

# Hraniclean 07

Issue date: 8/26/2017

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
Revision date: 9/30/2025

Supersedes version of: 11/13/2023

Version: 4.0

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

### 1.1. Product identifier

Product form : Mixture  
Trade name : Hraniclean 07  
UFI : P5T2-J03A-600Q-7F0M

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

#### Relevant identified uses

Intended for general public  
Main use category : Professional use  
Use of the substance/mixture : cleaner of PVAc adhesives and paints  
Function or use category : Other products for chemical or technical processes

#### Uses advised against

Restrictions on use : Not to be used for any purpose other than the one the product was designed for

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

#### Distributor

Hranipex Czech Republic k.s.  
J. Rýznerové 97, Komorovice  
CZ 396 01 Humpolec  
Czech Republic  
T +420 565 501 211

[cz-hranipex@hranipex.com](mailto:cz-hranipex@hranipex.com), [www.hranipex.cz](http://www.hranipex.cz)

E-mail address of competent person responsible for the SDS :  
[sds@regartis.com](mailto:sds@regartis.com)

#### Supplier

Hranipex Ltd.  
Unit 2 Radial Park, Birmingham Business Park  
Birmingham, B37 7YN  
United Kingdom  
T +44 121 767 9180, F 0121 782 6250  
[uk-hranipex@hranipex.com](mailto:uk-hranipex@hranipex.com), [www.hranipex.co.uk](http://www.hranipex.co.uk)

### 1.4. Emergency telephone number

| Country/Area   | Organisation/Company                                                                                 | Address                                                   | Emergency number | Comment                           |
|----------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|------------------|-----------------------------------|
| United Kingdom | National Poisons Information Service<br>(Birmingham Centre)<br>City Hospital                         | Dudley Road<br>B18 7QH                                    | 0344 892 0111    | Only for healthcare professionals |
| United Kingdom | National Poisons Information Service<br>(Cardiff Centre)<br>University Hospital Llandough            | Penlan Road<br>CF64 2XX                                   | 0344 892 0111    | Only for healthcare professionals |
| United Kingdom | National Poisons Information Service<br>(Edinburgh Centre)<br>Royal Infirmary of Edinburgh           | Little France Crescent<br>EH16 4SA                        | 0344 892 0111    | Only for healthcare professionals |
| United Kingdom | Guy's & St Thomas' Poisons Unit<br>Medical Toxicology Unit, Guy's & St<br>Thomas' Hospital Trust     | Avonley Road<br>SE14 5ER                                  | +44 20 7188 7188 |                                   |
| United Kingdom | National Poisons Information Service<br>(Newcastle Centre)<br>Regional Drugs and Therapeutics Centre | 16/17 Framlington Place<br>Newcastle-upon-Tyne<br>NE2 4AB | 0344 892 0111    | Only for healthcare professionals |
| United Kingdom | National Poisons Information Service<br>(Belfast Centre)<br>Royal Victoria Hospital                  | Grosvenor Road<br>BT12 6BA                                | 0344 892 0111    | Only for healthcare professionals |

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (oral), Category 4

H302

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|                                                                |        |
|----------------------------------------------------------------|--------|
| Acute toxicity (inhalation:dust,mist) Category 3               | H331   |
| Skin corrosion/irritation, Category 2                          | H315   |
| Serious eye damage/eye irritation, Category 1                  | H318   |
| Reproductive toxicity, Category 2                              | H361fd |
| Specific target organ toxicity – Repeated exposure, Category 2 | H373   |

Full text of H- and EUH-statements: see section 16

## Adverse physicochemical, human health and environmental effects

Harmful if swallowed. Toxic if inhaled. Causes skin irritation. Causes serious eye damage. Suspected of damaging fertility. Suspected of damaging the unborn child. May cause damage to organs (kidneys, liver, blood, central nervous system) through prolonged or repeated exposure.

## 2.2. Label elements

### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Contains

: 2-butoxyethanol; ethylene glycol monobutyl ether; 2,2'-iminodiethanol; diethanolamine

Hazard statements (CLP)

: H302 - Harmful if swallowed.  
 H315 - Causes skin irritation.  
 H318 - Causes serious eye damage.  
 H331 - Toxic if inhaled.  
 H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child.  
 H373 - May cause damage to organs (kidneys, liver, blood, central nervous system) through prolonged or repeated exposure (inhalation).  
 Precautionary statements (CLP): P260 - Do not breathe vapours, aerosol.  
 P271 - Use only outdoors or in a well-ventilated area.  
 P280 - Wear protective gloves, protective clothing, eye protection, face shield.  
 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.

## 2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

| Name                                             | Product identifier                                                                                 | %    | Classification according to Regulation (EC) No. 1272/2008 [CLP]                                                                                           |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2-butoxyethanol; ethylene glycol monobutyl ether | CAS-No.: 111-76-2<br>EC-No.: 203-905-0<br>EC Index-No.: 603-014-00-0<br>REACH-no: 01-2119475108-36 | < 60 | Acute Tox. 3 (Inhalation:vapour), H331 (ATE=3 mg/l)<br>Acute Tox. 4 (Oral), H302 (ATE=1200 mg/kg bodyweight)<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319 |

