



SAFETY DATA SHEET

According to EC Directive 1907/2006/EC, Article 31

Revision Date: 12/September/2012

Product Code: NGFPA

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

Product Name: Enova™ Aerogel Fine Particles

Synonyms: None

This SDS is valid for the following grades: MT1100, MT1200, IC3100, AX1001, AX1002, AX2001

Use of the Substance/Preparation: Insulating material, Industrial Products, Matting agent, Rheology modifier, Various

Supplier:

Cabot Corporation 157 Concord Road Billerica, MA 01821 UNITED STATES Tel: 1-978-663-3455 Fax: 1-978-670-6955	Cabot Aerogel GmbH Industriepark Hoechst D660 65926 Frankfurt am Main GERMANY Tel: (+49) 69-305-22102 Fax: (+49) 69-305-22103	Cabot Specialty Chemicals, Inc. Sumitomo Shiba-Daimon Bldg. 3F 2-5-5 Shiba Daimon, Minato-ku Tokyo, 105-0012 Japan Tel: +81 3 6820 0255 Fax: +81 3 5425 4500	Cabot Brasil Industria e ComercioLtda Rua do Paraiso, 148-5 Andar - 04103-000-Paraiso Sao Paulo Brasil Tel: +55 11 2144 6400 Fax: +55 11 3253 0051
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E-Mail Address: SDS@cabot-corp.com

Emergency Telephone Number: US: CHEMTREC 1-800-424-9300 or 1-703-527-3887
Cabot (Germany): (+49) 69 305 47715

2. HAZARDS IDENTIFICATION

Pictogram: Not applicable

Indication of danger: Not hazardous according to EC-Directives 67/548/EC, 1999/45/EC, their various amendments and adaptations and EC-Regulation 1272/2008 (CLP)

Signal Word: Not applicable

Hazard Statement(s): Not applicable

Precautionary Statement(s): Not applicable

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

POTENTIAL HEALTH EFFECTS

Eye Contact: May cause mechanical irritation.

Skin Contact: May cause mechanical irritation. Repeated exposure may cause skin dryness or cracking.

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:	Health injuries are not known or expected under normal use. Low hazard for usual industrial or commercial handling.
Carcinogenic Effects:	Does not contain any substances 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, Skin
Medical Conditions Aggravated by Exposure:	Asthma, Respiratory disorder, Skin disorders
Potential Environmental Effects:	None known. No special environmental precautions required.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	EINECS/ELINCS Number	Weight %	EU Classification
Silica, [(trimethylsilyl)oxy]-modified	102262-30-6	Not determined	> 97	None

4. FIRST AID MEASURES

Skin Contact:	Wash thoroughly with soap and water. Seek medical attention if redness, swelling, itching, or burning occurs.
Eye Contact:	Flush eyes immediately with large amounts of water for 15 minutes. Seek medical attention if redness, swelling, itching, burning or visual disturbances occur.
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.
Notes to Physician:	Treat symptomatically.

5. FIRE AND IGNITION INFORMATION

Extinguishing Media:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. The product is insoluble and floats on water.
Special Protective Equipment for Firefighters:	Wear suitable protective equipment. In the event of fire, wear self-contained breathing apparatus.
Specific Hazards:	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.
Hazardous Decomposition and/or Combustion Products:	Carbon monoxide, Carbon dioxide, Organic products of decomposition, Formaldehyde.
Risk of Dust Explosion:	Dust may form explosive mixture in air. Take precautionary measures against static discharges.

6. ACCIDENTAL RELEASE MEASURES

- Personal Precautions:** Avoid dust cloud formation. Remove all sources of ignition. Ensure adequate ventilation. Use personal protective equipment. See also Section 8.
- Methods for Cleaning Up:** Clean up promptly by vacuum. Use a suitable vacuum cleaner. Do not create a dust cloud by using a brush or compressed air. Pick up and transfer to properly labelled containers. See Section 13.
- Environmental Precautions:** No special environmental precautions required. Local authorities should be advised if significant spillages cannot be contained.

7. HANDLING AND STORAGE

- Handling:** Avoid dust cloud 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. Avoid contact with skin and eyes. Take precautionary measures against static discharge. All metal parts of the mixing and processing equipment must be earthed/grounded. Ensure all equipment is electrically earthed/grounded before beginning transfer operations.
- Storage:** Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store together with volatile chemicals as they may be adsorbed onto product. Keep at ambient temperatures. Heating above 300°C leads to decomposition of surface treatment. Decomposition vapor should be ventilated.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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

EXPOSURE LIMITS

There are no exposure limits identified for this product. Exposure limits for silica are stated below. In its facilities globally, Cabot Corporation manages to the Germany TRGS 900 occupational exposure limit of 4 mg/m³, TWA, Inhalable fraction.

