

SAFETY DATA SHEET

Regulation (EC) No 1907/2006 (REACH), Article 31

Revision date: 19-May-2016

According to Article 31 of the Regulation (EC) No 1907/2006 (REACH), a Safety Data Sheet (SDS) must be provided for hazardous substances or mixtures. This product does not meet the classification criteria of the Regulation (EC) No 1272/2008 (CLP). Therefore such document is outside the scope of Article 31 of REACH and the requirements for content in each section do not apply

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

1.1. Product Identifier

Product code: 562 NOVOTHERM 200 FILLER
Product name: 562 NOVOTHERM 200 FILLERSee
REACH Registration Number: Section 3
Synonyms: Modified Synthetic Amorphous Silica

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use: Various, Insulating material, Industrial Products, Absorbant
Uses advised against: Not known as per REACH joint registration dossier.

1.3. Details of the supplier of the safety data sheet

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1.4. Emergency telephone number

Emergency Telephone Number: Tel.: +44 (0) 1845 577498

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Not a hazardous substance according to Regulation (EC) 1272/2008 (CLP), its various amendments and adaptations.

2.2. Label Elements

Pictogram:
None

Signal Word:
None

Hazard statements:
None

Precautionary statements:
None

2.3. Other Hazards

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 300°C. Hazardous products of combustion can include carbon monoxide, carbon dioxide and formaldehyde. Organic products of decomposition.

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

3.1 Substances

Chemical name	EC No	CAS No	weight-%	Classification according to Directive 67/548/EEC or 1999/45/EC	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Silica, [(trimethylsilyl)oxy]-modified	-	102262-30-6	>97	-	-	*

Other Information:

The hyphen (-) means "not applicable"

*

REACH registration number:

Synthetic Amorphous Silica: 01-2119379499-16

4. FIRST AID MEASURES

4.1. Description of 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.

4.2. 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.

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

- 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.

5.2. Special hazards arising from the substance or 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. Organic products of decomposition.

5.3. Advice for firefighters

- Special protective equipment for fire-fighters: 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

6.1. 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.

6.2. Environmental precautions

- Environmental Precautions: Contain spilled product on land, if possible. The product is insoluble and floats on water. If possible, try to contain floating material. Local authorities should be advised if significant spillages cannot be contained.

6.3. 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. See Section 13.

6.4. Reference to other sections

- Reference to other sections: See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

7.1. 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.

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

7.2. 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.

7.3. Specific end use(s)

Risk Management Measures (RMM) Per Article 14.4 of the REACH Regulation no exposure scenario has been developed as the substance is not hazardous.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

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 general silica, CAS RN 7631-86-9:	Australia:	2 mg/m ³ , TWA, Respirable
	Austria MAK	4 mg/m ³ , TWA, Inhalable fraction
	Finland:	5 mg/m ³
	Germany TRGS 900:	4 mg/m ³ , TWA, Inhalable fraction
	India:	10 mg/m ³ , TWA
	Ireland:	2.4 mg/m ³ , TWA, Respirable dust
	Norway:	1.5 mg/m ³ , TWA, Respirable dust
	Switzerland:	4 mg/m ³ , TWA
	UK WEL:	6 mg/m ³ , TWA, Inhalable fraction 2.4 mg/m ³ , TWA, Respirable fraction
	US OSHA PEL:	6mg/m ³ (54 FR2701)

Dust, or Particulates Not Otherwise Specified:	Belgium:	10 mg/m ³ , TWA, Inhalable 3 mg/m ³ TWA, Respirable
	China:	8 mg/m ³ , TWA 10 mg/m ³ , STEL
	France:	10 mg/m ³ , TWA Inhalable dust 5 mg/m ³ , TWA Respirable dust
	Italy:	10 mg/m ³ , TWA, Inhalable 3 mg/m ³ , TWA, Respirable
	Malaysia:	10 mg/m ³ , TWA, Inhalable 3 mg/m ³ , TWA, Respirable
	Spain:	10 mg/m ³ , VLA, Inhalable 3 mg/m ³ , VLA, Respirable
	US ACGIH - PNOS:	10 mg/m ³ , TWA, Inhalable 3 mg/m ³ , TWA, Respirable
	US OSHA - PEL:	15 mg/m ³ , TWA, Total dust 5 mg/m ³ , 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 Limite Ambientale (Environmental Limit Value)

WEL: Workplace Exposure Limit

Derived No Effect Level (DNEL): Synthetic Amorphous Silica: As required under the EU Registration, Evaluation and Authorization of Chemicals (REACH) Regulation, the Synthetic Amorphous Silica REACH Consortium (of which Cabot Corporation is a member) developed a Derived No Effect Level (DNEL) for Synthetic Amorphous Silica of 4 mg/m³ inhalable (Germany TRGS 900 occupational exposure limit).

Predicted No Effect Concentration (PNEC) Not Applicable.

8.2. Exposure 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.

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

Information given is based on data obtained from this product and similar products.

