Special authorisation, derogation and equivalents

Special Authorisation delivered to Monument Chemical Bvba
– B – 9130 KALLO

Submitted by the Government of Belgium.

I. Introduction

1. May 2016, the Belgian authority (Flemish Government) received a written request from Monument Chemicals bvba to evaluate if there was a possibility to transport the substance UN 1148 DIACETONE ALCOHOL in tank vessels from Monument Chemicals bvba – Ketenislaan 3 – Haven 1972 – 9130 Kallo, Belgium to LBC Rotterdam BV – Haven 4035 – Oude Maasweg 4 – 3197 KJ BOTLEK, The Netherlands. Monument Chemical mentioned that the substance could be found in part 3, table A of the annexes ADN, but not in table C.

II. Notification

2. Referring to ADN 1.5.2.1 and in accordance with paragraph 2 of article 7 of ADN, a competent authority have the right to issue a special authorization to a carrier for the international carriage in tank vessels of dangerous substances of which in tank vessels is not authorized under the ADN regulations.

3. Keeping in mind that the carriage shall take place not only on the territory of Belgium but also on the territory of a Member State (the Netherlands), the Member State was immediately informed about this request. All the necessary information about the product, transportation mode, etc. was transferred to the Netherlands.

4. August 2016, the government of the Netherlands informed the government of Belgium that had no objection and that they should allow the carriage of UN 1148 DIACETONE ALCOHOL on their territory.
5. A special authorisation was made with a validity from 01/09/2016 to 01/09/2018 and can be found in annex to this document.

6. As stated in ADN 1.5.2.2.2 the competent authority would like to inform the Administrative Committee of the existence of this special authorisation.

III. Proposal

7. The government of Belgium will propose the Administrative Committee to evaluate if the substance is to be included in the list of substances (table C) authorized of carriage in tank vessels. If positive, table A should also be adapted with a letter “T” in column 8.

Attachments

8. Please find attached:
The Special Authorisation
The Safety Data Sheet for UN1148 DIACETONE ALCOHOL
Annex I

Special authorization no.: ADN-001-2016

Pursuant to Article 5 – Royal Decree of 31 July 2009

Having regard to the Royal Decree of 31 July 2009 on the carriage of dangerous goods by inland waterways (ADN), amended by the Royal Decree of 4 July 2011 amending the regulations governing the carriage of dangerous goods by inland waterways to scientific and technical progress, the carriage of the materials mentioned in this Special Authorization by tank vessels is authorized subject to the conditions laid down therein.

Special Authorization ADN-001-2016 applies to MONUMENT CHEMICAL, Port 1972 – Ketenislaan 3, B-9130 Kallo (Kieldrecht) for the carriage in tank vessels from Belgium (Monument Chemical bvba – Ketenislaan 3 – Port 1972 – 9130 Kallo) to the Netherlands (LBC Rotterdam BV – Oude Maasweg 4 – Port 4035 – 3197 KJ Botlek) of the following product:

UN 1148 DIACETONE ALCOHOL, 3, III

This Special Authorization AND-001-2016 is valid, unless previously revoked, until 01/09/2018 inclusive.

Ostend, 01/09/2016 Head of unit

Didier Delaere, Ing.
Annex to Special Authorization ADN-002-2016

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<td>F1</td>
<td>III</td>
<td>3</td>
<td>N</td>
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The following requirements apply to the transport:

1. The transport must take place with a classified tank vessel:
   a. type N (condition of cargo tank / type of cargo tank) 3.2 / 2.2 / 2.3
   b. type C

