SAFETY DATA SHEET
DOW BENELUX B.V.
Safety Data Sheet according to Reg. (EU) No 2015/830

Product name: CELLOSIZE™ Hydroxyethyl Cellulose EP-09 Europe
Revision Date: 26.07.2018
Version: 1.0
Date of last issue: -
Print Date: 30.07.2018

DOW BENELUX B.V. encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier
Product name: CELLOSIZE™ Hydroxyethyl Cellulose EP-09 Europe

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

1.3 Details of the supplier of the safety data sheet
COMPANY IDENTIFICATION
DOW BENELUX B.V.
HERBERT H.DOWWEG 5
HOEK
4542 NM TERNEUZEN
NETHERLANDS

Customer Information Number: (31) 115 67 2626
SDSQuestion@dow.com

1.4 EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 31-(0)115 694982
Local Emergency Contact: 00 32 3575 0330
In case of emergency, contact Belgium Poison Center: 070/245.245

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008:
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008:
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.
Supplemental information
EUH210 Safety data sheet available on request.

2.3 Other hazards
May form combustible dust concentrations in air.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures
This product is a mixture.

<table>
<thead>
<tr>
<th>CASRN / EC-No. / Index-No.</th>
<th>REACH Registration Number</th>
<th>Concentration</th>
<th>Component</th>
<th>Classification: REGULATION (EC) No 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASRN 9004-62-0 EC-No. Polymer Index-No.</td>
<td></td>
<td>&gt;= 86,0 - &lt;= 100,0 %</td>
<td>Hydroxyethyl Cellulose</td>
<td>Not classified</td>
</tr>
<tr>
<td>CASRN 127-09-3 EC-No. 204-823-8 Index-No.</td>
<td></td>
<td>&lt;= 6,5 %</td>
<td>Sodium acetate</td>
<td>Not classified</td>
</tr>
<tr>
<td>CASRN 67-63-0 EC-No. 200-661-7 Index-No. 603-117-00-0</td>
<td></td>
<td>&lt;= 3,0 %</td>
<td>Isopropanol</td>
<td>Flam. Liq. - 2 - H225 Eye Irrit. - 2 - H319 STOT SE - 3 - H336</td>
</tr>
</tbody>
</table>

If present in this product, any not classified components disclosed above for which no country specific OEL value(s) is(are) indicated under Section 8, are being disclosed as voluntarily disclosed components.
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures
General advice:
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**Skin contact:** Wash off with plenty of water.

**Eye contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**Ingestion:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

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

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

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

**Notes to physician:** Maintain adequate ventilation and oxygenation of the patient. Hemodialysis may be of benefit if substantial amounts have been ingested and the patient is showing signs of intoxication. Consider hemodialysis for patients with persistent hypotension or coma unresponsive to standard therapy (isopropanol levels >400 - 500 mg/dl). (Goldfrank, Toxicological Emergencies 7th ed., 2002; King, JAMA, 1970, 211:1855). No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

### SECTION 5: FIREFIGHTING MEASURES

#### 5.1 Extinguishing media

**Suitable extinguishing media:** Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.

**Unsuitable extinguishing media:** No data available

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

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. Carbon oxides Nitrogen oxides (NOx) Oxides of phosphorus

**Unusual Fire and Explosion Hazards:** Do not permit dust to accumulate. When suspended in air dust can pose an explosion hazard. Minimize ignition sources. If dust layers are exposed to elevated temperatures, spontaneous combustion may occur. Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, electrically bond and ground equipment and do not permit dust to accumulate. Dust can be ignited by static discharge.

#### 5.3 Advice for firefighters
**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Dust explosion hazard may result from forceful application of fire extinguishing agents.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

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**SECTION 6: ACCIDENTAL RELEASE MEASURES**

6.1 **Personal precautions, protective equipment and emergency procedures:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

6.2 **Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

6.3 **Methods and materials for containment and cleaning up:** Sweep up. Use care to minimize generation of airborne dust. Do not use water for cleanup. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

6.4 **Reference to other sections:** References to other sections, if applicable, have been provided in the previous sub-sections.

