

# Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU



## Luminol $\geq 95\%$ , for synthesis

article number: **4203**

Version: **4.0 en**

Replaces version of: 04.03.2024

Version: (3)

date of compilation: 07.03.2016

Revision: 19.09.2024

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Identification of the substance

**Luminol  $\geq 95\%$ , for synthesis**

Article number

4203

Registration number (REACH)

It is not required to list the identified uses because the substance is not subject to registration according to REACH ( $< 1$  t/a).

EC number

208-309-4

CAS number

521-31-3

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses:

Laboratory chemical  
Laboratory and analytical use

Uses advised against:

Do not use for private purposes (household).  
Food, drink and animal feedingstuffs.

### 1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co. KG  
Schoemperlenstr. 3-5  
D-76185 Karlsruhe  
Germany

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Competent person responsible for the safety data sheet: Department Health, Safety and Environment

**e-mail (competent person):**

**[sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)**

### 1.4 Emergency telephone number

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

| Section | Hazard class                                                                    | Cat-egory | Hazard class and category | Hazard statement |
|---------|---------------------------------------------------------------------------------|-----------|---------------------------|------------------|
| 3.10    | Acute toxicity (oral)                                                           | 4         | Acute Tox. 4              | H302             |
| 3.2     | Skin corrosion/irritation                                                       | 2         | Skin Irrit. 2             | H315             |
| 3.3     | Serious eye damage/eye irritation                                               | 2         | Eye Irrit. 2              | H319             |
| 3.8R    | Specific target organ toxicity - single exposure (respiratory tract irritation) | 3         | STOT SE 3                 | H335             |

For full text of abbreviations: see SECTION 16

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## 2.2 Label elements

**Labelling according to Regulation (EC) No 1272/2008 (CLP)**

**Signal word**

**Warning**

**Pictograms**

GHS07



### **Hazard statements**

|      |                                  |
|------|----------------------------------|
| H302 | Harmful if swallowed             |
| H315 | Causes skin irritation           |
| H319 | Causes serious eye irritation    |
| H335 | May cause respiratory irritation |

### **Precautionary statements**

#### **Precautionary statements - prevention**

|      |                                                                           |
|------|---------------------------------------------------------------------------|
| P280 | Wear protective gloves/protective clothing/eye protection/face protection |
|------|---------------------------------------------------------------------------|

#### **Precautionary statements - response**

|                |                                                                                                                                 |
|----------------|---------------------------------------------------------------------------------------------------------------------------------|
| P302+P352      | IF ON SKIN: Wash with plenty of water                                                                                           |
| P304+P340      | IF INHALED: Remove person to fresh air and keep comfortable for breathing                                                       |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing |

### **Labelling of packages where the contents do not exceed 125 ml**

Signal word: **Warning**

Hazard pictogram(s):



|           |                                                                            |
|-----------|----------------------------------------------------------------------------|
| H335      | May cause respiratory irritation.                                          |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |

### **Labelling of packages where the contents do not exceed 10 ml**

|                           |              |
|---------------------------|--------------|
| Signal word:              | Not required |
| Hazard pictogram(s):      | Not required |
| Hazard statements:        | Not required |
| Precautionary statements: | Not required |

## 2.3 Other hazards

### **Results of PBT and vPvB assessment**

According to the results of its assessment, this substance is not a PBT or a vPvB.

### **Endocrine disrupting properties**

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                   |                |
|-------------------|----------------|
| Name of substance | Luminol        |
| Molecular formula | $C_8H_7N_3O_2$ |
| Molar mass        | 177,2 g/mol    |
| CAS No            | 521-31-3       |
| EC No             | 208-309-4      |

| Substance, Specific Conc. Limits, M-factors, ATE |           |            |                |
|--------------------------------------------------|-----------|------------|----------------|
| Specific Conc. Limits                            | M-Factors | ATE        | Exposure route |
| -                                                | -         | >500 mg/kg | oral           |

## SECTION 4: First aid measures

### 4.1 Description of first aid measures



#### General notes

Take off contaminated clothing.

#### Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following skin contact

Rinse skin with water/shower. In case of skin irritation, consult a physician.

#### Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

#### Following ingestion

Rinse mouth with water (only if the person is conscious). Call a doctor.