2. The transport must take place according to the minimum requirements stated in the request.
Annex II

Safety Data Sheet for UN1148 DIACETONE ALCOHOL
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form: Substance
Trade name: Diacetone alkohol
Chemical name: 4-hydroxy-4-methylpentan-2-one, diacetone alcohol
EC index no: 603-016-00-1
EC no: 204-626-7
CAS No: 123-42-2
REACH registration No: 01-2119473975-21-0003
Type of product: Pure substance
Formula: C₆H₁₂O₂
Synonyms: Diacetone / 4-Hydroxy-4-methyl pentan-2-one / 4-Hydroxy-4-methyl-2-pentanone / 4-Hydroxy-4-methylpentanone-2 / Pentan-2-one, 4-hydroxy-4-methyl- / 2-Pentanone, 4-hydroxy-4-methyl- / 4-Hydroxy-4-methylpentan-2-one / DIACETONE ALCOHOL
Product group: Trade product
BIG no: 53314

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

1.2.1. Relevant identified uses

Industrial/Professional use spec: Industrial
Use of the substance/mixture: Solvent
Chemical intermediate

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Monument Chemical B.V.B.A.
Ketenislaan 3
B-9130 Kallo - Belgium
T +32 3 570 28 11
sds@monumentchemical.com - www.monumentchemical.com

1.4. Emergency telephone number

Emergency number: BIG 24h/24h: +32 14 58 45 45

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Flammable liquids, Category 3
H226
Serious eye damage/eye irritation, Category 2
H319
Full text of H statements: see section 16
Specific concentration limits:
(C >= 10) Eye Irrit. 2, H319

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]
Xi; R36
R10
Full text of R-phrases: see section 16
Specific concentration limits:
(C >= 1) Xi; R36
Diacetone alkohol
Safety Data Sheet

2.2. Label elements

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

Hazard pictograms (CLP):

![GHS02](image)
![GHS07](image)

Signal word (CLP): Warning

Hazard statements (CLP):
- H226 - Flammable liquid and vapour
- H319 - Causes serious eye irritation

Precautionary statements (CLP):
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- P233 - Keep container tightly closed
- P240 - Ground/bond container and receiving equipment
- P241 - Use explosion-proof electrical, lighting, ventilating equipment
- P264 - Wash hands thoroughly after handling
- P280 - Wear eye protection, protective clothing, protective gloves
- P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
- P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P337+P313 - If eye irritation persists: Get medical advice/attention
- P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO2), dry extinguishing powder, Water spray to extinguish
- P403+P235 - Store in a well-ventilated place. Keep cool
- P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

Child-resistant fastening: No

Tactile warning: No

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type: Mono-constituent

Chemical name: 4-hydroxy-4-methylpentan-2-one, diacetone alcohol

CAS No: 123-42-2

EC no: 204-626-7

EC index no: 603-016-00-1

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

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general:
- Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the SDS where possible).

First-aid measures after inhalation:
- Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service. Allow breathing of fresh air. Allow the victim to rest.

First-aid measures after skin contact:
- Rinse with water. Soap may be used. Take victim to a doctor if irritation persists. Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
First-aid measures after eye contact: Rinse cautiously with water for several minutes. Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Consult an eye specialist. Get medical advice/attention.


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


Symptoms/injuries after skin contact: Slight irritation. Dry skin.

Symptoms/injuries after eye contact: Irritation of the eye tissue. Redness of the eye tissue. Causes serious eye irritation.


Chronic symptoms: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Red skin. Dry skin.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media


Unsuitable extinguishing media: Solid water jet ineffective as extinguishing medium. Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard: DIRECT FIRE HAZARD. Flammable. Gas/vapour flammable with air within explosion limits. INDIRECT FIRE HAZARD. May be ignited by sparks. Reactions involving a fire hazard: see "Reactivity Hazard". Flammable liquid and vapour.

Explosion hazard: DIRECT EXPLOSION HAZARD. Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD. may be ignited by sparks. Reactions with explosion hazards: see "Reactivity Hazard". May form flammable/explosive vapour-air mixture.

5.3. Advice for firefighters

Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions: Cool tanks/drumas with water spray/remove them into safety. Do not move the load if exposed to heat. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting: Heat/fire exposure: compressed air/oxygen apparature. Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

6.1.1. For non-emergency personnel


6.1.2. For emergency responders

Protective equipment: Equip cleanup crew with proper protection.