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**SECTION 7: HANDLING AND STORAGE**

7.1 **Precautions for safe handling:** Avoid contact with eyes. Wash thoroughly after handling. Good housekeeping and controlling of dusts are necessary for safe handling of product. No smoking, open flames or sources of ignition in handling and storage area. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Keep away from heat, sparks and flame. Powdered material may form explosive dust-air mixture. Keep container closed. Buildup of flammable/air mixtures is possible without adequate ventilation. Use only in well-ventilated areas. Ventilate shipping container before entering. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

7.2 **Conditions for safe storage, including any incompatibilities:** Keep in a dry place. Store indoors. Store in a closed container. Store away from sources of heat or ignition. See Section 10 for more specific information.

7.3 **Specific end use(s):** See the technical data sheet on this product for further information.
### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

<table>
<thead>
<tr>
<th>Component</th>
<th>Regulation</th>
<th>Type of listing</th>
<th>Value/Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropanol</td>
<td>ACGIH</td>
<td>TWA</td>
<td>200 ppm</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>STEL</td>
<td>400 ppm</td>
</tr>
<tr>
<td></td>
<td>BE OEL</td>
<td>TLV 8 hr</td>
<td>500 mg/m3 200 ppm</td>
</tr>
<tr>
<td></td>
<td>BE OEL</td>
<td>TLV 15 min</td>
<td>1 000 mg/m3 400 ppm</td>
</tr>
</tbody>
</table>

**Biological occupational exposure limits**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Biological specimen</th>
<th>Sampling time</th>
<th>Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropanol</td>
<td>67-63-0</td>
<td>Acetone</td>
<td>Urine</td>
<td>End of shift at end of workweek</td>
<td>40 mg/l</td>
<td>ACGIH BEI</td>
</tr>
</tbody>
</table>

**Derived No Effect Level**
Sodium acetate

**Workers**

<table>
<thead>
<tr>
<th></th>
<th>Acute systemic effects</th>
<th>Acute local effects</th>
<th>Long-term systemic effects</th>
<th>Long-term local effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dermal</td>
<td>Inhalation</td>
<td>Dermal</td>
<td>Inhalation</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>72 mg/kg bw/day</td>
<td>6347.36 mg/m3</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

**Consumers**

<table>
<thead>
<tr>
<th></th>
<th>Acute systemic effects</th>
<th>Acute local effects</th>
<th>Long-term systemic effects</th>
<th>Long-term local effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dermal</td>
<td>Inhalation</td>
<td>Oral</td>
<td>Dermal</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>n.a.</td>
<td>n.a.</td>
<td>3103.45 mg/m3</td>
<td>36 mg/kg bw/day</td>
</tr>
</tbody>
</table>

**Isopropanol**

**Workers**

<table>
<thead>
<tr>
<th></th>
<th>Acute systemic effects</th>
<th>Acute local effects</th>
<th>Long-term systemic effects</th>
<th>Long-term local effects</th>
</tr>
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<tr>
<td></td>
<td>Dermal</td>
<td>Inhalation</td>
<td>Dermal</td>
<td>Inhalation</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

**Consumers**

<table>
<thead>
<tr>
<th></th>
<th>Acute systemic effects</th>
<th>Acute local effects</th>
<th>Long-term systemic effects</th>
<th>Long-term local effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dermal</td>
<td>Inhalation</td>
<td>Oral</td>
<td>Dermal</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>
Predicted No Effect Concentration

<table>
<thead>
<tr>
<th>Compartment</th>
<th>PNEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh water</td>
<td>0,1 mg/l</td>
</tr>
<tr>
<td>Marine water</td>
<td>0,01 mg/l</td>
</tr>
<tr>
<td>Sewage treatment plant</td>
<td>0,72 g/L</td>
</tr>
<tr>
<td>Fresh water sediment</td>
<td>0,000402 mg/kg</td>
</tr>
<tr>
<td>Marine sediment</td>
<td>0,00004 mg/kg</td>
</tr>
<tr>
<td>Soil</td>
<td>0,000402 mg/kg</td>
</tr>
</tbody>
</table>

