

Printing date 05/25/2018 Version: 21.2 Reviewed on 03/20/2018

1 Identification

· Product identifier

· Trade name: LUDOX® HSA

· 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



Skin Sens. 1 H317 May cause an allergic skin reaction.

- · Label elements
- · GHS label elements

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

Hazard pictograms



GHS07

- · Signal word Warning
- Hazard-determining components of labeling:

Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-methylisothiazol-3(2H)-one with magnesium chloride and magnesium nitrate

· Hazard statements

May cause an allergic skin reaction.

Precautionary statements

Avoid breathing dust/fume/gas/mist/vapors/spray

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves.

If on skin: Wash with plenty of water.

If skin irritation or rash occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Wash contaminated clothing before reuse.

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

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Safety Data Sheet acc. to OSHA HCS

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· Classification system:

· NFPA ratings (scale 0 - 4)



 $\begin{aligned} & \text{Health} = 2 \\ & \text{Fire} = 0 \\ & \text{Reactivity} = 0 \end{aligned}$

· HMIS-ratings (scale 0 - 4)



Health = 2 Fire = 0 Reactivity = 0

3 Composition/information on ingredients

· Chemical characterization: Mixtures

· Description: Aqueous colloidal suspension of surface treated silica.

· CAS No. a	nd description:			
7732-18-5	water, distilled, or of similar purity	65-70%		
7631-86-9	7631-86-9 amorphous silicon dioxide, chemically prepared			
· List of Dar	ngerous Components			
55965-84-9	Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-methylisothiazol-3(2H)-one with magnesium chloride and magnesium nitrate Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; ♦ Skin Corr. 1B, H314; ♦ Skin Sens. 1, H317	≤0.01%		

4 First-aid measures

- · Description of first aid measures
- · General information:

Immediately remove contaminated clothing if necessary to prevent direct skin contact.

- · 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.

If skin irritation occur, consult a doctor.

· 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.
- · Information for doctor:
- · Most important symptoms and effects, both acute and delayed Allergic reactions
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.

USA

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5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents:

Use fire fighting measures that suit the environment.

The product is not flammable.

- · Hazardous combustion products No further relevant information available.
- · Advice for firefighters
- · 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 product to reach sewage system or any water course.
- Methods and material for containment and cleaning up:

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

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Protective Action Criteria for Chemicals

· PAC-1:					
7631-86-9	amorphous silicon dioxide, chemically prepared	18 mg/m3			
· PAC-2:					
7631-86-9	amorphous silicon dioxide, chemically prepared	740 mg/m3			
· PAC-3:					
7631-86-9	amorphous silicon dioxide, chemically prepared	4,500 mg/m3			

7 Handling and storage

- · Handling:
- · 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.
- · Minimum storage temperature: > 2 °C

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

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· Conti	Control parameters				
· Components with limit values that require monitoring at the workplace:					
7631-	7631-86-9 amorphous silicon dioxide, chemically prepared				
IDLH	Short-term value: 3000 mg/m³ IDLH: Immediately Dangerous to Life or Health				
PEL	Long-term value: 80/%SiO2 mg/m³ OSHA TWA for amorphous silica				
REL	Long-term value: 6 mg/m³ NIOSH TWA				
TLV	Long-term value: 10* 5** mg/m³ ACGIH TWA *Total dust **Respirable fraction				
55965	55965-84-9 Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-methylisothiazol-3(2H)-one with magnesium chloride and magnesium nitrate				
TWA	Short-term value: 0.23 mg/m³ Long-term value: 0.076 mg/m³ Manufacturer suggested				
7732-	7732-18-5 water, distilled, or of similar purity				
PEL	Long-term value: - OSHA TWA: NONE ESTABLISHED				

- · Additional information: Valid lists at time of creation were used as basis.
- · Exposure controls

TLV

· Personal protective equipment:

Long-term value: -

· General protective and hygienic measures:

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

ACGIH TWA: NONE ESTABLISHED

Do not breathe dust or spray mist.

The usual precautionary measures for handling chemicals should be followed.

Do not eat, drink, smoke or sniff while working.

· Protection of hands:



Protective gloves

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.

