



# SAFETY DATA SHEET

Distributed By  
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Prepared in accordance with ISO 11014-1/ ANSI  
standard Z400.1-2004/ JIS Z 7253:2012

Revision date: 12-Jun-2018

According to JIS Z 7253: 2012, a Safety Data Sheet (SDS) must be provided for hazardous substances or mixtures. This product does not meet the classification criteria according to this standard. Therefore, such document is outside the scope of the standard and the requirements for each section do not apply.

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name: CAB-O-SIL® TS-720 Fumed Silica

Product code: TS720

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

This SDS is valid for the following grades: TS720, TS720D

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: Not Applicable

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## 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Not hazardous according to JIS Z 7253:2012. Not a dangerous substance or mixture according to the Globally Harmonized System (GHS).

Label Elements:

## Pictogram:

None

## Signal Word:

None

## Hazard statements:

None

## Precautionary Statement(s):

None

Hazards not otherwise classified (HNOC)

This substance is classified as hazardous as a combustible dust by the United States 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Hazardous Products Regulation (HPR) 2015. The signal word, hazard statement and precautionary statements in the United States and Canada are: WARNING May form combustible dust concentrations in air. Keep away from all ignition sources including heat, sparks and flame. Prevent dust accumulations to minimize explosion hazard.

Do not expose to temperatures above 150°C. Hazardous products of combustion can include carbon monoxide, carbon dioxide and formaldehyde.

Potential health effects

Principle Routes of Exposure: Inhalation, Skin Contact, Eye contact

Eye Contact: May cause mechanical irritation. Avoid contact with eyes.

Skin Contact: May cause mechanical irritation and skin drying. Avoid contact with skin. No cases of sensitization in humans have been reported.

Inhalation: Dust may be irritating to respiratory tract. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. See also Section 8.

Ingestion: Adverse health effects are not expected. See Section 11.

Carcinogenicity: Does not contain any substances greater than 0.1% listed by IARC (International Agency for Research on Cancer), NTP (National Toxicology Program), OSHA (Occupational Safety and Health Administration), ACGIH (American Conference for Governmental Industrial Hygienists) or EU (European Union). See also Section 11.

Target Organ Effects: Lungs, See Section 11

Medical Conditions Aggravated by Exposure: Asthma, Respiratory disorder

Potential Environmental Effects: None known. See Section 12.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	weight-%	ENCS - Japan Existing and New Chemical Substances	Japan GHS Classification
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	100	See Section 15	See Section 2

### 4. FIRST AID MEASURES

#### FIRST AID MEASURES

Skin Contact	Wash thoroughly with soap and water. Seek medical attention if symptoms develop.
Eye contact	Flush eyes immediately with large amounts of water for 15 minutes. Seek medical attention if symptoms develop.
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.
Ingestion	Do not induce vomiting. If conscious, give several glasses of water. Never give anything by mouth to an unconscious person.

#### Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in Section 2 and/or in Section 11.

#### 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<sub>2</sub>), 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 (CO). Carbon dioxide (CO<sub>2</sub>). Formaldehyde.

#### Protective equipment and precautions for firefighters:

Wear suitable protective equipment. In the event of fire, wear self-contained breathing apparatus.

Risk of Dust Explosion:

Dust may form explosive mixture in air. See also Section 9.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid dust formation. Remove all sources of ignition. Ensure adequate ventilation. Use personal protective equipment. See also Section 8.

For emergency responders: Use personal protection recommended in Section 8.

### Environmental Precautions:

Environmental Precautions: Contain spilled product on land, if possible. Local authorities should be advised if significant spillages cannot be contained.

### 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 labelled containers. See Section 13.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

Advice on safe handling: Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Provide appropriate 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 may form explosive mixture in 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.

### Conditions for safe storage, including any incompatibilities

Storage Conditions: Keep containers 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 and 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.

Incompatible materials: None known.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure guidelines: There are no exposure limits identified for this product. Exposure limits for components are stated below.