Isopropanol

<table>
<thead>
<tr>
<th>Compartment</th>
<th>PNEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh water</td>
<td>140,9 mg/l</td>
</tr>
<tr>
<td>Marine water</td>
<td>140,9 mg/l</td>
</tr>
<tr>
<td>Intermittent use/release</td>
<td>140,9 mg/l</td>
</tr>
<tr>
<td>Fresh water sediment</td>
<td>552 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Marine sediment</td>
<td>552 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Sewage treatment plant</td>
<td>2251 mg/l</td>
</tr>
<tr>
<td>Soil</td>
<td>28 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td>Oral</td>
<td>160 mg/kg</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

**Individual protection measures**

**Eye/face protection:** Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent.

**Skin protection**

**Hand protection:** Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

**Other protection:** No precautions other than clean body-covering clothing should be needed.

**Respiratory protection:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2 (meeting standard EN 14387).

**Environmental exposure controls**

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Powder</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No test data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>No test data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point (760 mmHg)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point</td>
<td>closed cup No test data available</td>
</tr>
<tr>
<td>Evaporation Rate (Butyl Acetate = 1)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

Flammability (solid, gas) May form combustible dust concentrations in air.

Lower explosion limit No test data available

Upper explosion limit No test data available

Vapor Pressure Not applicable

Relative Vapor Density (air = 1) Not applicable

Relative Density (water = 1) 1,30 - 1,40 at 20 °C Literature

Water solubility completely miscible

Partition coefficient: n-octanol/water No data available

Auto-ignition temperature > 400 °C Literature

Decomposition temperature No test data available

Kinematic Viscosity No test data available

Explosive properties No data available

Oxidizing properties No data available

9.2 Other information

Molecular weight No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity: No data available

10.2 Chemical stability: Thermally stable at typical use temperatures. Hygroscopic
10.3 Possibility of hazardous reactions: Polymerization will not occur.

10.4 Conditions to avoid: Avoid temperatures above 200°C (392°F). Exposure to elevated temperatures can cause product to decompose. Avoid static discharge. Avoid moisture.

10.5 Incompatible materials: Avoid contact with oxidizing materials.

10.6 Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Formaldehyde. Acetaldehyde.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. Swallowing may result in gastrointestinal irritation.

As product: Single dose oral LD50 has not been determined.

For the major component(s):
LD50, Rat, > 8700 mg/kg Estimated.

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:
The dermal LD50 has not been determined.

Acute inhalation toxicity
Dust may cause irritation to upper respiratory tract (nose and throat). Mist may cause irritation of upper respiratory tract (nose and throat). Excessive exposure (400 ppm) to isopropanol may cause eye, nose and throat irritation. Incoordination, confusion, hypotension, hypothermia, circulatory collapse, respiratory arrest and death may follow a longer duration or higher levels. Observations in animals include middle ear lining damage upon exposure to vapors of isopropanol. However, the relevance of this to humans is unknown

As product:
The LC50 has not been determined.

Skin corrosion/irritation
Prolonged exposure not likely to cause significant skin irritation.

Serious eye damage/eye irritation
May cause slight eye irritation. May cause pain disproportionate to the level of irritation to eye tissues.

Sensitization
For skin sensitization:
No relevant information found.

For respiratory sensitization:
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
For the minor component(s):
Isopropyl alcohol.
In animals, effects have been reported on the following organs:
Liver.
Kidney
Kidney effects have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.
Observations in animals include:
Lethargy.

**Carcinogenicity**
Similar cellulosics did not cause cancer in long-term animal studies.

**Teratogenicity**
Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**Reproductive toxicity**
In animal studies, a similar cellulosic has been shown not to interfere with reproduction.