### 4.2 Most important symptoms and effects, both acute and delayed

Vomiting, Irritation, Cough, Dyspnoea

### 4.3 Indication of any immediate medical attention and special treatment needed

none

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media



#### Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings!  
water, foam, dry extinguishing powder, ABC-powder

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## Unsuitable extinguishing media

water jet

## 5.2 Special hazards arising from the substance or mixture

Combustible.

## Hazardous combustion products

In case of fire may be liberated: Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

## 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures



#### For non-emergency personnel

Avoid contact with skin, eyes and clothes. Do not breathe dust.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

### 6.3 Methods and material for containment and cleaning up

#### Advice on how to contain a spill

Covering of drains. Take up mechanically.

#### Advice on how to clean up a spill

Take up mechanically. Control of dust.

#### Other information relating to spills and releases

Place in appropriate containers for disposal.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Provision of sufficient ventilation. Avoid dust formation.

#### Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

#### Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place.

#### Incompatible substances or mixtures

Observe hints for combined storage. Incompatible materials: see section 10.

#### Consideration of other advice:

#### Ventilation requirements

Use local and general ventilation.

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## Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

### 7.3 Specific end use(s)

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### National limit values

#### Occupational exposure limit values (Workplace Exposure Limits)

This information is not available.

### 8.2 Exposure controls

#### Individual protection measures (personal protective equipment)

##### Eye/face protection



Use safety goggle with side protection.

##### Skin protection



#### • hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 °C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

#### • type of material

NBR (Nitrile rubber)

#### • material thickness

>0,11 mm

#### • breakthrough times of the glove material

>480 minutes (permeation: level 6)

#### • other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

#### Respiratory protection



Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

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### Environmental exposure controls

Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                                                          |                                                           |
|----------------------------------------------------------|-----------------------------------------------------------|
| Physical state                                           | solid                                                     |
| Form                                                     | powder                                                    |
| Colour                                                   | light yellow - light green                                |
| Odour                                                    | odourless                                                 |
| Melting point/freezing point                             | 325 – 330 °C                                              |
| Boiling point or initial boiling point and boiling range | not determined                                            |
| Flammability                                             | this material is combustible, but will not ignite readily |
| Lower and upper explosion limit                          | not relevant (solid)                                      |
| Flash point                                              | not applicable                                            |
| Auto-ignition temperature                                | not determined                                            |
| Decomposition temperature                                | not relevant                                              |
| pH (value)                                               | not applicable                                            |
| Kinematic viscosity                                      | not relevant                                              |

#### Solubility(ies)

|                                |                         |
|--------------------------------|-------------------------|
| Water solubility               | (practically insoluble) |
| Solubility in organic solvents | soluble                 |

#### Partition coefficient

|                                                    |               |
|----------------------------------------------------|---------------|
| Partition coefficient n-octanol/water (log value): | 0,74 (TOXNET) |
|----------------------------------------------------|---------------|

|                 |                |
|-----------------|----------------|
| Vapour pressure | not determined |
|-----------------|----------------|

#### Density and/or relative density

|                         |                      |
|-------------------------|----------------------|
| Density                 | not determined       |
| Relative vapour density | not relevant (solid) |

|                          |                    |
|--------------------------|--------------------|
| Particle characteristics | No data available. |
|--------------------------|--------------------|

#### Other safety parameters

|                      |      |
|----------------------|------|
| Oxidising properties | none |
|----------------------|------|

### 9.2 Other information

|                                            |                            |
|--------------------------------------------|----------------------------|
| Information with regard to physical hazard | hazard classes acc. to GHS |
|--------------------------------------------|----------------------------|

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classes:

(physical hazards): not relevant

Other safety characteristics:

There is no additional information.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

### 10.3 Possibility of hazardous reactions

**Violent reaction with:** strong oxidiser

### 10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

### 10.5 Incompatible materials

There is no additional information.

### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

**Classification according to GHS (1272/2008/EC, CLP)**

#### Acute toxicity

Harmful if swallowed.

| Acute toxicity |          |            |         |        |        |
|----------------|----------|------------|---------|--------|--------|
| Exposure route | Endpoint | Value      | Species | Method | Source |
| oral           | LD50     | >500 mg/kg | rat     |        | TOXNET |

#### Skin corrosion/irritation

Causes skin irritation.