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| Name                                | Product identifier                                                                                 | %      | Classification according to Regulation (EC) No. 1272/2008 [CLP]                                            |
|-------------------------------------|----------------------------------------------------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------|
| 2,2'-iminodiethanol; diethanolamine | CAS-No.: 111-42-2<br>EC-No.: 203-868-0<br>EC Index-No.: 603-071-00-1<br>REACH-no: 01-2119488930-28 | 5 – 50 | Acute Tox. 4 (Oral), H302<br>Skin Irrit. 2, H315<br>Eye Dam. 1, H318<br>Repr. 2, H361fd<br>STOT RE 2, H373 |

Full text of H- and EUH-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| First-aid measures general            | : Immediately remove contaminated clothing or footwear. Take care of your own safety. If you experience any health problems or if you are in doubt, inform your doctor and provide him / her with information from this Safety Data Sheet. Life-threatening conditions require resuscitation. In case of unconsciousness place the affected person in a stabilized position on the side, with a slightly bowed head, and take care of the passage of the airways. Heart arrest - Immediately perform an indirect heart massage.                                                                                                                                                                                                                                                                                                   |
| First-aid measures after inhalation   | : Remove person to fresh air and keep comfortable for breathing. Allow the victim to rest. Allow affected person to breathe fresh air. If you feel unwell, seek medical advice.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| First-aid measures after skin contact | : After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Be careful, the product may remain trapped under clothing, footwear or a wrist-watch. Rinse immediately with plenty of water for 15 minutes. Never clean with a solvent. Seek immediate medical advice.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| First-aid measures after eye contact  | : Immediately rinse with water for a prolonged period while holding the eyelids wide open. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| First-aid measures after ingestion    | : Rinse mouth. Give 500 ml water to drink. Do NOT induce vomiting. If vomiting occurs have person lean forward. Seek medical advice immediately and show this container or label.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Self protection of the first-aiders   | : First aid workers will be equipped with suitable personal protective equipment. Remove exposed person from the area contaminated with dust or gas, keep person at rest in a warm area, even in the absence of symptoms. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |

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

|                                     |                                                                                                                                                                       |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Symptoms/effects                    | : May cause damage to organs through prolonged or repeated exposure.                                                                                                  |
| Symptoms/effects after inhalation   | : May cause respiratory irritation. Irritates mucous membranes.                                                                                                       |
| Symptoms/effects after skin contact | : Irritation. Prolonged or repeated contact may cause skin to become dry. Exposure to this material can result in absorption through skin causing some health hazard. |
| Symptoms/effects after eye contact  | : Serious damage to eyes.                                                                                                                                             |
| Symptoms/effects after ingestion    | : Ingestion may cause nausea and vomiting. Abdominal pain.                                                                                                            |

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

Treat symptomatically. Keep under medical supervision for at least 48 hours.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

|                                |                                                                        |
|--------------------------------|------------------------------------------------------------------------|
| Suitable extinguishing media   | : Carbon dioxide. Alcohol resistant foam. Dry powder. Water fog. Sand. |
| Unsuitable extinguishing media | : Do not use a heavy water stream.                                     |

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## 5.2. Special hazards arising from the substance or mixture

- Fire hazard : The product is not flammable.
- Hazardous decomposition products in case of fire : Carbon monoxide. Carbon dioxide. Other toxic gases. Exposure to combustion or decomposition products can be harmful to your health.

## 5.3. Advice for firefighters

- Firefighting instructions : Move containers from fire area if it can be done without personal risk. Cool down the containers exposed to heat with a water spray. Evacuate the danger area. Exercise caution when fighting any chemical fire.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. Use water spray or fog for cooling exposed containers.
- Other information : Prevent fire fighting water from entering the environment. Dispose of rinse water in accordance with local and national regulations.

## SECTION 6: Accidental release measures

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

#### For non-emergency personnel

- Protective equipment : Wear recommended personal protective equipment.
- Emergency procedures : Evacuate unnecessary personnel. Avoid contact with skin and eyes. Do not breathe vapour/aerosol. Ventilate spillage area.

#### For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Protective goggles or face shield. Total impervious protective suits, gloves, and boots must be worn to prevent any contact with the product. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Do not allow the mixture to enter into sewer, water system (underground water, surface water) or soil.

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

- Methods for cleaning up : Ensure adequate ventilation. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Collect all waste in suitable and labelled containers and dispose according to local legislation. Notify authorities if product enters sewers or public waters. Rinse with plenty of water. Do not use solvents.

### 6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8. Concerning disposal elimination after cleaning, see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Do not breathe vapour/aerosol. Use personal protective equipment as required. Keep container tight closed. Keep away from open flames, hot surfaces and sources of ignition.
- Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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

- Storage conditions : Store in a dry place. Store in a well-ventilated place. Keep container closed when not in use. Keep in properly labelled containers. . Keep away from heat and direct sunlight. Store locked up.
- Incompatible products : Strong oxidizing agent. Strong acids.
- Storage temperature : 5 – 25 °C

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Packaging materials

: Stainless steel. High density polyethylene (HDPE). Unsuitable materials. Aluminium.  
Copper. Zinc.**7.3. Specific end use(s)**