Emergency procedures: Ventilate area.

6.2. Environmental precautions

Prevent spreading in sewers. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Take up liquid spill into absorbent material, e.g.: dry sand/earth/vermiculite or kieselguhr.
Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collected spillage. Store away from other materials.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Additional hazards when processed: Handle empty containers with care because residual vapours are flammable.
Precautions for safe handling: Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Use spark-/explosionproof appliances and lighting system. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Observe normal hygiene standards. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. No open flames. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools.

Hygiene measures: Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical, lighting, Ventilation equipment.
Storage conditions: Keep only in the original container in a cool, well ventilated place away from: Ignition sources, Incompatible materials. Keep container tightly closed.
Incompatible products: Strong bases. Strong acids.
Incompatible materials: Sources of ignition. Direct sunlight. Heat sources.
Prohibitions on mixed storage: KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases. metals. alcohols. amines. peroxides.
Special rules on packaging: SPECIAL REQUIREMENTS: clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Country</th>
<th>4-hydroxy-4-methylpentan-2-one, diacetone alcohol (123-42-2)</th>
<th>MAK (mg/m³)</th>
<th>MAK (ppm)</th>
<th>Limit value (mg/m³)</th>
<th>Limit value (ppm)</th>
<th>GVI (granična vrijednost izloženosti) (mg/m³)</th>
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<th>KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m³)</th>
<th>KGVI (kratkotrajna granična vrijednost izloženosti) (ppm)</th>
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### 4-hydroxy-4-methylpentan-2-one, diacetone alcohol (123-42-2)

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<td>32 ppm</td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>OEL STEL (mg/m³)</td>
<td>250 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>OEL STEL (ppm)</td>
<td>53 ppm</td>
<td></td>
</tr>
<tr>
<td>Slovenia</td>
<td>OEL TWA (mg/m³)</td>
<td>240 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Slovenia</td>
<td>OEL TWA (ppm)</td>
<td>50 ppm</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>Local name</td>
<td>Diacetona alcohol</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>VLA-ED (mg/m³)</td>
<td>241 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>VLA-ED (ppm)</td>
<td>50 ppm</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>nivågränsvärde (NVG) (mg/m³)</td>
<td>120 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>nivågränsvärde (NVG) (ppm)</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>kortidsvärde (KTV) (mg/m³)</td>
<td>240 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>kortidsvärde (KTV) (ppm)</td>
<td>50 ppm</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>WEL TWA (mg/m³)</td>
<td>241 mg/m³</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>WEL TWA (ppm)</td>
<td>50 ppm</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>WEL STEL (mg/m³)</td>
<td>362 mg/m³</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>WEL STEL (ppm)</td>
<td>75 ppm</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>Grenseverdi (AN) (mg/m³)</td>
<td>120 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>Grenseverdi (AN) (ppm)</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>Grenseverdi (Kortidsverdi) (mg/m³)</td>
<td>120 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>Grenseverdi (Kortidsverdi) (ppm)</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>VME (mg/m³)</td>
<td>96 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>VME (ppm)</td>
<td>20 ppm</td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>VLE (mg/m³)</td>
<td>192 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td>VLE (ppm)</td>
<td>40 ppm</td>
<td></td>
</tr>
</tbody>
</table>
8.2. Exposure controls

**Personal protective equipment**
- Avoid all unnecessary exposure.

**Materials for protective clothing**
- GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: butyl rubber. neoprene. polyethylene/ethylenevinylalcohol. GIVE LESS RESISTANCE: PVA. GIVE POOR RESISTANCE: natural rubber. nitrile rubber. PVC. viton

**Hand protection**
- Gloves. Wear protective gloves

**Eye protection**
- Safety glasses. Chemical goggles or safety glasses

**Skin and body protection**
- Protective clothing

**Respiratory protection**
- Wear gas mask with filter type A if conc. in air > exposure limit. Self-contained breathing apparatus if conc. in air > 0.5 vol %. Wear appropriate mask

