

## 1 Identification

- **Product identifier**
- **Trade name: LUDOX® AM-FS**
- **Application of the substance / the preparation:**  
Intermediate product of varied applicability in industry and trade.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
GRACE  
W. R. Grace & Co.-Conn  
7500 Grace Drive  
Columbia MD 21044  
U. S. A.
- **Information department:**  
Health and Safety (9 AM to 5 PM-EST) 1-410-531-4000  
MSDS.Davison@grace.com
- **Emergency telephone number:**  
Chemtrec North America: +1-800-424-9300  
Chemtrec International: +1-703-527-3887  
Other Emergencies (24hr): +1-410-531-4000

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

- **Label elements**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS08

- **Signal word** Warning
- **Hazard-determining components of labeling:**  
ethylene glycol
- **Hazard statements**  
May cause damage to organs through prolonged or repeated exposure.
- **Precautionary statements**  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Get medical advice/attention if you feel unwell.  
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Hazard description:**
- **WHMIS-symbols:** Not a WHMIS controlled product according to the classification criteria.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 1  
Fire = 0  
Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**

HEALTH	*1
FIRE	0
REACTIVITY	0

Health = \*1

Fire = 0

Reactivity = 0

**3 Composition/information on ingredients**· **Chemical characterization: Mixtures**· **Description:** Water colloidal suspension of amorphous silica.· **CAS No. and description:**

7732-18-5	water, distilled, or of similar purity	40-70%
7631-86-9	amorphous silicon dioxide, chemically prepared	25-50%

· **List of Dangerous Components**

107-21-1	ethylene glycol	⚠ STOT RE 2, H373; ⚠ Acute Tox. 4, H302	5-10%
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**4 First-aid measures**· **After inhalation:** Supply fresh air; consult doctor in case of complaints.· **After skin contact:**

Immediately flush skin with water for at least 15 minutes.

Remove contaminated clothing immediately.

· **After eye contact:**

Flush opened eye with large quantities of running water for at least 30 minutes. If symptoms occur, consult a doctor.

· **After swallowing:** Seek medical attention. Do not induce vomiting.· **Most important symptoms and effects, both acute and delayed**

No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

**5 Fire-fighting measures**· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.· **Hazardous combustion products** No further relevant information available.· **Protective equipment:** Wear personal protective equipment.· **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Collect contaminated fire fighting water separately. It must not enter the sewage system.

**6 Accidental release measures**· **Personal precautions, protective equipment and emergency procedures**

Wear protective clothing.

· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.· **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

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- **Reference to other sections** No dangerous substances are released.

## 7 Handling and storage

- **Precautions for safe handling** Avoid formation of respirable particles.
- **Information about protection against explosions and fires:** The product is not flammable.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Colloidal silica should be stored above 2 °C. Freezing temperatures can cause irreversible precipitation of the silica, therefore the product should be located in heated buildings. Avoid routine storage temperatures above 43 °C.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:** Protect from frost.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:**

### 7631-86-9 amorphous silicon dioxide, chemically prepared

IDLH	Short-term value: 3000 mg/m <sup>3</sup> IDLH: Immediately Dangerous to Life or Health
PEL	Long-term value: 80/%SiO <sub>2</sub> mg/m <sup>3</sup> OSHA TWA for amorphous silica
REL	Long-term value: 6 mg/m <sup>3</sup> NIOSH TWA
TLV	Long-term value: 10* 5** mg/m <sup>3</sup> ACGIH TWA *Total dust **Respirable fraction

### 107-21-1 ethylene glycol

TLV	Long-term value: NIC-10* mg/m <sup>3</sup> Ceiling limit value: (100) mg/m <sup>3</sup> (H);*as inhalable fraction and vapor
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### 7732-18-5 water, distilled, or of similar purity

PEL	Long-term value: - OSHA TWA: NONE ESTABLISHED
TLV	Long-term value: - ACGIH TWA: NONE ESTABLISHED

- **Additional information:** Valid lists at time of creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
The usual precautionary measures for handling chemicals should be followed.  
Do not breathe dust or spray mist.
- **Protection of hands:**



Protective gloves

Wear gloves for the protection against mechanical hazards.  
Use gloves of stable material (e.g. Nitrile)

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Check protective gloves prior to each use for their proper condition.

Check the permeability prior to each new use of the glove.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

Butyl rubber, BR

Nitrile rubber, NBR

Recommended thickness of the material:  $\geq 0.35$  mm

- **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**

Butyl rubber, BR

Nitrile rubber, NBR

- **For the permanent contact gloves made of the following materials are suitable:**

Butyl rubber, BR

Nitrile rubber, NBR

- **Not suitable are gloves made of the following materials:**

Leather gloves

Strong fabric gloves

- **Eye protection:**



Safety glasses

- **Body protection:** Protective work clothing

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

<b>Form:</b>	Fluid
<b>Color:</b>	Whitish

• <b>Odor:</b>	Odorless
• <b>Odour threshold:</b>	Not available.