No additional information available

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****National occupational exposure and biological limit values**

| <b>2-butoxyethanol; ethylene glycol monobutyl ether (111-76-2)</b> |                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EU - Indicative Occupational Exposure Limit (IOEL)</b>          |                                                                                                                                                                                                                                 |
| Local name                                                         | 2-Butoxyethanol                                                                                                                                                                                                                 |
| IOEL TWA                                                           | 98 mg/m <sup>3</sup>                                                                                                                                                                                                            |
|                                                                    | 20 ppm                                                                                                                                                                                                                          |
| IOEL STEL                                                          | 246 mg/m <sup>3</sup>                                                                                                                                                                                                           |
|                                                                    | 50 ppm                                                                                                                                                                                                                          |
| Remark                                                             | Skin                                                                                                                                                                                                                            |
| Regulatory reference                                               | COMMISSION DIRECTIVE 2000/39/EC                                                                                                                                                                                                 |
| <b>United Kingdom - Occupational Exposure Limits</b>               |                                                                                                                                                                                                                                 |
| Local name                                                         | 2-Butoxyethanol                                                                                                                                                                                                                 |
| WEL TWA (OEL TWA)                                                  | 123 mg/m <sup>3</sup>                                                                                                                                                                                                           |
|                                                                    | 25 ppm                                                                                                                                                                                                                          |
| WEL STEL (OEL STEL)                                                | 246 mg/m <sup>3</sup>                                                                                                                                                                                                           |
|                                                                    | 50 ppm                                                                                                                                                                                                                          |
| Remark                                                             | Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity), BMGV (Biological monitoring guidance values are listed in Table 2) |
| Regulatory reference                                               | EH40/2005 (Fourth edition, 2020). HSE                                                                                                                                                                                           |
| <b>United Kingdom - Biological limit values</b>                    |                                                                                                                                                                                                                                 |
| Local name                                                         | 2-Butoxyethanol                                                                                                                                                                                                                 |
| BMGV                                                               | 240 mmol/mol Creatinine Parameter: butoxyacetic acid - Medium: urine - Sampling time: Post shift                                                                                                                                |
| Regulatory reference                                               | EH40/2005 (Fourth edition, 2020). HSE                                                                                                                                                                                           |

**DNEL and PNEC**

| <b>2-butoxyethanol; ethylene glycol monobutyl ether (111-76-2)</b> |                        |
|--------------------------------------------------------------------|------------------------|
| <b>DNEL/DMEL (Workers)</b>                                         |                        |
| Acute - systemic effects, inhalation                               | 1091 mg/m <sup>3</sup> |
| Acute - local effects, inhalation                                  | 246 mg/m <sup>3</sup>  |
| Long-term - systemic effects, inhalation                           | 98 mg/m <sup>3</sup>   |
| <b>PNEC (Water)</b>                                                |                        |
| PNEC aqua (freshwater)                                             | 8.8 mg/l               |
| PNEC aqua (marine water)                                           | 0.88 mg/l              |

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**2-butoxyethanol; ethylene glycol monobutyl ether (111-76-2)**

PNEC aqua (intermittent, freshwater) 9.1 mg/l

**PNEC (Sediment)**

PNEC sediment (freshwater) 34.6 mg/kg dwt

PNEC sediment (marine water) 3.46 mg/kg dwt

**PNEC (Soil)**

PNEC soil 2.33 mg/kg dwt

**PNEC (Oral)**

PNEC oral (secondary poisoning) 20 kg/kg food

**PNEC (STP)**

PNEC sewage treatment plant 463 mg/l

**2,2'-iminodiethanol; diethanolamine (111-42-2)****DNEL/DMEL (Workers)**

Long-term - systemic effects, dermal 0.13 mg/kg bodyweight/day

Long-term - systemic effects, inhalation 0.75 mg/m<sup>3</sup>Long-term - local effects, inhalation 0.5 mg/m<sup>3</sup>**PNEC (Water)**

PNEC aqua (freshwater) 0.02 mg/l

PNEC aqua (marine water) 0.002 mg/l

PNEC aqua (intermittent, freshwater) 0.095 mg/l

**PNEC (Sediment)**

PNEC sediment (freshwater) 0.092 mg/kg dwt

PNEC sediment (marine water) 0.0092 mg/kg dwt

**PNEC (Soil)**

PNEC soil 1.63 mg/kg dwt

**PNEC (Oral)**

PNEC oral (secondary poisoning) 1.04 kg/kg food

**PNEC (STP)**

PNEC sewage treatment plant 100 mg/l

**8.2. Exposure controls****Appropriate engineering controls****Appropriate engineering controls:**

Ensure that there is a suitable ventilation system. Apply technical measures to comply with the occupational exposure limits. . Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Take precautionary measures against static discharge.

**Personal protection equipment****Personal protective equipment:**

Avoid all unnecessary exposure. Wear recommended personal protective equipment.

**Eye and face protection****Eye protection:**

Wear tight fitting safety glasses or facial screen. EN ISO 16321-1

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## Skin protection

### Skin and body protection:

Wear suitable protective clothing. Chemical resistant safety shoes. PVC apron covering the tops of the boots

### Hand protection:

Chemical resistant gloves (according to European standard ISO 374-1 or equivalent)

## Hand protection

| Type                                                               | Material             | Permeation       | Thickness (mm) | Penetration | Standard   |
|--------------------------------------------------------------------|----------------------|------------------|----------------|-------------|------------|
| Wear gloves according to EN374 resistant to the solvent(s) in use. | Nitrile rubber (NBR) | 3 (> 60 minutes) | 0,3 mm         | x           | EN ISO 374 |

## Respiratory protection

### Respiratory protection:

Half mask with filter against organic vapors. Self-contained breathing apparatus if exposure limits are exceeded or in poorly ventilated areas.

