

## 1 Identification

- **Product identifier**
- **Trade name: LUDOX® SK**
- **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**  
H317 May cause an allergic skin reaction.
- **Precautionary statements**  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves.  
P302+P352 If on skin: Wash with plenty of water.  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
P401 Store in accordance with local/regional/national/international regulations.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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· **Classification system:**· **NFPA ratings (scale 0 - 4)**

Health = 2  
Fire = 0  
Reactivity = 0

· **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. and description:**

7732-18-5	water, distilled, or of similar purity	50-75%
7631-86-9	amorphous silicon dioxide, chemically prepared	25-50%
	Polymer solution	≤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. 2, H310; Acute Tox. 2, H330; ⚠ Skin Corr. 1C, H314; Eye Dam. 1, H318; ⚠ Skin Sens. 1A, 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.

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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.  
Inform respective authorities in case of seepage into water course or sewage system.
- **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
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**· PAC-2:**

7631-86-9	amorphous silicon dioxide, chemically prepared	740 mg/m3
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**· PAC-3:**

7631-86-9	amorphous silicon dioxide, chemically prepared	4,500 mg/m3
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## 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

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**8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

**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

**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> OSHA TWA *Total dust **Respirable fraction

**9002-89-5 vinyl alcohol polymers**

PEL	OSHA TWA Not established
TLV	ACGIH TWA Not established

**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 <sup>3</sup> Long-term value: 0.076 mg/m <sup>3</sup> Manufacturer suggested
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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  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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Nitrile rubber, NBR  
Butyl rubber, BR  
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>	Cloudy

- |                          |                 |
|--------------------------|-----------------|
| · <b>Odor:</b>           | Odorless        |
| · <b>Odor threshold:</b> | Not applicable. |

- |                                     |           |
|-------------------------------------|-----------|
| · <b>pH-value at 25 °C (77 °F):</b> | 3.5 - 5.0 |
|-------------------------------------|-----------|

- **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 determined.
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- |   |                           |
|---|---------------------------|
| · <b>Flammability (solid, gaseous):</b> | Product is not flammable. |
| · <b>Ignition temperature:</b>          | Not applicable.           |
| · <b>Decomposition temperature:</b>     | Not applicable.           |

- |                         |                               |
|-------------------------|-------------------------------|
| · <b>Auto igniting:</b> | Product is not self-igniting. |
|-------------------------|-------------------------------|

- |                               |   |
|-------------------------------|---|
| · <b>Danger of explosion:</b> | Product does not present an explosion hazard. |
|-------------------------------|---|

- |                            |                 |
|----------------------------|-----------------|
| · <b>Explosion limits:</b> |                 |
| <b>Lower:</b>              | Not determined. |
| <b>Upper:</b>              | Not determined. |

- |   |                   |
|---|-------------------|
| · <b>Vapor pressure at 25 °C (77 °F):</b> | 32 hPa (24 mm Hg) |
|---|-------------------|

- |                                    |  |
|------------------------------------|--|
| · <b>Density at 15 °C (59 °F):</b> | 1.164-1,180 g/cm <sup>3</sup> (9.71358-9.8471 lbs/gal) |
| · <b>Vapor density</b>             | Not available  |

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· <b>Evaporation rate</b>	Not available
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Coefficient of water/oil distribution:</b>	Not available.
· <b>Viscosity:</b>	
<b>Dynamic at 20 °C (68 °F):</b>	1.002 mPas (water)
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability** No decomposition if used and stored 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.  
No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **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.		

### 9002-89-5 vinyl alcohol polymers

Oral	LD50	>20,000 mg/kg (rat)
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### 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

- **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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· **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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· **Respiratory sensitization** No further relevant information available.· **Skin sensitization**

No further relevant information available.

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
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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	NOAEL (90d)	31 mg/m³ (rat) (acc. to 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.**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)
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**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
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· **Water flea toxicity****7631-86-9 amorphous silicon dioxide, chemically prepared**

EC50 (24 h) &gt;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 202NOEC (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****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 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.

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**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 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. 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.

- SARA 311/312 Respiratory or Skin Sensitization.

## · TSCA (Toxic Substances Control Act):

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

## · 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.

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

None of the ingredients is listed.

· **Canadian DSL**

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

· **European EINECS**

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

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

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

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

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

· **Australian Inventory of Chemical Substances AICS**

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

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

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

· **Korean Existing Chemical Inventory KECI**

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

· **TCSCA (Taiwan)**

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

EPEP4A01648271

· **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**

H317 May cause an allergic skin reaction.

· **Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P272 Contaminated work clothing must not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves.

P302+P352 If on skin: Wash with plenty of water.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P401 Store in accordance with local/regional/national/international regulations.

P501 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.

H310 Fatal in contact with skin.

H314 Causes severe skin burns and eye damage.

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H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H330 Fatal if inhaled.

· **Department issuing SDS:** GRACE Safety & Health Department· **Harmonized Tariff Schedule** 3824 9996· **Contact:**

SALES OFFICES

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· **Date of preparation / last revision** 10/12/2020 / 27.1· **The first date of preparation** 12/12/2005· **Number of revision times and the latest revision date** 28.0 / 10/12/2020· **Abbreviations and acronyms:**

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

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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. 2: Acute toxicity – Category 2  
Skin Corr. 1C: Skin corrosion/irritation – Category 1C  
Eye Dam. 1: Serious eye damage/eye irritation – Category 1  
Skin Sens. 1: Skin sensitisation – Category 1  
Skin Sens. 1A: Skin sensitisation – Category 1A

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

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