**Other information**
- Do not eat, drink or smoke during use.

**SECTION 9: Physical and chemical properties**

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

**Physical state**
- Liquid

**Appearance**
- Colorless liquid. Turns yellow on aging.

**Molecular mass**
- 116.16 g/mol
Diacetone alkohol
Safety Data Sheet

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Colourless. Yellow.</td>
</tr>
<tr>
<td>Odour</td>
<td>pleasant. Sweet.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>0.3 - 1 ppm</td>
</tr>
<tr>
<td></td>
<td>1.5 - 5.7 mg/m³</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>-44 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>168 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>50 °C</td>
</tr>
<tr>
<td>Critical temperature</td>
<td>334 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>643 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>1.29 hPa (at 20 °C)</td>
</tr>
<tr>
<td>Vapour pressure at 50 °C</td>
<td>8 hPa (50 °C)</td>
</tr>
<tr>
<td>Critical pressure</td>
<td>36468 hPa</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>4.0</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.94</td>
</tr>
<tr>
<td>Relative density of saturated gas/air mixture</td>
<td>1.0</td>
</tr>
<tr>
<td>Density</td>
<td>939 kg/m³</td>
</tr>
<tr>
<td>Log Pow</td>
<td>1.9 (Conclusion by analogy; Equivalent or similar to OECD 117)</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>0.00001 Pa.s (20 °C)</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>1.8 - 6.9 vol % 68 - 393 g/m³</td>
</tr>
</tbody>
</table>

9.2. Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific conductivity</td>
<td>16 µS/m</td>
</tr>
<tr>
<td>Saturation concentration</td>
<td>5.7 g/m³</td>
</tr>
<tr>
<td>VOC content</td>
<td>100 %</td>
</tr>
<tr>
<td>Other properties</td>
<td>Gas/vapour heavier than air at 20°C. Slightly volatile. Substance has neutral reaction.</td>
</tr>
</tbody>
</table>

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts on exposure to temperature rise with (some) acids: release of highly flammable gases/vapours. Decomposes on exposure to temperature rise: release of highly flammable gases/vapours (acetone). Upon combustion: CO and CO2 are formed. Violent exothermic reaction with (strong) oxidizers. Decomposes slowly at room temperature: release of highly flammable gases/vapours (acetone). This reaction is accelerated on exposure to (strong) acids/bases.

10.2. Chemical stability

Stable under normal conditions. Flammable liquid and vapour. May form flammable/explosive vapour-air mixture.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid


10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified

4-hydroxy-4-methylpentan-2-one, diacetone alcohol (123-42-2)

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>2520 mg/kg</td>
<td>(Rat; Equivalent or similar to OECD 401; Experimental value; 3002 mg/kg bodyweight; Rat)</td>
</tr>
<tr>
<td>LD50 dermal rat</td>
<td>&gt; 1875 mg/kg bodyweight</td>
<td>(Rat; Experimental value; Equivalent or similar to OECD 402)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>13500 mg/kg</td>
<td>(Rabbit; Experimental value; Equivalent or similar to OECD 404; 13750 mg/kg bodyweight; Rabbit)</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Not classified

Serious eye damage/irritation: Causes serious eye irritation.

Respiratory or skin sensitisation: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified

Reproductive toxicity: Not classified

Specific target organ toxicity (single exposure): Not classified

Specific target organ toxicity (repeated exposure): Not classified

Aspiration hazard: Not classified

Viscosity, kinematic: 0.01064963 mm²/s

Potential adverse human health effects and symptoms: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general: Classification concerning the environment: not applicable.


Ecology - water: Ground water pollutant. Slightly harmful to fishes (LC50(96h) >100 mg/l). Not harmful to invertebrates (Daphnia) (EC50 (48h) > 1000 mg/l). Not harmful to algae (EC50 (72h) >1000 mg/l). Slightly harmful to bacteria.

