



# SAFETY DATA SHEET

Prepared in accordance with the United States Hazard Communication Revision date: 15-May-2015 Standard: 29 CFR 1910.1200 (2012)

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

Product name: CAB-O-SIL® Untreated Fumed Silica

Product code: M5

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

 This SDS is valid for
 CAB-O-SIL® Fumed Silica:. L-50, L-60, L-90, LM-130, LM-150, M-5, M-5K, PTG, MS-55, H-5,

 the following grades:
 H-7D, HS-5, EH-5, LM-130D, LM-150D, M-7D, MS-75D, S-17D, HP-60, M-8D, EL-1000,

EL-2000, MS-35, H300, EL-90, EL-100, ELM-150, HK-7KD, HK-9D, HK-9KD, ENERSIL™ 2010,

2020, 2030.

Recommended use: Various, Rheological control, Flow agent, Anti-caking agent, Anti-blocking agent,

Anti-settling agent, Spray aid, Thickening agent, Carrier, Viscosity control agent, Glossing or matting agent, Chemical intermediate, Stabilization agent, Filler, Reinforcing agent in: Coatings, Adhesives and/or sealants, Silicone elastomer, Rubber products, Suspension, Dispersion, Batteries, Cosmetics, Inks and toners, Paints, Hygiene and sanitary products,

Other

**Restrictions on use:** Not Applicable.

Supplier:

Cabot CorporationCabot Corporation4400 North Point Parkway157 Concord RoadSuite 200Billerica, MA 01821Alpharetta, Georgia 30022UNITED STATES

United States Tel: 1-978-663-3455 Tel: +1 678 297 1300 Fax: 1-978-670-6955

**Emergency Telephone Number:** 24H/7d service

Canada: CANUTEC 1-613-996-6666

US: CHEMTREC 1-800-424-9300 or 1-703-527-3887

Germany: CHEMTREC 0800-181-7059 UK: CHEMTREC: (+44)-870-8200418 CHEMTREC China: 4001-204937

International CHEMTREC: +1 703-741-5970 or +1-703-527-3887

### 2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status: This chemical is not considered hazardous by the United States 2012 OSHA Hazard

Communication Standard (29 CFR 1910.1200).



Silica

**Label Elements** 

Pictogram: None Signal Word: None

Hazard statements: None

Precautionary Statements: None

Hazards not otherwise classified (HNOC)

None.

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

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

Chemical name	CAS No	weight-%	Trade secret
Synthetic Amorphous, Pyrogenic Silica	112945-52-5	> 99.9	-

<sup>\*</sup>Regulatory information is found under the general silica: CAS RN 7631-86-9, EINECS RN 231-545-4 The hyphen (-) means "not applicable"



Silica

### 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: Silica is non-combustible, therefore no extinguishing media needs to be identified.

Unsuitable Extinguishing Media: None.

Specific hazards arising from the

chemical:

None.

Hazardous combustion products: None.

Protective equipment and Wear

precautions for firefighters:

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

apparatus.

Risk of Dust Explosion: Not Applicable

**6. ACCIDENTAL RELEASE MEASURES** 

Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid dust formation. 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.



Silica

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: Clean up promptly by vacuum. 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.

Pick up and transfer to properly labelled containers. See Section 13.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Provide Advice on safe handling:

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.

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 in properly labeled containers.

**Incompatible materials:** None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure guidelines:** The table below is a summary. Please see the specific legislation for complete

information.

Amorphous Silica, The regulatory exposure limits are found under the Austria MAK

general silica, CAS RN 7631-86-9:

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

Finland: 5 mg/m<sup>3</sup>

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

India: 10 mg/m<sup>3</sup>, TWA

Ireland: 2.4 mg/m<sup>3</sup>, TWA, Respirable dust Norway: 1.5 mg/m<sup>3</sup>, TWA, Respirable dust

4 mg/m<sup>3</sup>, TWA Switzerland:

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

2.4 mg/m³, TWA, Respirable fraction

US OSHA PEL: 6mg/m<sup>3</sup> (54 FR2701)



Silica

Dust, or Particulates Not Otherwise Belgium:

Specified:

Belgium: 10 mg/m³, TWA, Inhalable

3 mg/m³ TWA, Respirable

China: 8 mg/m³, TWA

10 mg/m<sup>3</sup>, 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/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/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).