## Respiratory protection

| Device | Filter type                                                                                        | Condition                                                | Standard |
|--------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------|
| Mask   | Type A - High-boiling (>65 °C) organic compounds, Type AX - Low-boiling (<65 °C) organic compounds | In case of insufficient ventilation, accident, fire, etc | x        |

## Environmental exposure controls

### Environmental exposure controls:

Avoid release to the environment.

### Other information:

Always wash hands after handling the product. Avoid contact with skin, eyes and clothing. Do not breathe vapour/aerosol. Do not eat, drink or smoke in areas where product is used. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|                                                 |                                                       |
|-------------------------------------------------|-------------------------------------------------------|
| Physical state                                  | : Liquid                                              |
| Colour                                          | : Yellowish                                           |
| Odour                                           | : Slight. Characteristic                              |
| Odour threshold                                 | : Not available                                       |
| Melting point                                   | : Not applicable                                      |
| Freezing point                                  | : < 0 °C                                              |
| Boiling point                                   | : Not available                                       |
| Flammability                                    | : Not flammable                                       |
| It does not have oxidising properties           | : Non oxidizing.                                      |
| Lower explosion limit                           | : 1.1 vol %                                           |
| Upper explosion limit                           | : 10.6 vol % (CAS: 111-76-2)                          |
| Flash point                                     | : 111 °C; 163 °C (CAS 111-42-2); 67 °C (CAS 111-76-2) |
| Auto-ignition temperature                       | : 230 °C (CAS 111-76-2)                               |
| Decomposition temperature                       | : Not available                                       |
| pH                                              | : 10 – 11 Undiluted solution                          |
| Viscosity, kinematic                            | : Not available                                       |
| Solubility                                      | : Miscible with : Water. Insoluble in oils/fats.      |
| Partition coefficient n-octanol/water (Log Kow) | : Not available                                       |
| Vapour pressure                                 | : 0.08 kPa (CAS: 111-76-2); 10 Pa (CAS: 111-42-2)     |
| Vapour pressure at 50°C                         | : Not available                                       |
| Density                                         | : 0.985 g/cm³                                         |
| Relative density                                | : Not available                                       |
| Relative vapour density at 20°C                 | : Not available                                       |
| Particle characteristics                        | : Not applicable                                      |

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**9.2. Other information****Information with regard to physical hazard classes**

Explosion limits : 1.1 – 10.6 vol % EINECS 203-905-0

**Other safety characteristics**

VOC content : 0.53 kg/kg

Total organic carbon (TOC) : 0,32 kg/kg

**SECTION 10: Stability and reactivity****10.1. Reactivity**

The product is non-reactive under normal conditions of use, storage and transport.

**10.2. Chemical stability**

Stable under normal conditions.

**10.3. Possibility of hazardous reactions**

strong oxidants and strong acids.

**10.4. Conditions to avoid**

Heat. High temperature. Direct sunlight.

**10.5. Incompatible materials**

Oxidizing agent. Strong acids.

**10.6. Hazardous decomposition products**

Under normal conditions of storage and use, hazardous decomposition products should not be produced. On burning: release of carbon monoxide - carbon dioxide.

**SECTION 11: Toxicological information****11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

Acute toxicity (oral) : Harmful if swallowed.  
Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)  
Acute toxicity (inhalation) : Toxic if inhaled.

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|                   |                       |
|-------------------|-----------------------|
| ATE CLP (oral)    | 1231 mg/kg bodyweight |
| ATE CLP (vapours) | 5 mg/l/4h             |

**2-butoxyethanol; ethylene glycol monobutyl ether (111-76-2)**

|                       |                           |
|-----------------------|---------------------------|
| LD50 oral             | 1200 mg/kg Guinea pig     |
| LD50 dermal           | > 2000 mg/kg Guinea pig   |
| LC50 Inhalation - Rat | > 2.25 mg/l/4h Guinea pig |

**2,2'-iminodiethanol; diethanolamine (111-42-2)**

|                                   |              |
|-----------------------------------|--------------|
| LD50 oral rat                     | 1600 mg/kg   |
| LD50 dermal rabbit                | 12200 mg/kg  |
| LC50 Inhalation - Rat (Dust/Mist) | 3.35 mg/l/4h |

Skin corrosion/irritation : Causes skin irritation.  
pH: 10 – 11 Undiluted solution

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|                                   |                                                                                                                                   |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Serious eye damage/irritation     | : Causes serious eye damage.<br>pH: 10 – 11 Undiluted solution                                                                    |
| Respiratory or skin sensitisation | : Not classified (Based on available data, the classification criteria are not met)                                               |
| Germ cell mutagenicity            | : Not classified (Based on available data, the classification criteria are not met)                                               |
| Carcinogenicity                   | : Not classified (Based on available data, the classification criteria are not met)                                               |
| Reproductive toxicity             | : Suspected of damaging fertility. Suspected of damaging the unborn child.                                                        |
| STOT-single exposure              | : Not classified (Based on available data, the classification criteria are not met)                                               |
| STOT-repeated exposure            | : May cause damage to organs (kidneys, liver, blood, central nervous system) through prolonged or repeated exposure (inhalation). |

## 2,2'-iminodiethanol; diethanolamine (111-42-2)

|                            |                                                                    |
|----------------------------|--------------------------------------------------------------------|
| LOAEL (oral, rat, 90 days) | 14 mg/kg bodyweight/day                                            |
| STOT-repeated exposure     | May cause damage to organs through prolonged or repeated exposure. |

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

## 11.2. Information on other hazards

### Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

### Other information

Potential adverse human health effects and symptoms : Inhalation of solvent vapors above occupational exposure limits may result in acute inhalation poisoning, depending on concentration and exposure time.