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

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 - TLV:	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

MAK: Maximale Arbeitsplatzkonzentration (Maximum Workplace Concentration)

OEL: Occupational Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit

TLV: Threshold Limit Value

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

Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Ensure adequate ventilation to maintain exposures below occupational limits.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection:	Approved respirator may be necessary if local exhaust ventilation is not adequate.
Hand Protection:	Repeated exposure may cause skin dryness or cracking. Use protective barrier cream before handling the product. Wear suitable gloves.
Eye Protection:	Wear eye/face protection. Safety glasses with side-shields. Or goggles.
Skin and Body Protection:	Wear suitable protective clothing. No special protective equipment required.
Other:	Handle in accordance with good industrial hygiene and safety practice. Emergency eyewash and safety shower should be located nearby.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White Powder
Odor:	None.
pH:	3.0 - 6.5
Density:	1900 - 2200 kg/m ³ @ 20°C
Bulk Density:	20 - 100 kg/m ³ @ 20°C
Vapor Pressure:	Not applicable

Boiling Point/Range:	2230°C after partial decomposition
Melting Point/Range:	1700°C after partial decomposition
Water Solubility:	Insoluble
% Volatile (by Volume):	Negligible
Evaporation Rate:	Not applicable
Viscosity:	Not applicable
Partition Coefficient (n-octanol/water):	Not determined
Flash Point:	Not applicable
Explosion Limits in Air - Upper (g/m³):	Not determined
Explosion Limits in Air - Lower (g/m³):	220 g/m ³ (dust)
Autoignition Temperature:	375°C
Method:	VDI 2263-1
Burn Velocity:	Does not ignite (Brennzahl 1)
Method:	VDI 2263-1
Minimum Ignition Energy:	100 - 300 mJ at room temperature
Method:	VDI 2263

10. STABILITY AND REACTIVITY

Stability:	Stable.
Hazardous Polymerization:	Hazardous polymerization does not occur.
Mechanical Sensitivity (shock):	Not sensitive to mechanical impact.
Conditions to Avoid:	Do not expose to temperatures above 300°C. 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. Avoid conditions where oxygen may condense in or around this product, as this will increase the flammability.
Hazardous Decomposition and/or Combustion Products:	Carbon monoxide, Carbon dioxide, Organic products of decomposition, Formaldehyde.
Static Discharge Effects:	Avoid dust cloud formation. Dust may form explosive mixture in air at concentrations above 220 g/m ³ . 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.

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.

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.

Eye Irritation: Draize score 1.0/110 @ 24 hr. Non-irritating.

Skin Irritation: Primary Dermal Irritation score = 0.0 Non-irritating

SUBCHRONIC TOXICITY

No data are available on the product itself.

CHRONIC TOXICITY

Mutagenic Effects:

Not mutagenic in AMES Test, chromosomal aberration in Chinese hamster ovary (CHO) cells.

Reproductive Toxicity: No data are available on the product itself. According to experience not expected.

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

Synergistic Materials: None reasonably foreseeable.

Carcinogenic Effects: Does not contain any substances 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)

12. ECOLOGICAL INFORMATION

Aquatic Toxicity: Not determined

ENVIRONMENTAL FATE

Mobility: Not expected to migrate.

Bioaccumulation: According to experience not expected.

Persistence / Degradability: The methods for determining biodegradability are not applicable to inorganic substances

Distribution to Environmental Compartments: Not determined.

PBT and vPvB Assessment: This substance does not fulfill the criteria for PBT or vPvB

Other adverse effects: No other data are available

13. DISPOSAL CONSIDERATIONS

Disclaimer: 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.

Can be landfilled or incinerated, when in compliance with local regulations.

14. TRANSPORT INFORMATION

UN Number: Not regulated

UN Proper Shipping Name: Not regulated

UN Shipping Class: Not regulated

UN Packing Group: Not regulated

IMDG (International Maritime Organization's Dangerous Goods Code):

Use UN classification listed above.

IATA:

Use UN classification listed above.

15. REGULATORY INFORMATION

Indication of danger: Not hazardous according to EC-Directives 67/548/EC, 1999/45/EC, their various amendments and adaptations and EC-Regulation 1272/2008 (CLP).

EU Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out

EU Exposure Scenarios

Per Article 14.4 of the REACH Regulation no exposure scenario has been developed as the substance/mixture is not hazardous.

International Inventories

All components of this product are listed on or exempt from the following inventories:

- YES - Australian Inventory of Chemical Substances (AICS)
- YES - Canadian Domestic Substances List (DSL)
- YES - Chinese Inventory
- YES - European Inventory of Existing Commercial Chemical Substances (EINECS)
- YES - Japanese Existing and New Chemical Substances (ENCS)
- YES - Korean Existing Chemicals List (KECL)
- YES - New Zealand Hazardous Substances and New Organisms Act (HSNO)
- YES - Philippine Inventory of Chemicals and Chemical Substances (PICCS)
- YES - United States Toxic Substances Control Act (TSCA) Inventory

Germany Water Endangering Class (WGK) Class

Chemical Name

Silica, [(trimethylsilyl)oxy]- nwg (not water endangering): 1429
modified

Switzerland Giftklasse (Poison Class) Toxic Category

Chemical Name

Silica, [(trimethylsilyl)oxy]- Bag T Nr. 102935 Not hazardous
modified

16. OTHER INFORMATION

Prepared by:
Revision Date:

Cabot Corporation - Safety, Health and Environmental Affairs
12/September/2012

16. OTHER INFORMATION

Previous Revision Date: 18/May/2011

Reason for Revision: Revisions to Section(s) 2, 3, 8, 12, 15

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