



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
Canada Hazardous Products Regulations (SOR/2015-17)

Revision date 02-Feb-2023

Revision Number 8

1. Identification

Product identifier

Product Name CAB-O-SIL® TS-720 Fumed Silica

Other means of identification

Product Code(s) TS720

Synonyms Silicon Dioxide, Synthetic Amorphous Silica, Pyrogenic (Fumed) Amorphous Silica

Recommended use of the chemical and restrictions on use

Recommended use Various, Rheological control, Flow agent, Thickening agent, Glossing or matting agent, Reinforcing agent in: Coatings, Adhesives and/or sealants, Inks, Silicone Elastomer, Rubber products, dispersion, suspension, Cosmetics, Paints, Hygiene and sanitary products, Other

Restrictions on use None known.

Details of the supplier of the safety data sheet

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2. Hazard(s) identification

Classification

Combustible dust	Yes
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Label elements

Signal word

Warning

Hazard statements

May form combustible dust concentrations in air

Precautionary Statements - Prevention

Keep away from all ignition sources including heat, sparks and flame
Prevent dust accumulations to minimize explosion hazard

Other information

May cause mechanical irritation. Dust may be irritating to respiratory tract. Do not expose to temperatures above 150 °C.

3. Composition/information on ingredients**Substance**

Synonyms Silicon Dioxide, Synthetic Amorphous Silica, Pyrogenic (Fumed) Amorphous Silica

Chemical name	CAS No	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	100	-	-

4. First-aid measures**Description of first aid measures**

Inhalation	If cough, shortness of breath or other breathing problems occur, move to fresh air. Seek medical attention if symptoms persist. If necessary, restore normal breathing through standard first aid measures.
Eye contact	In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.
Skin contact	Wash skin with soap and water. Get medical attention if symptoms occur.
Ingestion	Do NOT induce vomiting. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Symptoms See Section 11 for additional Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use foam, carbon dioxide (CO ₂), dry chemical or water spray. A fog is recommended if water is used.
Unsuitable extinguishing media	DO NOT USE high pressure media which could cause formation of a potentially explosible dust-air mixture.
Specific hazards arising from the chemical	May release formaldehyde when heated to high temperatures in the presence of air. Formaldehyde is a known skin and lung sensitizer and is regulated as a carcinogen.
Hazardous combustion products	Carbon monoxide, Carbon dioxide (CO ₂), Formaldehyde
Explosion data	
Sensitivity to mechanical impact	None.

Sensitivity to static discharge

Dust can form an explosive mixture with air. Avoid generation of dust. Do not create a dust cloud by using a brush or compressed air. Take precautionary measures against static discharges. All metal parts of the mixing and processing equipment must be earthed/grounded. Ensure all equipment is electrically earthed/grounded before beginning transfer operations.

Special protective equipment and precautions for fire-fighters

In case of fire: Wear self-contained breathing apparatus. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions

Avoid generation of dust. Remove all sources of ignition. Ensure adequate ventilation. Use personal protection equipment. See section 8.

Other information

Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions

Contain spilled product on land, if possible. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

If the spilled material contains dust or has the potential to create dust, use explosion-proof vacuums and/or cleaning systems suitable for combustible dusts. Use of a vacuum with high efficiency particulate air (HEPA) filtration is recommended. Do not create a dust cloud by using a brush or compressed air. Dry sweeping is not recommended. Pick up and transfer to properly labeled containers. See section 13.

7. Handling and storage

Precautions for safe handling

Advice on safe handling

Avoid contact with skin and eyes. Avoid generation of dust. Do not breathe dust. Provide appropriate local exhaust ventilation at machinery and at places where dust can be generated. Do not create a dust cloud by using a brush or compressed air. Dust can form an explosive mixture with air.

Take precautionary measures against static discharges. All metal parts of the mixing and processing equipment must be earthed/grounded. Ensure all equipment is electrically earthed/grounded before beginning transfer operations. Fine dust is capable of penetrating electrical equipment and may cause electrical shorts.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep container tightly closed in a dry and well-ventilated place. Do not store together with volatile chemicals as they may be adsorbed onto product. Store at ambient conditions. Keep away from heat. Eliminate sources of ignition. Keep in properly labeled containers.

Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released in the atmosphere in sufficient concentrations.

8. Exposure controls/personal protection

Control parameters

Exposure Limits There are no exposure limits identified for this product. Exposure limits for components or similar components are stated below.

