minimal
1 - Slight
2 - Moderate
3 - Serious
4 - Severe

MATERIAL SAFETY DATA SHEET

CAB-O-SIL[®] Untreated Fumed Silica

HMIS Rating:

1 - Health
0 - Flammability
0 - Reactivity

MSDS has been prepared in accordance with ANSI standard Z400.1-1998, EC Directive 91/155/EEC and 93/112/EEC.

***SECTION I – Chemical Product and Company Identification**

Trade Name

CAB-O-SIL[®] Untreated Fumed Silica

Product Type

Silicon Dioxide, Synthetic,
Crystalline-Free

Date Created: November
1996

Date Revised: August
2000

Manufacturer/Supplier

Cabot Corporation
700 E. U.S. Highway 36
Tuscola, IL 61953-9643
US

Cabot Corporation
3603 S. Saginaw Road
Midland, MI 48640
US

Cabot GmbH
Josef-Bautz-Strasse 15
D-63457 Hanau
Germany

Cabot Carbon Ltd.
Barry Site, Sully Moors Road
Sully, South Glamorgan CF64 5XP
Wales, UK

Telephone No.

1-217-253-3370 (US)
49-6181-5050 (Germany)
44-1446-736 999 (UK)

Facsimile No.

1-217-253-4334 (US)
49-6181-505 201
(Germany)
44-1446-737 123 (UK)

Emergency Telephone No.

Chemtrec (US) 1-800-424-9300
Chemtrec (International) 1-703-527-3887
Cabot (US) 1-217-253-5595
Cabot (Germany) 49-7623-707 545
Cabot (UK) 44-1446-709 641

SECTION II – Composition/Information on Ingredients

Substance Trivial Name

CAB-O-SIL[®] Amorphous Fumed Silica

Formal Name

Synthetic Amorphous
Silicon Dioxide, Crystalline
Free

Chemical Family

Oxide

Component

SiO₂

CAS No.

112945-52-5 (Specific)
7631-86-9 (General)

EINECS No.

2315454

% by Weight

100

EU Classification

Not Classified

Trade Names and Synonyms

CAB-O-SIL[®] fumed silica, L-50, L-90, LM-130, LM-150, M-5, M-5P, PTG, MS-55, H-5, HS-5, EH-5, LM-130D, LM-150D, M-7D, MS-75D, S-17D, HP-60, M-8D, Colloidal Silica, Synthetic Silica, Colloidal Silicon Dioxide, Silica Colloidalis Anhydrica, Light Anhydrous Silicic Acid

Material Uses

Used for rheology control, reinforcement, and free flow agent in silicone rubber, coatings, adhesives, pharmaceuticals and other applications.

SECTION III – Hazards Identification

Emergency Overview

Caution: Fine white powder. May be harmful if inhaled. Do not breathe dust. Dry powdered materials can build static electrical charges when subjected to friction. Proper precautions should be taken when using this material in the presence of flammable or explosive gases and liquids.

Routes of Exposure

Inhalation, eye, skin.

Potential Health Effects

Eye: High concentrations may cause mechanical irritation to eyes.

Skin: May cause drying of skin.

Ingestion: No adverse effects expected.

Inhalation: May be harmful if inhaled. May cause irritation of respiratory tract at levels above industry standards.

Chronic (Cancer Info.): Not listed as a carcinogen by IARC, NTP, Z List or OSHA.

Target Organs: Lung.

Medical Conditions Aggravated: Individuals with pre-existing respiratory conditions such as asthma or skin conditions such as dermatitis may be at greater risk from exposure to material.

SECTION IV – First Aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If symptoms develop, seek medical attention.

Ingestion: Do not induce vomiting. If conscious, rinse mouth with water. If symptoms develop, seek medical attention.

Eyes: Immediately flush lightly with plenty of water for at least 15 minutes. If symptoms develop, seek medical attention.

Skin: Wash skin for personal hygienic reasons. If symptoms develop, seek medical attention.

Advice to Physicians

Treat symptomatically for lung or eye irritation, if present.

SECTION V – Fire Fighting Measures

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 Applicable

Flammability Classification

Not Applicable

Flame Propagation in Air

Not Applicable

Fire Fighting Procedure

Not Applicable

Combustion Hazards

Not Applicable

Protective Equipment

Standard personal protective equipment for structural firefighting.

Unusual Fire Hazards

See Section III.

Dust Explosion Potential

CAB-O-SIL® fumed silica is an inorganic dust and will not create nor support conditions that would result in a dust explosion or fire.

Sensitivity to Impact

Not Applicable

Static Discharge Effects

Fumed silica can build up static electrical charges when subjected to friction. See Section III.