• <b>pH-value at 25 °C (77 °F):</b>	9.2 - 10.0
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- **Change in condition**

<b>Melting point/Melting range:</b>	0 °C (32 °F) (water)
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<b>Boiling point/Boiling range:</b>	100 °C (212 °F) (water)
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- **Conditions of flammability**

<b>Flash point:</b>	Not available.
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• <b>Flammability (solid, gaseous):</b>	Product is not flammable.
• <b>Ignition temperature:</b>	Not available.
• <b>Decomposition temperature:</b>	Not available.

• <b>Auto igniting:</b>	Product is not self-igniting.
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· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
Lower:	- Vol %
Upper:	- Vol %
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17 mm Hg) (water)
· <b>Density at 20 °C (68 °F):</b>	1.191 - 1.206 g/cm <sup>3</sup> (9.939 - 10.064 lbs/gal)
· <b>Vapour density</b>	Not available
· <b>Evaporation rate</b>	Not available
· <b>Solubility in / Miscibility with</b>	
Water:	Fully miscible.
· <b>Coefficient of water/oil distribution:</b>	Not available.
· <b>Viscosity:</b>	
Dynamic at 20 °C (68 °F):	1.002 Pas (water)
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Chemical stability** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on the likely routes of exposure**
- **Delayed and immediate effects and chronic effects from short or long term exposure**
- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

### 7631-86-9 amorphous silicon dioxide, chemically prepared

Oral	LD50	>5000 mg/kg (rat) (OECD 401)
Dermal	LD50	>6000 mg/kg (rabbit) (no guidance available)
Inhalative	LC0	>140->2000 mg/m <sup>3</sup> /4h (rat) (OCED 403)
Maximum attainable concentration, mortality does not appear.		

### 107-21-1 ethylene glycol

Oral	LD50	7712 mg/kg (rat) ECHA 2014
	LDLo	786 mg/kg (human being)
Dermal	LD50	> 3500 mg/kg (rabbit) ECHA 2014

- **Primary irritant effect:**

- **on the skin:**

### 7631-86-9 amorphous silicon dioxide, chemically prepared

Irritation of skin	IS	0 (rabbit) (OECD 404)
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**107-21-1 ethylene glycol**

Irritation of skin	IS	0 (rabbit) (in vivo) ECHA 2011
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· **on the eye:****7631-86-9 amorphous silicon dioxide, chemically prepared**

Irritation of eyes	IS	0 (rabbit) (OECD 405)
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**107-21-1 ethylene glycol**

Irritation of eyes	IS	0 (rabbit) (in vivo) ECHA 2011
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· **Respiratory sensitization** No further relevant information available.· **Skin sensitization** No further relevant information available.· **Additional toxicological information:**· **Carcinogenic categories**· **IARC (International Agency for Research on Cancer)**

7631-86-9	amorphous silicon dioxide, chemically prepared	3
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· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Repeated dose toxicity****7631-86-9 amorphous silicon dioxide, chemically prepared**

Oral	NOAEL (90 d)	9000 mg/kg bw/day (rat) (OECD 408)
Inhalative	NOAEC (90 d)	1 mg/m <sup>3</sup> (rat) (OECD 413)

· **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**· **Carcinogenicity** No further relevant information available.· **Germ cell mutagenicity****7631-86-9 amorphous silicon dioxide, chemically prepared**

AMES Test	>5 mg/plate (in-vitro) (OECD 471) negative, with and without metabolic activation ECHA 2012
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· **Reproductive toxicity****7631-86-9 amorphous silicon dioxide, chemically prepared**

Oral	NOAEL (maternal toxicity)	1350 mg/kg bw/day (rat) (OECD 414)
	NOAEL (teratogenicity)	1350 mg/kg bw/day (rat) (OECD 414)

· **Specific target organ toxicity (single exposure)** No further relevant information available.· **Specific target organ toxicity (repeated exposure)** No further relevant information available.· **Aspiration hazard** No further relevant information available.**12 Ecological information**· **Toxicity**· **Aquatic toxicity:**· **Fish toxicity****7631-86-9 amorphous silicon dioxide, chemically prepared**

LC0 (96 h) (static)	10000 mg/l (zebra fish) (OECD 203)
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**107-21-1 ethylene glycol**

LC50 (24 h)	> 5000 mg/l (Carassius auratus) IUCLID Dataset 18-Feb-2000
LC50 (96 h)	72860 mg/l (Pimephales promelas) ECHA 2011
NOEC (7 d)	15380 mg/l (Pimephales promelas) (EPA 600/4-90/027) ECHA 2011