Amorphous Silica, The regulatory exposure limits are found under the general silica, CAS RN 7631-86-9:	Australia: Austria MAK Finland: Germany TRGS 900: India: Ireland: Norway: Switzerland: UK WEL:  US OSHA PEL:	2 mg/m <sup>3</sup> , TWA, Respirable 4 mg/m <sup>3</sup> , TWA, Inhalable fraction 5 mg/m <sup>3</sup> 4 mg/m <sup>3</sup> , TWA, Inhalable fraction 10 mg/m <sup>3</sup> , TWA 2.4 mg/m <sup>3</sup> , TWA, Respirable dust 1.5 mg/m <sup>3</sup> , TWA, Respirable dust 4 mg/m <sup>3</sup> , TWA 6 mg/m <sup>3</sup> , TWA, Inhalable fraction 2.4 mg/m <sup>3</sup> , TWA, Respirable fraction 6mg/m <sup>3</sup> (54 FR2701)
Dust, or Particulates Not Otherwise Specified:	Belgium:  China:  France:  Italy:  Malaysia:  Spain:  US ACGIH - PNOS:  US OSHA - PEL:	10 mg/m <sup>3</sup> , TWA, Inhalable 3 mg/m <sup>3</sup> TWA, Respirable  8 mg/m <sup>3</sup> , TWA 10 mg/m <sup>3</sup> , STEL  10 mg/m <sup>3</sup> , TWA Inhalable dust 5 mg/m <sup>3</sup> , TWA Respirable dust  10 mg/m <sup>3</sup> , TWA, Inhalable 3 mg/m <sup>3</sup> , TWA, Respirable  10 mg/m <sup>3</sup> , TWA, Inhalable 3 mg/m <sup>3</sup> , TWA, Respirable  10 mg/m <sup>3</sup> , VLA, Inhalable 3 mg/m <sup>3</sup> , VLA, Respirable  10 mg/m <sup>3</sup> , TWA, Inhalable 3 mg/m <sup>3</sup> , TWA, Respirable  15 mg/m <sup>3</sup> , TWA, Total dust 5 mg/m <sup>3</sup> , TWA, Respirable

### NOTE:

In its facilities globally, Cabot Corporation manages silica to the Germany TRGS 900 occupational exposure limit of 4 mg/m<sup>3</sup>, TWA, Inhalable fraction

MAK: Maximale Arbeitsplatzkonzentration (Maximum Workplace Concentration)

PEL: Permissible Exposure Limit

PNOS: Particulate Not Otherwise Specified

STEL: Short Term Exposure Limit

TRGS: Technische Regeln für Gefahrstoffe (Technical Rule for Hazardous Materials)

TWA: Time Weighted Average

US ACGIH: United States American Conference of Governmental Industrial Hygienists

US OSHA: United States Occupational Safety and Health Administration  
 VLA: Valore Limite Ambientales (Environmental Limit Value)  
 WEL: Workplace Exposure Limit

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.

#### Personal protective equipment [PPE]

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

Hand Protection: Wear protective gloves to prevent skin drying. Use protective barrier cream before handling the product. Wash hands and other exposed skin with mild soap and water.

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

Skin and Body Protection: Wear suitable protective clothing. Wash clothing daily. Work clothing should not be allowed out of the workplace.

Other: Handle in accordance with good industrial hygiene and safety practice. Emergency eyewash and safety shower should be located nearby.

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

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid Odor: None under normal use. May exhibit odor at high temperature

Appearance: Powder Odor threshold: 0.05 ppm  
 Color: White

<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
Evaporation Rate:		Not Applicable
Vapor pressure:		Not Applicable
Vapor Density:		Not Applicable
Density:	2.2-2.3 g/cm <sup>3</sup>	@ 20 °C
Bulk Density:		No information available
Specific Gravity at 20°C:	2.2-2.3	
Water solubility:	Slightly soluble	According to OECD 105
Solubility(ies):		No information available
Partition Coefficient (n-octanol/water):		Not Applicable
Decomposition temperature:	400 °C	Bulk Powder test- Diffusion cell
Viscosity:		Not Applicable
Kinematic viscosity:		Not Applicable
Dynamic viscosity:		Not Applicable
Oxidizing Properties:		No oxidizing properties



Softening point:		Not Applicable
VOC content (%):		Not Applicable
% Volatile (by Volume):		Not Applicable
% Volatile (by Weight):		Not Applicable
Surface Tension:		Not Applicable
Explosive properties:		Dust may form explosible mixture in air
Flash Point:		Not Applicable
Flammability (solid, gas):		No information available
Flammability Limit in Air:		No information available
Explosion Limits in Air - Upper (g/m <sup>3</sup> ):		No information available
Explosion Limits in Air - Lower (g/m <sup>3</sup> ):	300<MEC<400 g/m <sup>3</sup>	ASTM E-1515 (MEC - Minimum Explosible Concentration)
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 <sup>3</sup> 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)
Minimum Ignition Temperature:	>450 °C	ASTM E-2021 Dust layer 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:	>1 J	ASTM E2019
Ignition Energy:		No information available
Maximum Absolute Explosion Pressure:	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)
Burn Velocity:		No information available
Kst Value:	38 bar.meter/second	ASTM E-1226 (20-L Sphere Test)
Dust Explosion Classification:	ST1	Weak Explosion ASTM E-1226;
End point is listed "not applicable" due to the inherent properties of the substance		
"No information available" indicates testing has not been performed		