SECTION VI – Accidental Release Measures

Personal Precautions

Wear goggles if release creates conditions where eye contact is probable. Ventilate area if necessary. If user operations generate dust, then an approved respirator for dust/mists is recommended.

Spill Cleanup Measures

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

Environmental Precautions

None

SECTION VII – Handling and Storage

Handling & Storage Precautions

Handling: Avoid contact with skin and eyes. Avoid creating dust. Do not breathe dust.

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

Hygienic Practices

Wash exposed skin frequently. Good practices should be followed in regard to work clothing.

Special Precautions

None

*SECTION VIII -- Exposure Controls/Personal Protection

Inhalation Standards

TLV (US) = 10 mg/m³ total dust for particles not otherwise classified.

PEL (US) = 10 mg/m³ for nuisance dust.

MAK TRGS 900 (Germany) = 4 mg/m³ inhalable dust.

OES (UK) = 6 mg/m³ total inhalable, 2.4 mg/m³ respirable dust.

TLV (Australia) = 10 mg/m³ total dust containing no asbestos and < 1% crystalline silica.

Eye-Face Protection

Safety glasses are recommended. Goggles may be necessary at high dust concentrations.

Skin Protection

Drying may occur. Barrier cream application prior to skin exposure may assist in the removal of silica from the skin.

Protective Clothing

Wear appropriate clothing to minimize skin contact.

Respiratory Protection

An approved air-purifying respirator (APR) for particulates may be appropriate to control exposure to dust. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air supplied respirator if there is any potential for uncontrolled release, exposure levels are not known, or any circumstances where air-purifying respirators may not provide adequate protection. Use of respirators must include a complete respiratory protection program in accordance with national standards and current best practices.

Respiratory protection: The following agencies/organizations approve respirators and/or criteria for respirator programs:

US: NIOSH approval under 42 CFR 84 required.
OSHA (29 CFR 1910.134)
ANSI Z88.2-1992

EU: CR592 Guidelines for the Selection and Use of Respiratory Protection.
Germany: DIN/EN 143 Respiratory Protective Devices for Dusty Materials.

UK: BS 4275 Recommendations for the Selection, Use and Maintenance of Respiratory Protective Equipment.
HSE Guidance Note HS(G)53 Respiratory Protective Equipment.

SECTION VIII – Continued*Engineering Controls**

If user operations generate dust, fume, or mist, use ventilation to minimize dust levels.

Other Protective Measures

Wash exposed skin frequently. Good practices should be followed in regard to work clothing.

SECTION IX – Physical and Chemical Properties

Physical State Fine White Powder	Color White	Odor None
Odor Threshold Not Applicable	pH 4.0 (approximately 4% silica in water)	Boiling Point 4046°F (2230°C) (approximate)
Evaporation Rate Not Applicable	Melting/Freezing Point 3092°F (1700°C) (approximate)	% Volatile by Volume Not Applicable
Solubility in Water Insoluble	Density 2.2 g/cm ³ @ 20°C	Vapor Density Not Applicable
Vapor Pressure Not Applicable	Reid Vapor Pressure Not Applicable	Water/Oil Distribution Not Applicable
Viscosity Not Applicable	Pour Point Not Applicable	

SECTION X – Stability and Reactivity

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

SECTION XI – Toxicological Information*Acute Toxicity**

Acute Oral (Rat): LD₅₀ > 5,000 mg/kg.

Acute Skin: Not tested.

Acute Inhalation: LC₀ > 2.08 mg/L (4 hr) (maximum achievable concentration).

Eye Irritation: Draize score 1/110 @ 24 hr (practically non-irritating).

Skin Irritation: 0.44/8 mildly irritating. @ 24 hr.

Sensitization: Not tested.

Mutagenicity: This material was negative in an Ames assay and in chromosome aberration and HGPRT mutation assays in Chinese hamster ovary (CHO) cells. This material also did not induce unscheduled DNA synthesis in rat hepatocytes.

Reproductive Toxicity: Not tested.

Chronic Inhalation Effect

Currently reviewing the available literature and data on the chronic effects of treated and untreated silicas.

*SECTION XI – Continued

Chronic Ingestion Effect None known.	Chronic Eye Effect None known.	Chronic Skin Effect None known.
Teratogenicity None known.	Carcinogenicity Not listed as a carcinogen by IARC, NTP, Z List or OSHA.	Synergistic Materials None known.

*SECTION XII – Ecological Information

Mobility Not soluble in water, not mobile in soil.	Persistence/Degradability Not Applicable	Bio-Accumulation Not Applicable
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Ecotoxicity: Not tested.

WGK Water Hazard Class: nwg (not water hazardous).

