

1 Identification

- **Product identifier**
- **Trade name: LUDOX® CL**
- **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**



- **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
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 2
Fire = 0
Reactivity = 0

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• **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

• **Hazard not otherwise classified**

When exceeding the OEL (Occupational Exposure Limit) a mechanical overburdening of the respiratory system is possible.

The product is very adsorbent and may have a drying effect on skin and eyes.

3 Composition/information on ingredients• **Chemical characterization: Mixtures**

• **Description:** Aqueous colloidal suspension of surface treated silica.

• **CAS No. and description:**

7631-86-9	amorphous silicon dioxide, chemically prepared	25-35%
7732-18-5	water, distilled, or of similar purity	60-70%
21645-51-2	aluminum hydroxide	2-5%

• **List of Dangerous 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	≤0.01%
	☠ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; ☠ Skin Corr. 1B, H314; ☠ Skin Sens. 1, H317	

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.

5 Fire-fighting measures• **Extinguishing media**• **Suitable extinguishing agents:**

The product is not flammable.

Use fire fighting measures that suit the environment.

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- **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.
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
- **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
21645-51-2	aluminum hydroxide	8.7 mg/m3

PAC-2:

7631-86-9	amorphous silicon dioxide, chemically prepared	740 mg/m3
21645-51-2	aluminum hydroxide	73 mg/m3

PAC-3:

7631-86-9	amorphous silicon dioxide, chemically prepared	4,500 mg/m3
21645-51-2	aluminum hydroxide	440 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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· **Control parameters**· **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 ³ IDLH: Immediately Dangerous to Life or Health
PEL	Long-term value: 80/%SiO ₂ mg/m ³ OSHA TWA for amorphous silica
REL	Long-term value: 6 mg/m ³ NIOSH TWA
TLV	Long-term value: 10* 5** mg/m ³ OSHA TWA *Total dust **Respirable fraction

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/m ³ Long-term value: 0.076 mg/m ³ Manufacturer suggested
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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 Occupational Exposure Limit Values for possible hazards during processing:****Aluminium salts, soluble**

REL	Long-term value: 2 mg/m ³ TWA
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· **Additional information:** Valid lists at time of creation were used as basis.· **Exposure controls**· **Personal protective equipment:**· **General protective and hygienic measures:**

Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
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

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- **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:**

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:**

Form: Fluid
Color: Cloudy

- **Odor:** Odorless
- **Odor threshold:** Not available.

- **pH-value at 20 °C (68 °F):** 4-5

- **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):** Product is not flammable.
- **Ignition temperature:** Not available.
- **Decomposition temperature:** Not available.

- **Auto igniting:** Product is not self-igniting.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**

Lower: - Vol %
Upper: - Vol %

- **Vapor pressure at 25 °C (77 °F):** 3.2 kPa
(water)

- **Density at 20 °C (68 °F):** 1.2-1.3 g/cm³ (10.014-10.8485 lbs/gal)
- **Vapor density** Not available

- **Evaporation rate** Not available

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|--|--|
| <ul style="list-style-type: none"> • Solubility in / Miscibility with Water: Fully miscible. • Coefficient of water/oil distribution: Not available. | |
| <ul style="list-style-type: none"> • Viscosity: • Dynamic at 25 °C (77 °F): typical 10 mPas | |
| <ul style="list-style-type: none"> • 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**
In case of thermal decomposition caused by smouldering and incomplete combustion toxic fumes may be developed.
- **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 values that are relevant for classification:**

7631-86-9 amorphous silicon dioxide, chemically prepared

Oral	LD50	>5,000 mg/kg (rat) (OECD 401)
Dermal	LD50	>5,000 mg/kg (rabbit)
Inhalative	LC0	>140->2,000 mg/m³/4h (rat) (OCED 403) Maximum attainable concentration, mortality does not appear.

21645-51-2 aluminum hydroxide

Oral	LD50	>15,900 mg/kg (rat) (OECD 401) comparable substance ECHA 2014
Inhalative	LC50 (4 h)	>2.3 mg/l (rat) (40 CFR 158 81-3) ECHA 2011

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	64 mg/kg (rat) ECHA 2018
Dermal	LD50 (24 h)	87 mg/kg (rabbit) ECHA 2018
Inhalative	LC50 (4 h)	0.33 mg/l (rat) ECHA 2018

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• **Primary irritant effect:**• **on the skin:****7631-86-9 amorphous silicon dioxide, chemically prepared**

Irritation of skin	IS	0 (rabbit) (OECD 404) not irritating
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21645-51-2 aluminum hydroxide

Irritation of skin	IS	0 (rabbit) (OECD 404) 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) not irritating
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21645-51-2 aluminum hydroxide

Irritation of eyes	IS	0 (rabbit) (OECD 405) ECHA 2011
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• **Respiratory sensitization** No further relevant information available.• **Skin sensitization****21645-51-2 aluminum hydroxide**

Sensitization	EC3	0 % (guinea pig) (OECD 406) GRACE
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• **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)	9,000 mg/kg bw/day (rat) (OECD 408)
Inhalative	NOAEC (90 d)	1 mg/m ³ (rat) (OECD 413)

• **CMR effects (carcinogenicity, 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
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• **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.

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12 Ecological information· **Toxicity**· **Aquatic toxicity:**· **Fish toxicity**

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
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 toxicity**

21645-51-2 aluminum hydroxide	
EC10 (3 h)	>200 mg/l (sludge) comp. substance
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)	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 undiluted product or large quantities of it to reach ground water, water course or sewage system.

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- **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.

14 Transport information

- | | |
|--|--|
| • 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: | Not dangerous according to the above specifications.
GRACE recommendation for air transport: Cargo aircraft only. |

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**

None of the ingredients is listed.

- **TSCA (Toxic Substances Control Act):**

7631-86-9	amorphous silicon dioxide, chemically prepared
21645-51-2	aluminum hydroxide
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

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• **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

21645-51-2 aluminum hydroxide

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.

All substances are listed or exempt from listing.

• **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.

• **Australian Inventory of Chemical Substances AICS**

All ingredients are listed or exempted from listing.

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

7631-86-9 amorphous silicon dioxide, chemically prepared 1-548

21645-51-2 aluminum hydroxide 1-17

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 9-378; 5-5235

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

• **Korean Existing Chemical Inventory KECI**

7631-86-9 amorphous silicon dioxide, chemically prepared KE-31032

21645-51-2 aluminum hydroxide KE-00980

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 KE-05738

7732-18-5 water, distilled, or of similar purity KE-35400

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• **TCSCA (Taiwan)**

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

EPEP4A01648271

• **New Zealand Inventory of Chemicals (NZIoC)**

All ingredients are listed or exempted from listing.

• **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

Wear protective gloves/protective clothing/eye protection/face protection.

If on skin: Wash with plenty of soap and water.

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

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.

H331 Toxic if inhaled.

• **Department issuing SDS:** GRACE Safety & Health Department• **Tarif number** 3824 9996• **Contact:**

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- **Date of preparation / last revision** 12/21/2018 / 10.1
- **The first date of preparation** 10/11/2016
- **Number of revision times and the latest revision date** 10.2 / 12/21/2018

• **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
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
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Sens. 1: Skin sensitisation – Category 1

- **Others** No further relevant information available.
- *** Data compared to the previous version altered.**

USA