## 10. STABILITY AND REACTIVITY

Reactivity:	Not reactive.
Stability:	Stable under recommended handling and storage conditions. Stable up to >400° C. No exotherm (BulkPowder test - Diffusion cell).
Explosion data	See also Section 9.
Sensitivity to Mechanical Impact: None.	
Sensitivity to Static Discharge:	Dust may form explosible mixture in air. Avoid dust formation. 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.

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 and sources of ignition. Avoid dust formation. 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.
Hazardous decomposition products:	Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ). Formaldehyde.

## 11. TOXICOLOGICAL INFORMATION

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

### Acute toxicity

Oral LD50:	LD50/oral/rat = > 5000 mg/kg. No deaths occurred and no signs of toxicity were seen during the observation periods after single oral administration of the substance. (OECD 423).
Inhalation LC50:	Due to the product's physical characteristics, no suitable testing procedure is available
Dermal LD50:	No data are available on the product itself Synthetic Amorphous Silica: LD50/dermal/rabbit = > 2000 mg/kg Very slight transient erythema in one animal. No signs of systemic or organ toxicity (OECD 402)
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.
Sensitization:	No experimental animal data are available. 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.
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 and Developmental 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 <sup>3</sup> based on mild reversible effects in the lungs. Repeated dose toxicity: inhalation (rat), 90 days, LOEL = 1 mg/m <sup>3</sup> based on reversible effects in the lungs and effects in the nasal cavity.  Based on available data, a STOT-RE classification is not warranted.
Aspiration Hazard:	Based on industrial experience and available data, no aspiration hazard is expected.

## 12. ECOLOGICAL INFORMATION

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

Aquatic Toxicity:	Fish (Brachydanio rerio) LC50 (96 h): > 10,000 mg/l; (Method: OECD 203) No acute toxicity to Daphnia with EL and EL <sub>50</sub> ranging from >1000 to 10,000 mg/L (OECD 202)
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### ENVIRONMENTAL FATE

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.
Distribution to Environmental Compartments:	No information available.
Other adverse effects:	No information available.

## 13. DISPOSAL CONSIDERATIONS

Disclaimer: Information in this section pertains to the product as shipped in its intended composition as described in Section 3 of this SDS. Contamination or processing may change waste characteristics and requirements. Regulations may also apply to empty containers, liners or rinsate. State/provincial and local regulations may be different from federal regulations. The person generating waste must determine its proper classification

Unused and Uncontaminated Product:	Product, as supplied, should be disposed of in accordance with the regulations issued by the appropriate federal, state and local authorities. Same consideration should be given to containers and packaging.
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14. TRANSPORT INFORMATION
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Japanese Regulations

Shipping Safety Law:	Not regulated
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DOT

UN/ID no	Not regulated
Proper Shipping Name	Not regulated
Hazard Class	Not regulated
Packing group	Not regulated

ICAO (air)

UN/ID no	Not regulated
Proper Shipping Name	Not regulated
Hazard Class	Not regulated
Packing group	Not regulated

IATA

UN/ID no	Not regulated
Proper Shipping Name	Not regulated
Hazard Class	Not regulated
Packing group	Not regulated

IMDG

UN/ID no	Not regulated
Proper Shipping Name	Not regulated
Hazard Class	Not regulated
Packing group	Not regulated

RID

UN/ID no	Not regulated
Proper Shipping Name	Not regulated
Hazard Class	Not regulated
Packing group	Not regulated

ADR

UN/ID no	Not regulated
Proper Shipping Name	Not regulated
Hazard Class	Not regulated
Packing group	Not regulated

15. REGULATORY INFORMATION
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Industrial Safety & Health Law (ISHL) Synthetic amorphous silica is not listed as a hazardous substance in Appendix 9 of Cabinet

Notifiable Substances: Order, Article 57-2 of ISHL. No. 312: Silica has been deleted per Notification No. 0803 No. 6 (2017/8/3).

#### International Inventories

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

## 16. OTHER INFORMATION

#### Pharmaceutical Use:

Not permitted

#### Food Additive Use:

Not permitted

#### References:

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

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End of Safety Data Sheet