· **Water flea toxicity****7631-86-9 amorphous silicon dioxide, chemically prepared**

EC50 (24 h) &gt; 1000 mg/l (Daphnia magna) (OECD 202)

**107-21-1 ethylene glycol**EC50 (48 h) >100 mg/l (Daphnia magna) (OECD 202)  
ECHA 2011· **Algae toxicity****7631-86-9 amorphous silicon dioxide, chemically prepared**EC50 (72 h) > 10000 mg/l (Scenedesmus subspicatus) (OECD 201)  
comparable substance**107-21-1 ethylene glycol**EC50 (96 h) 6500 - 13000 mg/l (Selenastrum capricornutum) (EPA 600/9-78-018)  
ECHA 2011· **Bacterial toxicity****107-21-1 ethylene glycol**EC50 (16h) 10000 mg/l (Pseudomonas putida)  
IUCLID Dataset 18-Feb-2000· **Persistence and degradability** No further relevant information available.· **Other information:**

Do not allow product to reach sewage system, groundwater and any water course.

· **Bioaccumulative potential** No further relevant information available.· **Mobility in soil** No further relevant information available.· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.· **Other adverse effects** No further relevant information available.**13 Disposal considerations**· **Recommendation:**

Disposal must be made according to official regulations.

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

**14 Transport information**· **UN-Number**· **DOT, ADR, ADN, IMDG, IATA**

None

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· UN proper shipping name	
· DOT, ADR, ADN, IMDG, IATA	None
· Transport hazard class(es)	
· DOT, ADR, ADN, IMDG, IATA	
· Class	None
· Packing group	
· DOT, ADR, IMDG, IATA	None
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

## 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- SARA

### · SARA 302/304

None of the ingredients is listed.

### · SARA 313

107-21-1 | ethylene glycol

### · TSCA (Toxic Substances Control Act):

All ingredients are listed.

### · Proposition 65

#### · Chemicals known to cause cancer:

None of the ingredients is listed.

#### · Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

#### · Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

#### · Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

### · Carcinogenic categories

#### · EPA (Environmental Protection Agency)

None of the ingredients is listed.

#### · TLV (Threshold Limit Value established by ACGIH)

107-21-1 | ethylene glycol

#### · NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

### · Canadian DSL

7631-86-9 | amorphous silicon dioxide, chemically prepared

107-21-1 | ethylene glycol

7732-18-5 | water, distilled, or of similar purity

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• **Canadian NDSL**

All substances are listed or exempt from listing.

• **European EINECS**

All ingredients are listed.

• **Philippines Inventory of Chemicals and Chemical Substances PICCS**

All ingredients are listed.

• **Inventory of the Existing Chemical Substances manufactured or imported in China IECSC**

All ingredients are listed.

• **Australian Inventory of Chemical Substances AICS**

All ingredients are listed.

• **Existing and New Chemical Substance List ENCS**

7631-86-9	amorphous silicon dioxide, chemically prepared	1-548
107-21-1	ethylene glycol	2-230
7732-18-5	water, distilled, or of similar purity	

• **Korean Existing Chemical Inventory KECI**

7631-86-9	amorphous silicon dioxide, chemically prepared	KE-31032
107-21-1	ethylene glycol	KE-13169
7732-18-5	water, distilled, or of similar purity	KE-35400

• **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

• **Hazard pictograms**

GHS08

• **Signal word** Warning• **Hazard-determining components of labeling:**

ethylene glycol

• **Hazard statements**

May cause damage to organs through prolonged or repeated exposure.

• **Precautionary statements**

Do not breathe dust/fume/gas/mist/vapors/spray.

Get medical advice/attention if you feel unwell.

Dispose of contents/container in accordance with local/regional/national/international regulations.

**16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• **Relevant phrases**

H302 Harmful if swallowed.

H373 May cause damage to organs through prolonged or repeated exposure.

• **Department issuing SDS:** GRACE Safety & Health Department• **Tarif number** 38249098• **Contact:**

SALES OFFICES

USA:

GRACE

W. R. Grace &amp; Co.-Conn

7500 Grace DR

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- **Date of preparation / last revision** 11/10/2014 / 4.5
- **The first date of preparation** 12/08/2003
- **Number of revision times and the latest revision date** 4.6 / 11/03/2014

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
ICAO: International Civil Aviation Organisation  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
ACGIH: American Conference of Governmental Industrial Hygienists  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
WHMIS: Workplace Hazardous Materials Information System (Canada)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
Acute Tox. 4: Acute toxicity, Hazard Category 4  
STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2

- **\* Data compared to the previous version altered.**

USA