#### Serious eye damage/eye irritation

Causes serious eye irritation.

#### Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

#### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

#### Carcinogenicity

Shall not be classified as carcinogenic.

#### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

#### Specific target organ toxicity - single exposure

May cause respiratory irritation.

#### Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

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## Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

## Symptoms related to the physical, chemical and toxicological characteristics

### • If swallowed

Data are not available.

### • If in eyes

Causes serious eye irritation

### • If inhaled

Irritation to respiratory tract, cough, Dyspnoea

### • If on skin

causes skin irritation

### • Other information

none

## 11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

## 11.3 Information on other hazards

There is no additional information.

## SECTION 12: Ecological information

### 12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

### 12.2 Persistence and degradability

Theoretical Oxygen Demand (without nitrification):  $1,174 \text{ mg/mg}$

Theoretical Oxygen Demand (with nitrification):  $1,656 \text{ mg/mg}$

Theoretical Carbon Dioxide:  $1,987 \text{ mg/mg}$

### 12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

|                           |               |
|---------------------------|---------------|
| n-octanol/water (log KOW) | 0,74 (TOXNET) |
|---------------------------|---------------|

### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

Data are not available.

### 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

### 12.7 Other adverse effects

Data are not available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/contain-



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er in accordance with local/regional/national/international regulations.

### Sewage disposal-relevant information

Do not empty into drains.

### Waste treatment of containers/packagings

Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

## 13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

### Properties of waste which render it hazardous

- HP 4** irritant - skin irritation and eye damage
- HP 5** specific target organ toxicity (STOT)/aspiration toxicity
- HP 6** acute toxicity

## 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

## SECTION 14: Transport information

- |                                                                                           |                                                                       |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| <b>14.1 UN number or ID number</b>                                                        | not subject to transport regulations                                  |
| <b>14.2 UN proper shipping name</b>                                                       | not assigned                                                          |
| <b>14.3 Transport hazard class(es)</b>                                                    | none                                                                  |
| <b>14.4 Packing group</b>                                                                 | not assigned                                                          |
| <b>14.5 Environmental hazards</b>                                                         | non-environmentally hazardous acc. to the dangerous goods regulations |
| <b>14.6 Special precautions for user</b>                                                  | There is no additional information.                                   |
| <b>14.7 Maritime transport in bulk according to IMO instruments</b>                       | The cargo is not intended to be carried in bulk.                      |
| <b>14.8 <u>Information for each of the UN Model Regulations</u></b>                       |                                                                       |
| <b>International Maritime Dangerous Goods Code (IMDG) - Additional information</b>        |                                                                       |
| Not subject to IMDG.                                                                      |                                                                       |
| <b>International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information</b> |                                                                       |
| Not subject to ICAO-IATA.                                                                 |                                                                       |

## SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- Relevant provisions of the European Union (EU)**
- Restrictions according to REACH, Annex XVII**  
not listed
- List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list**  
not listed

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## Seveso Directive

| 2012/18/EU (Seveso III) |                                       |                                                                                       |       |
|-------------------------|---------------------------------------|---------------------------------------------------------------------------------------|-------|
| No                      | Dangerous substance/hazard categories | Qualifying quantity (tonnes) for the application of lower and upper-tier requirements | Notes |
|                         | not assigned                          |                                                                                       |       |

## Deco-Paint Directive

|             |     |
|-------------|-----|
| VOC content | 0 % |
|-------------|-----|

## Industrial Emissions Directive (IED)

|             |     |
|-------------|-----|
| VOC content | 0 % |
|-------------|-----|

## Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

## Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

## Water Framework Directive (WFD)

not listed

## Regulation on the marketing and use of explosives precursors

not listed

## Regulation on drug precursors

not listed

## Regulation on substances that deplete the ozone layer (ODS)

not listed

## Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

## Regulation on persistent organic pollutants (POP)

not listed

## Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

## National inventories

| Country | Inventory | Status              |
|---------|-----------|---------------------|
| AU      | AIIC      | substance is listed |
| CA      | DSL       | substance is listed |
| CN      | IECSC     | substance is listed |
| EU      | ECSI      | substance is listed |
| MX      | INSQ      | substance is listed |
| NZ      | NZIoC     | substance is listed |
| PH      | PICCS     | substance is listed |
| TW      | TCSI      | substance is listed |