*SECTION XIII – Disposal Considerations

Legal Classification

Dispose of in accordance with all applicable laws and regulations. When disposed as sold, not a hazardous waste under US RCRA (Resource Conservation and Recovery Act) regulations. Same disposal considerations should be given for empty containers; reuse is not recommended.

Fumed silica is not a special waste under UK Special Waste Regulations 1996. Dispose of in accordance with local regulations. These regulations implement EC Directive 91/689 and Decision 94/904.

EU: Waste code (EU): See industry specific waste code. See European Waste Catalogue (75/442/EEC).

SECTION XIV – Transport Information

UN Number Not applicable	UN Proper Shipping Name Not regulated	UN Class Not applicable
UN Packing Group Not applicable	GGVS/GGVE/RID/ADR/IMDG-Code/ICAO-TI Information Not regulated	US Rail Regulations Not regulated

*SECTION XV – Regulatory Information

National Registries

United States: TSCA (Toxic Substance Control Act inventory): All components are listed on or exempt under the TSCA.

Europe (EU): EINECS (European Inventory of Existing Commercial Chemical Substances): All components are listed on or exempt under EINECS or have been notified to ELINCS.

Canada: CEPA (Canadian Environmental Protection Act): All components are listed on or exempt under the DSL.

Japan: MITI (Ministry of International Trade and Industry): List of Existing Chemical Substances, No. 1-548(1-810).

Australia: AICS (Australian Inventory of Chemical Substances): All components are listed on or exempt under the AICS.

Korea: ECL (Existing Chemicals List): All components are listed on or exempt under the ECL.

Philippines: PICCS (Philippine Inventory of Chemicals and Chemical Substances): All components are listed on or exempt under the PICCS.

*SECTION XV – Continued

Hazard Classification

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

Europe (EU) Hazard Classification: This material is not defined as a dangerous substance regarding EU directive 67/548/EEC and its various amendments and adaptations.

Canada: Not classified.

US Federal Regulations

Clean Water Act (CWA, 40 CFR 116): Not listed.

Clean Air Act Amendments of 1990 (CAA Section 112, 40 CFR 82): No components are listed as hazardous air pollutants. The product is not made with nor does it contain any Class 1 or Class 2 ozone depleting substances as defined under the 1990 Amendments to the act.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, 40 CFR 302): This material is not a hazardous substance under CERCLA.

Superfund Amendments and Reauthorization Act, Title III (SARA):

Emergency Planning and Community Right-to-Know Act (EPCRA, 40 CFR 355): Does not contain any constituents that are identified as extremely hazardous substances.

SARA Section 311 (40 CFR 370)—MSDS Requirements: Not regulated.

SARA Section 312 (40 CFR 370): Apply if the material is present at any one time in amounts equal to or greater than 10,000 pounds.

SARA Section 313 (40 CFR 372): Does not contain any of the substance identified under Section 313 as toxic chemicals in excess of the *de minimis* concentrations necessary to be subject to this rule.

US State Regulations

California: This material does not contain any components listed under California Proposition 65.

US CONEG Legislation: Not determined.

US FDA Regulations

The use of CAB-O-SIL® has been cleared by the United States Food and Drug Administration (FDA) for many food applications as both a direct food additive at levels up to 2 percent 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. Additional information on the use of CAB-O-SIL fumed silica in foods is available in the publication, *CAB-O-SIL[®] Fumed Silica as a Conditioning Agent for the Food Processing Industry*.

Pharmaceutical Information

The use of CAB-O-SIL fumed silica meets all of the requirements for colloidal silicon dioxide as described in *The U.S. Pharmacopoeia National Formulary*. It also meets the requirements as described in the *European Pharmacopoeia* and the *Deutsches Arzneibuch (DAB 1999)* (referenced as silica colloidalis anydrica) and other national pharmacopoeias, including the *Japanese Pharmacopoeia* (light anhydrous silicic acid). It appears in the *Handbook of Pharmaceutical Excipients* under the monograph, colloidal silicon dioxide.

SECTION XVI – Other Information

Reference Sources Used

Sax, Irving N. & Lewis Sr., Richard J. *Dangerous Properties of Industrial Materials*, 7th Edition.

ACGIH, *Documentation of TLVs and BEIs*, 6th edition.

Cook, Warren A., *Occupational Exposure Limits Worldwide*, 1988.

Revision Indicator

Revised sections of the MSDS will be indicated by an asterisk (*) in front of the section affected.

Disclaimer

The information set forth is based on information which Cabot Corporation believes to be accurate. No warranty, expressed or implied, is intended. The information is provided solely for your information and consideration and Cabot assumes no legal responsibility for use or reliance thereon.