Silica

**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.

Appearance: Powder Odor threshold: Not Applicable

Color: White

Property Values Remarks • Method 3.6-4.5 In-house testing

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 g/cm3 @ 20 °C

**Bulk Density:** 30 - 150 kg/m<sup>3</sup> DIN/ISO 787:11

Specific Gravity at 20°C:

According to OECD 105 Water solubility: Slightly soluble Solubility(ies): No information available

**Partition Coefficient** Not Applicable

(n-octanol/water):

**Decomposition temperature:** Not Applicable 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

Not Applicable **Surface Tension: Explosive properties:** Non-explosible Flash Point: Not combustible

Flammability (solid, gas): Not flammable. Product resists ignition and does not promote

flame spread

Flammability Limit in Air: Not Applicable Explosion Limits in Air - Upper (g/m³): Not Applicable Explosion Limits in Air - Lower (g/m³): Not Applicable **Autoignition Temperature:** Not Applicable **Minimum Ignition Temperature:** Not Applicable



Silica

Minimum Ignition Energy:Not ApplicableIgnition Energy:Not ApplicableMaximum Absolute Explosion Pressure:Not ApplicableMaximum Rate of Pressure Rise:Not ApplicableBurn Velocity:Not combustibleKst Value:Not ApplicableDust Explosion Classification:Not Applicable

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. Substance is an inert inorganic solid.

Stable under recommended handling and storage conditions.

**Possibility of hazardous reactions:** None under normal processing.

**Hazardous polymerization:** Hazardous polymerization does not occur.

Conditions to avoid: None known.

**Incompatible materials:** None known.

**Explosion data** Will not cause dust explosion. See also Section 9.

Sensitivity to Mechanical Impact: None.

Sensitivity to Static Discharge: This material is an inorganic dust and will not create nor support conditions that would

result in a dust explosion or fire. Take precautionary measures against static discharges. Avoid dust formation. 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: None known.

## 11. TOXICOLOGICAL INFORMATION

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 silica(OECD 401).

**Inhalation LC50:** Due to the product's physical characteristics, no suitable testing procedure is available

**Dermal LD50:** 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 = 0/8 @ 24 hr. Not classified as an irritant (OECD 404)

Serious eye damage/eye irritation: Draize score 1.0/110 @ 24 hr. Not classified as an irritant in rabbit studies (OECD 405).

High dust concentrations may cause mechanical irritation.



Product code: M5 Revision date: 15-May-2015 Product name: CAB-O-SIL® Untreated Fumed

Silica

No experimental animal data are available. No cases of sensitization in humans have been Sensitization:

reported.

Mutagenicity: Not mutagenic in Ames test. Negative in the unscheduled DNA synthesis assay. Negative

in the chromosome aberration test in Chinese hamster ovary (CHO) cells.

Carcinogenicity: 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.

No effects on reproductive organs or fetal development have been reported in animal **Reproductive Toxicity:** 

toxicity studies.

STOT - single exposure: Based on available data, specific target organ toxicity is not expected after single oral,

single inhalation, or single dermal exposure.

STOT - repeated exposure: 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/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

Fish (Brachydanio rerio) LC50 (96 h): > 10,000 mg/l; (Method: OECD 203) **Aquatic Toxicity:** 

No acute toxicity to Daphnia with EL and EL<sub>50</sub> 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



Silica

Disclaimer: Information in this section pertains to the product as shipped in its intended composition as described in Section 3 of this MSDS. 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.

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

**Disposal considerations:** Dispose in accordance with applicable legislations.

# 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

## 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



Silica

Hazard ClassNot regulatedPacking groupNot regulated

### 15. REGULATORY INFORMATION

United States - OSHA (29 CFR 1910.1200): Not Hazardous

Mexico - NOM-018-STPS-2000: Not hazardous

Canada - WHMIS Classification (CPR, SOR/88-66): Not controlled

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the M/SDS contains all the information required by the Controlled Products Regulations.

Chemical name	WHMIS - Ingredient Disclosure
Synthetic Amorphous, Pyrogenic Silica 112945-52-5	General silica CAS RN 7631-86-9, is listed

#### International Inventories

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory		
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List	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

Acute Health Hazard	NO
Chronic Health Hazard	NO
Fire hazard	NO
Sudden release of pressure hazard	NO
Reactive Hazard	NO

# 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.

<sup>\*</sup>Regulatory information is found under the general silica: CAS RN 7631-86-9, EINECS RN 231-545-4. Hazard Classification



Silica

### 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	Louisiana:
Silica 7631-86-9	X	X	X	

### **16. OTHER INFORMATION**

#### **Pharmaceutical Use:**

Not recommended

### 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

# Contacts:

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Silica

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

Revision date: 15-May-2015

**End of Safety Data Sheet** 

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