

SAFETY DATA SHEET

United States Hazard Communication Standard 29 CFR 1910.1200 (2012) Revision date: 28-Nov-2019 Canada Hazardous Products Regulations (SOR/2015-17)

1. I	DENTIFI(CATION (of the s	ubstance.	/PREPARATION	I and of t	HE COMPANY/	UNDERTAKING
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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

Supplier:

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2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status: This chemical is considered hazardous by the United States 2012 OSHA Hazard

Communication Standard (29 CFR 1910.1200).

Combustible dust

Label Elements:

Pictogram: None

Signal Word: WARNING

Hazard statements: May form combustible dust concentrations in air

Precautionary Statements -

• Keep away from all ignition sources including heat, sparks and flame

Prevention • Prevent dust accumulations to minimize explosion hazard

Hazards not otherwise classified (HNOC)

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 Asthma, Respiratory disorder

Exposure:

Potential Environmental Effects: None known, See Section 12.

3. COMPOSITION/INFORMATION ON INGREDIENTS

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

Chemical name	CAS No	weight-%	Trade secret
Siloxanes and Silicones, di-Me, reaction products	67762-90-7	100	-
with silica			

Other Information:

The hyphen (-) means "not applicable"

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 (CO2), 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 (CO2). 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 explosible

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 explosible 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 Australia: exposure limits are found under the quentral silica, CAS RN 7631-86-9: Finland:

Australia: 2 mg/m³, TWA, Respirable
Austria MAK 4 mg/m³, TWA, Inhalable fraction

Finland: 5 mg/m³

Germany TRGS 900: 4 mg/m³, TWA, Inhalable fraction

India: 10 mg/m³, TWA

Ireland: 2.4 mg/m³, TWA, Respirable dust Norway: 1.5 mg/m³, TWA, Respirable dust

Switzerland: 4 mg/m³, TWA

UK WEL: 6 mg/m³, TWA, Inhalable fraction

2.4 mg/m³, TWA, Respirable fraction

US OSHA PEL: 6mg/m³ (54 FR2701)

Dust, or Particulates Not Otherwise Specified:

Belgium: 10 mg/m³, TWA, Inhalable

3 mg/m³ TWA, Respirable

China: 8 mg/m³, TWA

10 mg/m³, STEL

France: 10 mg/m³, TWA Inhalable dust

5 mg/m³, TWA Respirable dust

Italy: 10 mg/m³, TWA, Inhalable

3 mg/m³, TWA, Respirable

Malaysia: 10 mg/m³, TWA, Inhalable

3 mg/m³, TWA, Respirable

Spain: 10 mg/m³, VLA, Inhalable

3 mg/m³, VLA, Respirable

US ACGIH - PNOS: 10 mg/m³, TWA, Inhalable

3 mg/m³, TWA, Respirable

US OSHA - PEL: 15 mg/m³, TWA, Total dust

5 mg/m³, TWA, Respirable

NOTE:

In its facilities globally, Cabot Corporation manages silica to the Germany TRGS 900 occupational exposure limit of 4 mg/m³, 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 Límite 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

Remarks • Method

exhibit odor at high

temperature.

Appearance: Powder Odor threshold: 0.05 ppm

Color: White

Property_ Values

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/cm3 @ 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 Not Applicable

(n-octanol/water):

Surface Tension:

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:
VOC content (%):
Volatile (by Volume):
Volatile (by Weight):
Not Applicable
Not Applicable
Not Applicable

70 Volatile (by Weight).

Not Applicable

Product code: TS720 Revision date: 28-Nov-2019 Product name: CAB-O-SIL® TS-720 Fumed Silica

Explosive properties: Dust may form explosible mixture in air

Flash Point: Not Applicable

No information available Flammability (solid, gas): Flammability Limit in Air: No information available Explosion Limits in Air - Upper (g/m³): No information available

Explosion Limits in Air - Lower (g/m³): 300<MEC<400 ASTM E-1515 (MEC - Minimum Explosible Concentration)

 q/m^3

<=750 °C ASTM E-1491 Dust Cloud Due to the low density of this product **Autoignition Temperature:**

> and the volume of the dispersion vessel, testing at a concentration above 600g/m³ 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)

ASTM E-2021 Dust layer Neither of the tests conducted at a Minimum Ignition Temperature: >450 °C

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 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 ASTM E-1226 (20-L Sphere Test)

bar.meter/second

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).

None under normal processing. Possibility of hazardous reactions:

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.

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.

Hazardous decomposition products: Carbon monoxide (CO). Carbon dioxide (CO2). 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/m³ based on mild reversible effects in the lungs.

Repeated dose toxicity: inhalation (rat), 90 days, LOEL = 1 mg/m³ 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 EL50 ranging from >1000 to 10,000 mg/L (OECD

202)

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

RCRA: Unused product is not a hazardous waste under U.S. RCRA, 40 CFR 261.

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.

14. TRANSPORT INFORMATION

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

<u>IATA</u>

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

Hazard Classification

United States - OSHA (29 CFR 1910.1200): Hazardous

Canada - WHMIS Classification (HPR, Hazardous. See Section 2 for Hazard Classification. SOR/2015-17)

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the M/SDS contains all the information required by the Hazardous Products Regulations

International Inventories

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List	Complies Complies
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of	Complies
Notified Chemical Substances	
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

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 Section 302 (40 CFR 355) Extremely Hazardous Substances:

No components are listed as extremely hazardous substances under SARA Section 302.

SARA 311/312 Hazard Categories

See GHS classification in section 2 for applicable SARA 311/312 hazard categories under the revised 40 CFR 370 (June 13, 2016)

SARA Section 313 (40 CFR 372) Toxics Release Inventory

Does not contain any of the substances identified under Section 313 as toxic chemicals in excess of the de minimis concentrations necessary to be subject to the supplier notification requirements.

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.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product contains a listed component(s) on the Massachusetts Right-to-Know Substances List, New Jersey Right-to-Know List, Pennsylvania Right-to-Know List:. Silica (CAS# 7631-86-9).

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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Prepared by: Cabot Corporation - Safety, Health and Environmental Affairs

Revision date: 28-Nov-2019

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End of Safety Data Sheet