Chemical name	Amorphous Silica 7631-86-9
OSHA PEL	(vacated) TWA: 6 mg/m ³
Chemical name	Dust, or particulates not otherwise specified RR-00072-6
ACGIH TLV	TWA: 10 mg/m ³ inhalable particles, recommended TWA: 3 mg/m ³ respirable particles, recommended
OSHA PEL	TWA: 15 mg/m ³ total dust; 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust; 5 mg/m ³ respirable fraction
Alberta	TWA: 10 mg/m ³ total; 3 mg/m ³ respirable
British Columbia	TWA: 10 mg/m ³ total dust; 3 mg/m ³ respirable fraction
Ontario	TWA: 10 mg/m ³ inhalable fraction; 3 mg/m ³ respirable fraction
Quebec	TWA: 10 mg/m ³ total dust

Other information In its facilities globally, Cabot Corporation manages silica to the Germany TRGS 900 occupational exposure limit of 4 mg/m³, TWA, Inhalable fraction.

Appropriate engineering controls

Engineering controls Ensure adequate ventilation to maintain exposures below occupational limits. Provide appropriate local exhaust ventilation at machinery and at places where dust can be generated. Ensure that eyewash stations and safety showers are close to the workstation location.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand protection Wear protective gloves to prevent soiling of hands. Use protective barrier cream before handling the product.

Skin and body protection Wear suitable protective clothing. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace.

Respiratory protection Approved respirator may be necessary if local exhaust ventilation is not adequate.

Environmental exposure controls In accordance with all local legislation and permit requirements as applicable for dusts.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Information given is based on data obtained from this substance or from similar substances

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Color	white
Odor	None under normal use. May exhibit odor at high temperature
Odor threshold	0.05 ppm

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		No information available
Melting point / freezing point	1700 °C	NIOSH Pocket Guide to Chemical Hazards
Boiling point / boiling range	2230 °C	NIOSH Pocket Guide to Chemical Hazards
Flash point		Not applicable
Evaporation rate		Not applicable

Flammability (solid, gas)		No data available
Flammability Limit in Air		Not applicable
Vapor pressure		Not applicable
Relative vapor density		Not applicable
Relative density	2.2-2.3	@ 20 °C
Water solubility	slightly soluble	According to OECD 105
Solubility(ies)		No data available
Partition coefficient		Not applicable
Autoignition temperature	<=750 °C	ASTM E-1491 Dust cloud Due to the low density of this product and the volume of the dispersion vessel, testing at a concentration above 600g/m ³ were unable to be performed. For this reason, the MAIT is reported less than or equal to 750°C. Higher concentrations may produce ignitions below 750°C. (MAIT - Minimum Auto-Ignition Temperature)
Decomposition temperature	> 400 °C	Bulk Powder test- Diffusion cell
Kinematic viscosity		Not applicable
Dynamic viscosity		Not applicable
Other information		
Minimum Explosive Conc.	300-400 g/m ³	ASTM E-1515
Minimum Ignition Temperature - Layer	> 450 °C	ASTM E-2021. Neither of the tests conducted at a temperature of 450°C (the upper limit of the apparatus) met the criteria for ignition based on temperature rise. For this reason, the MIT was reported as > 450°C
Minimum Ignition Energy	> 10 J	ASTM E-2019
Maximum Pressure Rise	5.22 bar	ASTM E-1226 (20-L Sphere Test)
Maximum Rate of Pressure Rise	140 bar/sec	ASTM E-1226 (20-L Sphere Test)
K _{st}	38 bar.m/s	ASTM E-1226 (20-L Sphere Test)
Explosive properties	Dust may form explosible mixture in air	Dust explosion category: ST 1
Oxidizing properties		No Oxidizing properties

10. Stability and reactivity

Reactivity	Not reactive.
Chemical stability	Stable under normal conditions. Stable under recommended storage conditions. Stable up to >400°C. No exotherm (Bulk Powder test - Diffusion cell).
Possibility of hazardous reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Do not expose to temperatures above 150 °C. Keep away from heat. Eliminate sources of ignition. Avoid generation of dust. May release formaldehyde when heated to high temperatures in the presence of air. Formaldehyde is a known skin and lung sensitizer and is regulated as a carcinogen.
Incompatible materials	None known based on information supplied
Hazardous decomposition products	Carbon monoxide, Carbon dioxide (CO ₂), Formaldehyde

11. Toxicological information

Information given is based on data obtained from this substance or from similar substances.