**Mutagenicity**
Similar cellulosics were negative in both in vitro and animal genetic toxicity studies.

**Aspiration Hazard**
Based on physical properties, not likely to be an aspiration hazard.

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**SECTION 12: ECOLOGICAL INFORMATION**

Ecotoxicological information appears in this section when such data is available.

**12.1 Toxicity**

**Acute toxicity to fish**
For the major component(s):
Not expected to be acutely toxic to aquatic organisms.
For the minor component(s):
Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

**12.2 Persistence and degradability**
Biodegradability: For the major component(s): No appreciable biodegradation is expected. For the minor component(s): Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

12.3 Bioaccumulative potential
   Bioaccumulation: No data available for this product. Based on information for component(s): Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

12.4 Mobility in soil
   For the major component(s):
   Expected to be relatively immobile in soil (Koc > 5000).
   For the minor component(s):
   Potential for mobility in soil is very high (Koc between 0 and 50).

12.5 Results of PBT and vPvB assessment
   This mixture has not been assessed for persistence, bioaccumulation and toxicity (PBT).

12.6 Other adverse effects
   No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
   Any disposal practice must be in compliance with all local and national laws and regulations. Do not dump into any sewers, on the ground, or into any body of water.

   The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

SECTION 14: TRANSPORT INFORMATION

Classification for ROAD and Rail transport (ADR/RID):
14.1 UN number: Not applicable
14.2 UN proper shipping name: Not regulated for transport
14.3 Transport hazard class(es): Not applicable
14.4 Packing group: Not applicable
14.5 Environmental hazards: Not considered environmentally hazardous based on available data.
14.6 Special precautions for user: No data available.

Classification for SEA transport (IMO-IMDG):
14.1 UN number: Not applicable
14.2 UN proper shipping name: Not regulated for transport
14.3 Transport hazard class(es): Not applicable
14.4 Packing group: Not applicable
14.5 Environmental hazards
Not considered as marine pollutant based on available data.

14.6 Special precautions for user
No data available.

14.7 Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code
Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

14.1 UN number
Not applicable

14.2 UN proper shipping name
Not regulated for transport

14.3 Transport hazard class(es)
Not applicable

14.4 Packing group
Not applicable

14.5 Environmental hazards
Not applicable

14.6 Special precautions for user
No data available.

Further information:
Do not ship by air. Refer to Section 7.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15: REGULATORY INFORMATION

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

REACH Regulation (EC) No 1907/2006
This product contains only components that have been either pre-registered, registered, are exempt from registration, are regarded as registered or are not subject to registration according to Regulation (EC) No 1907/2006 (REACH). Polymers are exempted from registration under REACH. All relevant starting materials and additives have been either pre-registered, registered, or are exempt from registration to Regulation (EC) No. 1907/2006 (REACH). The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer’s/user’s responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

Listed in Regulation: Not applicable
15.2 Chemical safety assessment
Not applicable

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008
This product is not classified as dangerous according to EC criteria.

Revision
Identification Number: 167130 / A281 / Issue Date: 26.07.2018 / Version: 1.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend
<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>USA, ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>ACGIH BEI</td>
<td>ACGIH - Biological Exposure Indices (BEI)</td>
</tr>
<tr>
<td>BE OEL</td>
<td>Belgium. Occupational exposure limit values</td>
</tr>
<tr>
<td>STEL</td>
<td>Short-term exposure limit</td>
</tr>
<tr>
<td>TLV 15 min</td>
<td>Short term exposure limit</td>
</tr>
<tr>
<td>TLV 8 hr</td>
<td>Long term exposure limit</td>
</tr>
<tr>
<td>TWA</td>
<td>8-hour, time-weighted average</td>
</tr>
<tr>
<td>Eye Irr.</td>
<td>Eye irritation</td>
</tr>
<tr>
<td>Flam. Liq.</td>
<td>Flammable liquids</td>
</tr>
<tr>
<td>STOT SE</td>
<td>Specific target organ toxicity - single exposure</td>
</tr>
</tbody>
</table>

Full text of other abbreviations
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal
Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

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