## SECTION 12: Ecological information

### 12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified (Based on available data, the classification criteria are not met)

Hazardous to the aquatic environment, long-term (chronic) : Not classified (Based on available data, the classification criteria are not met)

## 2-butoxyethanol; ethylene glycol monobutyl ether (111-76-2)

|                                    |                                                    |
|------------------------------------|----------------------------------------------------|
| LC50 - Fish [1]                    | 1474 mg/l Oncorhynchus mykiss, OECD 203            |
| EC50 - Crustacea [1]               | 1550 mg/l Daphnia magna, OECD 202                  |
| EC50 - Other aquatic organisms [1] | > 700 mg/l microorganisms                          |
| EC50 72h - Algae [1]               | 911 mg/l Pseudokirchneriella subcapitata, OECD 201 |
| NOEC chronic fish                  | > 100 mg/l Brachydanio rerio                       |
| NOEC chronic crustacea             | 100 mg/l Daphnia magna                             |

## 2,2'-iminodiethanol; diethanolamine (111-42-2)

|                      |                                         |
|----------------------|-----------------------------------------|
| LC50 - Fish [1]      | 1460 mg/l Pimephales promelas           |
| EC50 - Crustacea [1] | 55 mg/l Daphnia magna                   |
| EC50 72h - Algae [1] | 19 mg/l Pseudokirchneriella subcapitata |
| NOEC chronic fish    | > 1 mg/l                                |

## 12.2. Persistence and degradability

### Hraniclean 07

|                               |                        |
|-------------------------------|------------------------|
| Persistence and degradability | Readily biodegradable. |
|-------------------------------|------------------------|

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## 2-butoxyethanol; ethylene glycol monobutyl ether (111-76-2)

|                               |                    |
|-------------------------------|--------------------|
| Persistence and degradability | Rapidly degradable |
|-------------------------------|--------------------|

## 2,2'-iminodiethanol; diethanolamine (111-42-2)

|                               |                    |
|-------------------------------|--------------------|
| Persistence and degradability | Rapidly degradable |
|-------------------------------|--------------------|

### 12.3. Bioaccumulative potential

#### Hraniclean 07

|                           |                           |
|---------------------------|---------------------------|
| Bioaccumulative potential | Bioaccumulation unlikely. |
|---------------------------|---------------------------|

## 2-butoxyethanol; ethylene glycol monobutyl ether (111-76-2)

|                                                 |                           |
|-------------------------------------------------|---------------------------|
| BCF - Fish [1]                                  | < 100                     |
| Partition coefficient n-octanol/water (Log Pow) | < 3                       |
| Partition coefficient n-octanol/water (Log Kow) | 0.81                      |
| Bioaccumulative potential                       | Bioaccumulation unlikely. |

## 2,2'-iminodiethanol; diethanolamine (111-42-2)

|                                                 |                                        |
|-------------------------------------------------|----------------------------------------|
| Partition coefficient n-octanol/water (Log Pow) | -2.18 @ 25°C                           |
| Partition coefficient n-octanol/water (Log Kow) | -2.46 (OECD 107; @ 25°C, pH = 6.8-7.3) |
| Bioaccumulative potential                       | Bioaccumulation unlikely.              |

### 12.4. Mobility in soil

#### Hraniclean 07

|                |                                                                                                                                                                            |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ecology - soil | Expected to be highly mobile in soil. Low potential for adsorption in soil. The substance will not evaporate into the atmosphere from the water surface. Soluble in water. |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 2-butoxyethanol; ethylene glycol monobutyl ether (111-76-2)

|                                                            |      |
|------------------------------------------------------------|------|
| Organic Carbon Normalized Adsorption Coefficient (Log Koc) | 0.45 |
|------------------------------------------------------------|------|

### 12.5. Results of PBT and vPvB assessment

#### Hraniclean 07

|                                                                                       |
|---------------------------------------------------------------------------------------|
| This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII |
|---------------------------------------------------------------------------------------|

|                                                                                        |
|----------------------------------------------------------------------------------------|
| This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |
|----------------------------------------------------------------------------------------|

### 12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties

: The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %.

### 12.7. Other adverse effects

#### Hraniclean 07

|                   |                        |
|-------------------|------------------------|
| Other information | No other effects known |
|-------------------|------------------------|

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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regional waste regulation                  | : Disposal must be done according to official regulations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Waste treatment methods                    | : Dispose of contents/container in accordance with licensed collector's sorting instructions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Sewage disposal recommendations            | : Disposal must be done according to official regulations. Do not allow into drains or water courses.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Product/Packaging disposal recommendations | : Can be disposed as a solid waste or burned in a suitable installation according to local legislation. Empty containers can be recycled after a thorough cleaning.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Ecological waste information               | : Avoid release to the environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| European List of Waste (LoW, EC 2000/532)  | : 07 01 04* - other organic solvents, washing liquids and mother liquors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| HP Code                                    | : HP5 - "Specific Target Organ Toxicity (STOT)/Aspiration Toxicity:" waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration.<br>HP6 - "Acute Toxicity:" waste which can cause acute toxic effects following oral or dermal administration, or inhalation exposure.<br>HP4 - "Irritant – skin irritation and eye damage:" waste which on application can cause skin irritation or damage to the eye.<br>HP10 - "Toxic for reproduction:" waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring. |

## SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

| ADR                                                                                                     | IMDG                                                                                                        | IATA                                                                                               | ADN                                                                                                | RID                                                                                                |
|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>14.1. UN number or ID number</b>                                                                     |                                                                                                             |                                                                                                    |                                                                                                    |                                                                                                    |
| UN 2810                                                                                                 | UN 2810                                                                                                     | UN 2810                                                                                            | UN 2810                                                                                            | UN 2810                                                                                            |
| <b>14.2. UN proper shipping name</b>                                                                    |                                                                                                             |                                                                                                    |                                                                                                    |                                                                                                    |
| TOXIC LIQUID, ORGANIC, N.O.S.                                                                           | TOXIC LIQUID, ORGANIC, N.O.S.                                                                               | Toxic liquid, organic, n.o.s.                                                                      | TOXIC LIQUID, ORGANIC, N.O.S.                                                                      | TOXIC LIQUID, ORGANIC, N.O.S.                                                                      |
| <b>Transport document description</b>                                                                   |                                                                                                             |                                                                                                    |                                                                                                    |                                                                                                    |
| UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (2-butoxyethanol; ethylene glycol monobutyl ether), 6.1, III, (E) | UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (2-butoxyethanol; ethylene glycol monobutyl ether), 6.1, III          | UN 2810 Toxic liquid, organic, n.o.s. (2-butoxyethanol; ethylene glycol monobutyl ether), 6.1, III | UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (2-butoxyethanol; ethylene glycol monobutyl ether), 6.1, III | UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (2-butoxyethanol; ethylene glycol monobutyl ether), 6.1, III |
| <b>14.3. Transport hazard class(es)</b>                                                                 |                                                                                                             |                                                                                                    |                                                                                                    |                                                                                                    |
| 6.1                                                                                                     | 6.1                                                                                                         | 6.1                                                                                                | 6.1                                                                                                | 6.1                                                                                                |
|                      |                          |                 |               |               |
| <b>14.4. Packing group</b>                                                                              |                                                                                                             |                                                                                                    |                                                                                                    |                                                                                                    |
| III                                                                                                     | III                                                                                                         | III                                                                                                | III                                                                                                | III                                                                                                |
| <b>14.5. Environmental hazards</b>                                                                      |                                                                                                             |                                                                                                    |                                                                                                    |                                                                                                    |
| Dangerous for the environment: No                                                                       | Dangerous for the environment: No<br>Marine pollutant: No<br>EmS-No. (Fire): F-A<br>EmS-No. (Spillage): S-A | Dangerous for the environment: No                                                                  | Dangerous for the environment: No                                                                  | Dangerous for the environment: No                                                                  |
| No supplementary information available                                                                  |                                                                                                             |                                                                                                    |                                                                                                    |                                                                                                    |

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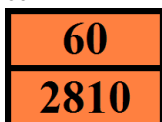
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## 14.6. Special precautions for user

### Overland transport

|                                                                         |                           |
|-------------------------------------------------------------------------|---------------------------|
| Classification code (ADR)                                               | : T1                      |
| Special provisions (ADR)                                                | : 274, 614                |
| Limited quantities (ADR)                                                | : 5I                      |
| Excepted quantities (ADR)                                               | : E1                      |
| Packing instructions (ADR)                                              | : P001, IBC03, LP01, R001 |
| Mixed packing provisions (ADR)                                          | : MP19                    |
| Portable tank and bulk container instructions (ADR)                     | : T7                      |
| Portable tank and bulk container special provisions (ADR)               | : TP1, TP28               |
| Tank code (ADR)                                                         | : L4BH                    |
| Tank special provisions (ADR)                                           | : TU15, TE19              |
| Vehicle for tank carriage                                               | : AT                      |
| Transport category (ADR)                                                | : 2                       |
| Special provisions for carriage - Packages (ADR)                        | : V12                     |
| Special provisions for carriage - Loading, unloading and handling (ADR) | : CV13, CV28              |
| Special provisions for carriage - Operation (ADR)                       | : S9                      |
| Hazard identification number (Kemler No.)                               | : 60                      |
| Orange plates                                                           | :                         |



|                               |      |
|-------------------------------|------|
| Tunnel restriction code (ADR) | : E  |
| EAC code                      | : 2X |

### Transport by sea

|                                    |                                                         |
|------------------------------------|---------------------------------------------------------|
| Special provisions (IMDG)          | : 223, 274                                              |
| Limited quantities (IMDG)          | : 5 L                                                   |
| Excepted quantities (IMDG)         | : E1                                                    |
| Packing instructions (IMDG)        | : P001, LP01                                            |
| IBC packing instructions (IMDG)    | : IBC03                                                 |
| Tank instructions (IMDG)           | : T7                                                    |
| Tank special provisions (IMDG)     | : TP1, TP28                                             |
| Stowage category (IMDG)            | : A                                                     |
| Stowage and handling (IMDG)        | : SW2                                                   |
| Properties and observations (IMDG) | : Toxic if swallowed, by skin contact or by inhalation. |

### Air transport

|                                              |                |
|----------------------------------------------|----------------|
| PCA Excepted quantities (IATA)               | : E1           |
| PCA Limited quantities (IATA)                | : Y642         |
| PCA limited quantity max net quantity (IATA) | : 2L           |
| PCA packing instructions (IATA)              | : 655          |
| PCA max net quantity (IATA)                  | : 60L          |
| CAO packing instructions (IATA)              | : 663          |
| CAO max net quantity (IATA)                  | : 220L         |
| Special provisions (IATA)                    | : A3, A4, A137 |
| ERG code (IATA)                              | : 6L           |