9.1. Information on basic physical and chemical properties

Physical State:	Solid	Odor:	None
Appearance:	Powder	Odor threshold:	No information available
Color:	White		
<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>	
pH:	3.0 - 6.5	In-house testing	
Melting point/freezing point:	1700 °C	after partial decomposition; NIOSH Pocket Guide to Chemical Hazards	
Boiling point / boiling range:	2230 °C	after partial decomposition; NIOSH Pocket Guide to Chemical Hazards	
Evaporation Rate:		Not Applicable	
Vapor pressure:		Not Applicable	
Vapor Density:		Not Applicable	
Density:		No information available	
Bulk Density:	60 - 150 kg/m ³	@ 20 °C	
Specific Gravity at 20°C:		No information available	
Water solubility:		No information available	
Solubility(ies):		No information available	
Partition Coefficient (n-octanol/water):		Not Applicable	
Decomposition temperature:	> 300 °C	DSC	
Viscosity:		Not Applicable	
Kinematic viscosity:		Not Applicable	
Dynamic viscosity:		Not Applicable	
Oxidizing Properties:		No oxidizing properties	
Softening point:		No information available	
VOC content (%):		Negligible	
% Volatile (by Volume):		No information available	
% Volatile (by Weight):		No information available	

Surface Tension:		Not Applicable
Explosive properties:		Dust may form explosible mixture in air
Flash Point:		Not Applicable
Flammability (solid, gas):	Not flammable	Not readily combustible (Class 4.1) per UN Recommendations on the Transportation of Dangerous Goods test method
Flammability Limit in Air:		
Explosion Limits in Air - Upper (g/m ³):		No information available
Explosion Limits in Air - Lower (g/m ³):		No information available
Autoignition Temperature:	550 °C	ASTM D-1929
Minimum Ignition Temperature:	> 370 °C	VDI 2263 Dust cloud
Minimum Ignition Energy:		No information available
Ignition Energy:		No information available
Maximum Absolute Explosion Pressure:		No information available
Maximum Rate of Pressure Rise:		No information available
Burn Velocity:		No information available
Kst Value:		No information available
Dust Explosion Classification:		No information available

End point is listed "not applicable" due to the inherent properties of the substance

"No information available" indicates testing has not been performed

DSC: Differential Scanning Calorimetry

9.2. Other information

None

10. STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity: Not reactive.

10.2. Chemical stability

Stability: Stable under recommended handling and storage conditions. Thermally decomposes above 300°C.

Explosion data

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.

10.3. Possibility of hazardous reactions

Hazardous polymerization: Hazardous polymerization does not occur.

Possibility of hazardous reactions: None under normal processing.

10.4. Conditions to avoid

Conditions to avoid: Keep away from heat and sources of ignition. Avoid dust formation. Heating above 300°C leads to decomposition of Aerogel surface treatment. Decomposition vapor should be ventilated. 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.

10.5. Incompatible materials

Incompatible materials: None known

10.6. Hazardous decomposition products

Hazardous decomposition products: Carbon monoxide (CO), Carbon dioxide (CO₂), Formaldehyde, Organic products of decomposition

11. TOXICOLOGICAL INFORMATION

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

11.1. Information on toxicological effects

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: Non-sensitizing. A delayed contact hypersensitivity study in guinea pigs utilizing the Buehler technique was performed.

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.

Reproductive and Developmental Toxicity: No effects on reproductive organs or fetal development have been reported in animal toxicity studies.

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), 28-d, diet, no significant treatment-related adverse effects at the doses tested. Derived No Adverse Effects Level (NOAEL) in the range of 1000 mg/kg/d. 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. 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

12.1. Toxicity

Aquatic Toxicity:	No data are available on the product itself. Synthetic Amorphous Silica. 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).
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12.2. Persistence and degradability

The methods for determining biodegradability are not applicable to inorganic substances

12.3. Bioaccumulative potential

Not expected due to physicochemical properties of the substance.

12.4. Mobility in soil

Mobility: Not expected to migrate.

12.5. Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6. 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 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. The person generating waste must determine its proper classification

List of Wastes Code: Not Applicable

13.1. Waste treatment methods

Waste from residues/unused products: Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Not self-heating solids (Class 4.2). per UN Transportation of Dangerous Goods.

DOT

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated

IMDG

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated

RID

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated

ADR

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated

ICAO (air)

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing group	Not regulated

IATA

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated

14.3 Hazard Class Not regulated
14.4 Packing group Not regulated

15. REGULATORY INFORMATION

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

European Union

Indication of danger: Not a hazardous substance according to Regulation (EC) 1272/2008 (CLP), its various amendments and adaptations and Directive 67/548/EEC.

National Regulations

Germany Water hazard class (WGK): Not determined

Swiss Poison class: Not determined

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

15.2. Chemical safety assessment

EU Chemical Safety Assessment: No Chemical Safety Assessment has been carried out for this substance. A Chemical Safety Assessment has been carried out for Synthetic Amorphous Silica.

EU Exposure Scenarios: Per Article 14.4 of the REACH Regulation no exposure scenario has been developed as the substance is not hazardous.

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: Resimac Ltd - Safety, Health and Environmental Affairs
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End of Safety Data Sheet