Use gloves of stable material (e.g. Nitrile)

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

Material of gloves

Nitrile rubber, NBR

Butyl rubber, BR

Recommended thickness of the material: > 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

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Nitrile rubber, NBR

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· Not suitable are gloves made of the following materials:

Leather gloves
Strong fabric gloves

· Eye protection:



Safety glasses

· Body protection: Protective work clothing

Physical and chemical prope	rties
Information on basic physical and General Information Appearance: Form:	chemical properties Fluid
Color:	Clear
· Odor: · Odor threshold:	Odorless Not available.
· pH-value at 25 °C (77 °F):	3.5-7.0
Change in condition	
Melting point/Melting range:	0 °C (32 °F) (water)
Boiling point/Boiling range:	100 °C (212 °F) (water)
Conditions of flammability	
Flash point:	Not available.
Flammability (solid, gaseous): Ignition temperature: Decomposition temperature:	Product is not flammable. Not available. Not available.
Auto igniting:	Product is not self-igniting.
Danger of explosion: Explosion limits:	Product does not present an explosion hazard.
Lower: Upper:	Not determined. Not determined.
Vapor pressure at 25 °C (77 °F):	32 hPa (24 mm Hg) (water)
Density at 20 °C (68 °F): Vapor density	1.2 g/cm³ (10.014 lbs/gal) Not available
Evaporation rate	Not available
· Solubility in / Miscibility with Water: · Coefficient of water/oil distribution	Fully miscible. : Not available.
· Viscosity: Dynamic at 25 °C (77 °F):	7-10 mPas

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• Other information No further relevant information available.

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · 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:** Protect from contamination.
- · 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	· LD/LC50 values that are relevant for classification:						
7631-86-9	7631-86-9 amorphous silicon dioxide, chemically prepared						
Oral	Oral LD50 >5,000 mg/kg (rat) (OECD 401)						
Dermal	Dermal LD50 >5,000 mg/kg (rabbit)						
Inhalative	Inhalative LC0 >140->2,000 mg/m³/4h (rat) (OCED 403)						
	Maximum attainable concentration, mortality does not appear.						
55965-84-	55965-84-9 Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-methylisothiazol-3(2H)-one with magnesium chloride and magnesium nitrate						
Oral	LD50	50 mg/kg (rat)					
Dermal	LD50 (24 h)	87 mg/kg (rabbit)					
Inhalative	Inhalative LC50 (4 h) 0.33 mg/l (rat)						

· Primary irritant effect:

· on the skin:					
7631-86-9 amo	7631-86-9 amorphous silicon dioxide, chemically prepared				
Irritation of skin	Irritation of skin IS 0 (rabbit) (OECD 404) not irritating				
· on the eye:					
7631-86-9 amorphous silicon dioxide chemically prepared					

7631-86-9 amorphous silicon dioxide, chemically prepared

Irritation of eyes IS 0 (rabbit) (OECD 405) not irritating

- · Skin sensitization Sensitization possible through skin contact.
- · Additional toxicological information:
- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer)
 7631-86-9 | amorphous silicon dioxide, chemically prepared | 3
- · NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

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· Re	peated	l dose	toxicity

7631-86-9 amorphous silicon dioxide, chemically prepared

Oral NOAEL (90 d) 9,000 mg/kg bw/day (rat) (OECD 408) Inhalative NOAEC (90 d) 1 mg/m³ (rat) (OECD 413)

- CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
- · Carcinogenicity No further relevant information available.
- · Mutagenicity

7631-86-9 amorphous silicon dioxide, chemically prepared

AMES Test | >5 mg/plate (in-vitro) (OECD 471)
negative
with and without metabolic activation

· Reproductive toxicity

7631-86-9 amorphous silicon dioxide, chemically prepared

Oral NOAEL (maternal toxicity) 1,350 mg/kg bw/day (rat) (OECD 414) NOAEL (teratogenicity) 1,350 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	·Fish	toxicity
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7631-86-9 amorphous silicon dioxide, chemically prepared

LC0 (96 h) (static) 10,000 mg/l (zebra fish) (OECD 203)

55965-84-9 Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-methylisothiazol-3(2H)-one with magnesium chloride and magnesium nitrate

LC50 (96 h)

0.28 mg/l (Lepomis macrochirus)

1.6 mg/l (Oncorhynchus mykiss)
IUCLID Dataset (18/FEB/2000)
OECD TG 203

· Water flea toxicity

7631-86-9 amorphous silicon dioxide, chemically prepared

EC50 (24 h) >1,000 mg/l (Daphnia magna) (OECD 202)

55965-84-9 Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-methylisothiazol-3(2H)-one with magnesium chloride and magnesium nitrate

EC50 (48 h) 4.71 mg/l (Daphnia magna)