### Inland waterway transport

|                                   |                  |
|-----------------------------------|------------------|
| Classification code (ADN)         | : T1             |
| Special provisions (ADN)          | : 274, 614, 802  |
| Limited quantities (ADN)          | : 5 L            |
| Excepted quantities (ADN)         | : E1             |
| Carriage permitted (ADN)          | : T              |
| Equipment required (ADN)          | : PP, EP, TOX, A |
| Ventilation (ADN)                 | : VE02           |
| Number of blue cones/lights (ADN) | : 0              |

### Rail transport

|                           |      |
|---------------------------|------|
| Classification code (RID) | : T1 |
|---------------------------|------|

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|                                                                         |                           |
|-------------------------------------------------------------------------|---------------------------|
| Special provisions (RID)                                                | : 274, 614                |
| Limited quantities (RID)                                                | : 5L                      |
| Excepted quantities (RID)                                               | : E1                      |
| Packing instructions (RID)                                              | : P001, IBC03, LP01, R001 |
| Mixed packing provisions (RID)                                          | : MP19                    |
| Portable tank and bulk container instructions (RID)                     | : T7                      |
| Portable tank and bulk container special provisions (RID)               | : TP1, TP28               |
| Tank codes for RID tanks (RID)                                          | : L4BH                    |
| Special provisions for RID tanks (RID)                                  | : TU15                    |
| Transport category (RID)                                                | : 2                       |
| Special provisions for carriage – Packages (RID)                        | : W12                     |
| Special provisions for carriage - Loading, unloading and handling (RID) | : CW13, CW28, CW31        |
| Colis express (express parcels) (RID)                                   | : CE8                     |
| Hazard identification number (RID)                                      | : 60                      |

### 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU-Regulations

##### REACH Annex XVII (Restriction List)

| EU restriction list (REACH Annex XVII) |                                                                                                        |                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reference code                         | Applicable on                                                                                          | Entry title or description                                                                                                                                                                                                                                                                                        |
| 3(b)                                   | Hraniclean 07 ; 2-butoxyethanol; ethylene glycol monobutyl ether ; 2,2'-iminodiethanol; diethanolamine | Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10 |

##### REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

##### REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

##### PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

##### POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

##### Ozone Regulation (2024/590)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 2024/590 on substances that deplete the ozone layer)

##### Council Regulation (EC) for the control of dual-use items

Contains no substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items

##### VOC Directive (2004/42)

VOC content : 0.53 kg/kg

##### Explosives Precursors Regulation (EU 2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

##### Drug Precursors Regulation (EC 273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

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National regulations

United Kingdom

British National Regulations

: Directive 2008/98/EC of the European Parliament and of the Council on waste and  
repealing certain Directives, in the valid wording.  
Regulation (EC) No 1013/2006 of the European Parliament and of the Council on shipments  
of waste, in the valid wording.  
UK Waste Regulations.  
UK REACH.  
GB CLP.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

| Indication of changes |                                                                 |          |
|-----------------------|-----------------------------------------------------------------|----------|
| Section               | Changed item                                                    | Comments |
| 1.2                   | Main use category                                               | Modified |
| 1.2                   | Restrictions on use                                             | Added    |
| 1.2                   | Function or use category                                        | Added    |
| 1.2                   | Use of the substance/mixture                                    | Added    |
| 2.1                   | Adverse physicochemical, human health and environmental effects | Modified |
| 2.2                   | Precautionary statements (CLP)                                  | Modified |
| 2.2                   | Hazard statements (CLP)                                         | Modified |
| 4                     | Self protection of the first-aider                              | Added    |
| 4.1                   | First-aid measures after ingestion                              | Modified |
| 4.1                   | First-aid measures after skin contact                           | Modified |
| 4.1                   | First-aid measures general                                      | Modified |
| 4.2                   | Symptoms/effects after skin contact                             | Modified |
| 4.3                   | Other medical advice or treatment                               | Modified |
| 5.3                   | EAC code                                                        | Added    |
| 5.3                   | Firefighting instructions                                       | Added    |
| 5.3                   | Other information                                               | Modified |
| 6.3                   | Methods for cleaning up                                         | Modified |
| 6.3                   | Other information                                               | Removed  |
| 7.2                   | Packaging materials                                             | Added    |
| 7.2                   | Storage conditions                                              | Modified |
| 8.2                   | Respiratory protection                                          | Modified |
| 8.2                   | Hand protection                                                 | Modified |
| 8.2                   | Eye protection                                                  | Modified |
| 9                     | Flammability (solid, gas)                                       | Modified |
| 9                     | Other properties                                                | Added    |
| 9                     | Upper explosive limit (UEL)                                     | Modified |