Acute toxicity

Oral LD50	> 5000 mg/kg (rat). No deaths occurred and no signs of toxicity were seen during the observation periods after single oral administration of the substance. OECD 423.
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Dermal LD50	No data are available on the product itself Synthetic Amorphous Silica: > 2000 mg/kg (rabbit). Very slight transient erythema in one animal. No signs of systemic or organ toxicity (OECD 402).
Inhalation LC50	Due to the product's physical characteristics, no suitable testing procedure is available.
Skin corrosion/irritation	Primary irritation index = 0.0 @ 24 hr. Not classified as an irritant (OECD 404).
Serious eye damage/eye irritation	Not classified as an irritant in rabbit studies (OECD 405). High dust concentrations may cause mechanical irritation.
Respiratory or skin sensitization	Not skin sensitizing in LLNA mouse (OECD 429). No cases of sensitization in humans have been reported. Contains no known sensitizers. May release formaldehyde when heated to high temperatures in the presence of air. Formaldehyde is a known skin and lung sensitizer and is regulated as a carcinogen.
Germ cell mutagenicity	Not mutagenic in AMES Test. Negative in the chromosome aberration test in Chinese hamster ovary (CHO) cells.
Carcinogenicity	No data are available on the product itself. Synthetic Amorphous Silica: No evidence of carcinogenicity was observed in multiple animal species following repeated oral or inhalation exposure to amorphous silica. Similarly, epidemiology studies show no evidence of carcinogenicity in workers who manufacture amorphous silica. Treated Synthetic Amorphous Silica: No evidence of cancer in rats exposed for 24 months at 100 mg/kg/d (diet). (ECETOC JACC Report 051 - Synthetic Amorphous Silica, September 2006).
Reproductive toxicity	No effects on reproductive organs have been reported in animal toxicity studies. No developmental effects observed on progeny in dietary study (doses of 0 or 500 mg/kg/d). (ECETOC JACC Report 051 - Synthetic Amorphous Silica, September 2006).
STOT - single exposure	Specific target organ toxicity is not expected after single oral, single inhalation, or single dermal exposure.
STOT - repeated exposure	No data are available on the product itself. Treated Synthetic Amorphous Silica: Repeated dose toxicity: oral (rat), 5 to 8 weeks, no significant treatment-related adverse effects at doses of up to 2000 mg/kg/d. (ECETOC JACC Report 051 - Synthetic Amorphous Silica, September 2006). Synthetic Amorphous Silica: Repeated dose toxicity: oral (rat), 2 weeks to 6 months, no significant treatment-related adverse effects at doses of up to 8% silica in the diet. Repeated dose toxicity: inhalation (rat), 13 weeks, Lowest Observed Effect Level (LOEL) = 1.3 mg/m ³ based on mild reversible effects in the lungs. Repeated dose toxicity: inhalation (rat), 90 days, LOEL = 1 mg/m ³ based on reversible effects in the lungs and effects in the nasal cavity. Repeated dose toxicity using SAS 400 m ² /g: inhalation (rat), 90 days, fully reversible inflammation related to clearance processes following recovery period. NOAEC (lung) based on histopathology and inflammatory marker is 5 mg/m ³ Based on available data, a STOT-RE classification is not warranted.
Target organ effects	Lungs
Aspiration hazard	Based on industrial experience and available data, no aspiration hazard is expected.
Other adverse effects	No information available.

12. Ecological information

Information given is based on data obtained from this substance or from similar substances

Ecotoxicity	Fish (Brachydanio rerio) LC50 (96 h): > 10,000 mg/l; (Method: OECD 203). No acute toxicity to Daphnia with EL and EL ₅₀ ranging from >1000 to 10,000 mg/L (OECD 202).
Persistence and degradability	The methods for determining biodegradability are not applicable to inorganic substances.
Bioaccumulation	Not expected due to physicochemical properties of the substance.
Mobility	Not expected to migrate.
Other adverse effects	No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with federal, state and local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

14. Transport information

<u>DOT</u>	Not regulated
<u>TDG</u>	Not regulated
<u>MEX</u>	Not regulated
<u>ICAO (air)</u>	Not regulated
<u>IATA</u>	Not regulated
<u>IMDG</u>	Not regulated
<u>RID</u>	Not regulated
<u>ADR</u>	Not regulated
<u>ADN</u>	Not regulated

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

TCSI	Complies
NZIoC	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
TCSI - Taiwan Chemical Substance Inventory
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations**TSCA Section 12(b) Export Regulations**

This product does not contain any components that are subject to TSCA 12(b) Export Notification.

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

Clean Air Act Amendments of 1990 (CAA, Section 112, 40 CFR 82)

This product does not contain any components listed as a Hazardous Air Pollutant, Flammable Substance, Toxic Substance, or Class 1 or 2 Ozone Depletor.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Filler	X	X	X

16. Other information

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: Exposure controls/personal protection**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

NIOSH Pocket Guide to Chemical Hazards, September 2005. "Silica, amorphous". DHHS (NIOSH) Publication No. 2005-149. National Technical Information Service, Springfield, VA. p. 277

Prepared By Cabot Corporation - Safety, Health and Environmental Affairs.

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Revision Note Format update, Content review

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End of Safety Data Sheet