IUCLID Dataset (18/FEB/2000)

OECD TG 202

NOEC (21 d) 172 mg/l (Daphnia magna)

IUCLID Dataset (18/FEB/2000)

OECD TG 202

· Algae toxicity

7631-86-9 amorphous silicon dioxide, chemically prepared

EC50 (72 h) >10,000 mg/l (Scenedesmus subspicatus) (OECD 201) comparable substance

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55965-84-	(Contd. of page 7) 55965-84-9 Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-methylisothiazol-3(2H)-one with magnesium chloride and magnesium nitrate			
EC50	18 mg/l (Selenastrum capricornutum)			
	3 mg/l (Skeletonema costatum)			
· Bacterial	· Bacterial toxicity			
55965-84-	55965-84-9 Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-methylisothiazol-3(2H)-one with magnesium chloride and magnesium nitrate			
EC50 (16h	n) 5.7 mg/l (Pseudomonas putida) IUCLID Dataset (18/FEB/2000) DIN 38412-8			

- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes: Do not allow product to reach ground water, water course or sewage system.
- 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/provincial and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state/provincial and local requirements.

· UN-Number	
· DOT, ADR, ADN, IMDG, IATA	None
· 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/Additional information	on: Not dangerous according to the above specifications. GRACE recommendation for air transport: Cargo aircraft only.
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· DOT

· Hazardous substance:

15 Regulatory information

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

SA	\R/	7 3	02	/30	4

None of the ingredients is listed.

· SARA 313

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

7631-86-9 amorphous silicon dioxide, chemically prepared
55965-84-9 Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-methylisothiazol-3(2H)-one with magnesium chloride and magnesium nitrate

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

- · 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)

None of the ingredients is listed.

· 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

55965-84-9 Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-methylisothiazol-3(2H)-one with magnesium chloride and magnesium nitrate

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

- Canadian NDSL Not available.
- European EINECS

Inventory listing could not be confirmed for one or more substances.

· Philippines Inventory of Chemicals and Chemical Substances PICCS

All ingredients are listed or exempted from listing.

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

All ingredients are listed.

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		(Cı	ontd. of page 9)		
· Australian	Inventory of Chemical Substances AICS				
All ingredier	its are listed or exempted from listing.				
· Existing an	d New Chemical Substance List ENCS				
7631-86-9	amorphous silicon dioxide, chemically prepared	1-5	548		
55965-84-9	55965-84-9 Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-methylisothiazol-3(2H)-one with magnesium chloride and magnesium nitrate				
7732-18-5	7732-18-5 water, distilled, or of similar purity				
· Korean Exi	sting Chemical Inventory KECI				
7631-86-9	amorphous silicon dioxide, chemically prepared KE-31032				
55965-84-9	9 Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-methylisothiazol- KE-05738 3(2H)-one with magnesium chloride and magnesium nitrate				
7732-18-5	water, distilled, or of similar purity		KE-35400		
· TCSCA (Ta	iwan)				
7631-86-9	7631-86-9 amorphous silicon dioxide, chemically prepared EPEP4A01648271				
· New Zealar	nd Inventory of Chemicals (NZIoC)				
55965-84-9	55965-84-9 Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-methylisothiazol-3(2H)-one with magnesium chloride and magnesium nitrate				
7732-18-5	water, distilled, or of similar purity				

· GHS label elements

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

· Hazard pictograms



GHS07

· Signal word Warning

· Hazard-determining components of labeling:

Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-methylisothiazol-3(2H)-one with magnesium chloride and magnesium nitrate

· Hazard statements

May cause an allergic skin reaction.

· Precautionary statements

Avoid breathing dust/fume/gas/mist/vapors/spray

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves.

If on skin: Wash with plenty of water.

If skin irritation or rash occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Wash contaminated clothing before reuse.

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

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

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H331 Toxic if inhaled.

- · Department issuing SDS: GRACE Safety & Health Department
- · Tarif number 3824 9996
- · Contact:

SALES OFFICES

USA: GRACE W. R. Grace & Co.-Conn 7500 Grace DR Columbia, MD 21044

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- · Date of preparation / last revision 05/25/2018 / 21.1
- The first date of preparation 10/23/2014
- · Number of revision times and the latest revision date 21.2 / 03/20/2018
- · 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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit Acute Tox 3: Acute toxicity — Category 3

Acute Tox. 3: Acute toxicity – Category 3
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Sens. 1: Skin sensitisation – Category 1

* Data compared to the previous version altered.

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