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## Indication of changes

| Section | Changed item                                        | Comments |
|---------|-----------------------------------------------------|----------|
| 9       | It does not have oxidising properties               | Modified |
| 9       | Vapour pressure                                     | Modified |
| 9       | Density                                             | Modified |
| 9       | Flash point                                         | Modified |
| 9       | Auto-ignition temperature                           | Modified |
| 9       | Odour                                               | Modified |
| 9       | pH                                                  | Modified |
| 10.6    | Hazardous decomposition products                    | Modified |
| 11      | Acute toxicity (dermal) - comment                   | Modified |
| 11      | Acute toxicity (inhalation) - comment               | Modified |
| 11.1    | Potential adverse human health effects and symptoms | Added    |
| 11.1    | ATE CLP (vapours)                                   | Modified |
| 11.1    | ATE CLP (dust,mist)                                 | Removed  |
| 11.1    | ATE CLP (oral)                                      | Modified |
| 11.1    | ATE CLP (gases)                                     | Removed  |
| 12.4    | Ecology - soil                                      | Modified |
| 13.1    | Product/Packaging disposal recommendations          | Modified |
| 14.1    | UN-No. (ADN)                                        | Added    |
| 14.1    | UN-No. (ADR)                                        | Added    |
| 14.1    | UN-No. (IMDG)                                       | Added    |
| 14.1    | UN-No. (IATA)                                       | Added    |
| 14.2    | Proper Shipping Name (ADN)                          | Added    |
| 14.2    | Proper Shipping Name (ADR)                          | Added    |
| 14.3    | Danger labels (RID)                                 | Added    |
| 14.3    | Danger labels (ADR)                                 | Added    |
| 14.4    | Packing group (ADN)                                 | Added    |
| 14.4    | Packing group (IMDG)                                | Added    |
| 14.4    | Packing group (IATA)                                | Added    |
| 14.4    | Packing group (ADR)                                 | Added    |
| 14.6    | Special provisions (ADN)                            | Added    |
| 14.6    | Packing instructions (IMDG)                         | Added    |
| 14.6    | Transport category (ADR)                            | Added    |
| 14.6    | Special provisions (ADR)                            | Added    |
| 14.6    | Excepted quantities (ADR)                           | Added    |
| 14.6    | Limited quantities (ADR)                            | Added    |
| 14.6    | Tunnel restriction code (ADR)                       | Added    |
| 14.6    | Hazard identification number (Kemler No.)           | Added    |

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## Indication of changes

| Section | Changed item              | Comments |
|---------|---------------------------|----------|
| 14.6    | Classification code (ADR) | Added    |

## Abbreviations and acronyms:

|       |                                                                                                   |
|-------|---------------------------------------------------------------------------------------------------|
| ADR   | European Agreement concerning the International Carriage of Dangerous Goods by Road               |
| CLP   | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008                       |
| BCF   | Bioconcentration factor                                                                           |
| EC50  | Median effective concentration                                                                    |
| IATA  | International Air Transport Association                                                           |
| IARC  | International Agency for Research on Cancer                                                       |
| IMDG  | International Maritime Dangerous Goods                                                            |
| LC50  | Median lethal concentration                                                                       |
| LD50  | Median lethal dose                                                                                |
| NOEC  | No-Observed Effect Concentration                                                                  |
| PBT   | Persistent Bioaccumulative Toxic                                                                  |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| RID   | Regulations concerning the International Carriage of Dangerous Goods by Rail                      |
| SDS   | Safety Data Sheet                                                                                 |
| vPvB  | Very Persistent and Very Bioaccumulative                                                          |
|       | Volatile organic compounds (VOC) :                                                                |
| NOAEC | No-Observed Adverse Effect Concentration                                                          |

### Data sources

 : ECHA Guidance on the compilation of safety data sheets  
 ECHA C&L Inventory database. Supplier's safety documents.

### Training advice

: Provide SDS to employees. Follow general rules on handling chemical substances and/or mixtures.

## Full text of H- and EUH-statements:

|                                     |                                                                          |
|-------------------------------------|--------------------------------------------------------------------------|
| Acute Tox. 3<br>(Inhalation:vapour) | Acute toxicity (inhalation:vapour) Category 3                            |
| Acute Tox. 4 (Oral)                 | Acute toxicity (oral), Category 4                                        |
| Eye Dam. 1                          | Serious eye damage/eye irritation, Category 1                            |
| Eye Irrit. 2                        | Serious eye damage/eye irritation, Category 2                            |
| Repr. 2                             | Reproductive toxicity, Category 2                                        |
| Skin Irrit. 2                       | Skin corrosion/irritation, Category 2                                    |
| STOT RE 2                           | Specific target organ toxicity – Repeated exposure, Category 2           |
| H302                                | Harmful if swallowed.                                                    |
| H315                                | Causes skin irritation.                                                  |
| H318                                | Causes serious eye damage.                                               |
| H319                                | Causes serious eye irritation.                                           |
| H331                                | Toxic if inhaled.                                                        |
| H361fd                              | Suspected of damaging fertility. Suspected of damaging the unborn child. |

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| Full text of H- and EUH-statements: |                                                                                                                                 |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| H373                                | May cause damage to organs (kidneys, liver, blood, central nervous system) through prolonged or repeated exposure (inhalation). |

| Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]: |        |                    |
|---------------------------------------------------------------------------------------------------------------------------|--------|--------------------|
| Acute Tox. 4 (Oral)                                                                                                       | H302   | Calculation method |
| Acute Tox. 3<br>(Inhalation:dust,mist)                                                                                    | H331   | Calculation method |
| Skin Irrit. 2                                                                                                             | H315   | Calculation method |
| Eye Dam. 1                                                                                                                | H318   | Calculation method |
| Repr. 2                                                                                                                   | H361fd | Calculation method |
| STOT RE 2                                                                                                                 | H373   | Calculation method |

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.