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| Country | Inventory | Status                       |
|---------|-----------|------------------------------|
| US      | TSCA      | substance is listed (ACTIVE) |
| VN      | NCI       | substance is listed          |

### Legend

|       |                                                                         |
|-------|-------------------------------------------------------------------------|
| AIIC  | Australian Inventory of Industrial Chemicals                            |
| DSL   | Domestic Substances List (DSL)                                          |
| ECSI  | EC Substance Inventory (EINECS, ELINCS, NLP)                            |
| IECSC | Inventory of Existing Chemical Substances Produced or Imported in China |
| INSQ  | National Inventory of Chemical Substances                               |
| NCI   | National Chemical Inventory                                             |
| NZIoC | New Zealand Inventory of Chemicals                                      |
| PICCS | Philippine Inventory of Chemicals and Chemical Substances (PICCS)       |
| TCSI  | Taiwan Chemical Substance Inventory                                     |
| TSCA  | Toxic Substance Control Act                                             |

## 15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

## SECTION 16: Other information

### Indication of changes (revised safety data sheet)

| Section | Former entry (text/value)                   | Actual entry (text/value)                                                                       | Safety-relevant |
|---------|---------------------------------------------|-------------------------------------------------------------------------------------------------|-----------------|
| 2.2     |                                             | Labelling of packages where the contents do not exceed 125 ml:<br>change in the listing (table) | yes             |
| 2.2     |                                             | Hazard pictogram(s):                                                                            | yes             |
| 2.2     |                                             | Hazard pictogram(s):<br>change in the listing (table)                                           | yes             |
| 2.2     |                                             | Labelling of packages where the contents do not exceed 10 ml                                    | yes             |
| 2.2     |                                             | Signal word:<br>Not required                                                                    | yes             |
| 2.2     |                                             | Hazard pictogram(s):<br>Not required                                                            | yes             |
| 2.2     |                                             | Hazard statements:<br>Not required                                                              | yes             |
| 2.2     |                                             | Precautionary statements:<br>Not required                                                       | yes             |
| 15.1    | Restrictions according to REACH, Annex XVII | Restrictions according to REACH, Annex XVII:<br>not listed                                      | yes             |
| 15.1    |                                             | Dangerous substances with restrictions (REACH, Annex XVII):<br>change in the listing (table)    | yes             |

### Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations                                                                                                                            |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ADR   | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| ATE   | Acute Toxicity Estimate                                                                                                                                       |
| CAS   | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)                                                        |
| CLP   | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures                                                            |

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| Abbr.    | Descriptions of used abbreviations                                                                                                                                                |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DGR      | Dangerous Goods Regulations (see IATA/DGR)                                                                                                                                        |
| EC No    | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| ED       | Endocrine disruptor                                                                                                                                                               |
| EINECS   | European Inventory of Existing Commercial Chemical Substances                                                                                                                     |
| ELINCS   | European List of Notified Chemical Substances                                                                                                                                     |
| GHS      | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations                                                                         |
| IATA     | International Air Transport Association                                                                                                                                           |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA)                                                                                                                    |
| ICAO     | International Civil Aviation Organization                                                                                                                                         |
| IMDG     | International Maritime Dangerous Goods Code                                                                                                                                       |
| LD50     | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval                                                  |
| NLP      | No-Longer Polymer                                                                                                                                                                 |
| PBT      | Persistent, Bioaccumulative and Toxic                                                                                                                                             |
| REACH    | Registration, Evaluation, Authorisation and Restriction of Chemicals                                                                                                              |
| SVHC     | Substance of Very High Concern                                                                                                                                                    |
| VOC      | Volatile Organic Compounds                                                                                                                                                        |
| vPvB     | Very Persistent and very Bioaccumulative                                                                                                                                          |

### Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.  
Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

### List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text                              |
|------|-----------------------------------|
| H302 | Harmful if swallowed.             |
| H315 | Causes skin irritation.           |
| H319 | Causes serious eye irritation.    |
| H335 | May cause respiratory irritation. |

### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.