12.2. Persistence and degradability

4-hydroxy-4-methylpentan-2-one, diacetone alcohol (123-42-2)

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>0.07 g O₂/g substance</td>
<td></td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>2.11 g O₂/g substance</td>
<td></td>
</tr>
<tr>
<td>ThOD</td>
<td>2.21 g O₂/g substance</td>
<td></td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>0.03</td>
<td></td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

4-hydroxy-4-methylpentan-2-one, diacetone alcohol (123-42-2)

Log Pow: 1.9 (Conclusion by analogy; Equivalent or similar to OECD 117)

Bioaccumulative potential: Low potential for bioaccumulation (Log Kow < 4). Not established.

12.4. Mobility in soil

No additional information available
Diacetone alkohol
Safety Data Sheet

12.5. Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>4-hydroxy-4-methylpentan-2-one, diacetone alcohol (123-42-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results of PBT assessment</td>
</tr>
</tbody>
</table>

12.6. Other adverse effects

Additional information : Avoid release to the environment

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Remove to an authorized waste incinerator for solvents with energy recovery. Do not discharge into drains or the environment. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Additional information : LWCA (the Netherlands): KGA category 03. Hazardous waste according to Directive 2008/98/EC. Handle empty containers with care because residual vapours are flammable.

Ecology - waste materials : Avoid release to the environment.

European List of Waste (LoW) code : 07 01 04* - other organic solvents, washing liquids and mother liquors

SECTION 14: Transport information

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

14.1. UN number

| UN-No. (ADR) | 1148 |
| UN-No. (IMDG) | 1148 |
| UN-No. (IATA) | 1148 |
| UN-No. (ADN) | 1148 |
| UN-No. (RID) | 1148 |

14.2. UN proper shipping name

| Proper Shipping Name (ADR) | diacetone alcohol |
| Proper Shipping Name (IMDG) | diacetone alcohol |
| Proper Shipping Name (IATA) | diacetone alcohol |
| Proper Shipping Name (ADN) | DIACETONE ALCOHOL |
| Proper Shipping Name (RID) | diacetone alcohol |
| Transport document description (ADR) | UN 1148 diacetone alcohol, 3, III, (D/E) |
| Transport document description (IMDG) | UN 1148 diacetone alcohol, 3, III |

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 3
Danger labels (ADR) : 3

IMDG

Transport hazard class(es) (IMDG) : 3
Danger labels (IMDG) : 3
Diacetone alkohol
Safety Data Sheet

IATA
Transport hazard class(es) (IATA) : 3
Hazard labels (IATA) : 3

ADN
Transport hazard class(es) (ADN) : 3
Danger labels (ADN) : 3

RID
Transport hazard class(es) (RID) : 3
Danger labels (RID) : 3

14.4. Packing group
Packing group (ADR) : III
Packing group (IMDG) : III
Packing group (IATA) : III
Packing group (ADN) : III
Packing group (RID) : III

14.5. Environmental hazards
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user
- Overland transport
Transport regulations (ADR) : Subject
Classification code (ADR) : F1
Limited quantities (ADR) : 5l
Hazard identification number (Kemler No.) : 30
Orange plates :
Tunnel restriction code (ADR) : D/E

- Transport by sea
Transport regulations (IMDG) : Subject
Special provisions (IMDG) : 223

- Air transport
Transport regulations (IATA) : Subject to the provisions
PCA limited quantity max net quantity (IATA) : 10L
Diacetone alkohol
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CAO max net quantity (IATA) : 220L
Special provisions (IATA) : A3

- Inland waterway transport
Classification code (ADN) : F1
Limited quantities (ADN) : 5 L
Excepted quantities (ADN) : E1
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01
Number of blue cones/lights (ADN) : 0

- Rail transport
Transport regulations (RID) : Subject
Classification code (RID) : F1
Limited quantities (RID) : 5L
Hazard identification number (RID) : 30

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations
The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

3. Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008
4-hydroxy-4-methylpentan-2-one, diacetone alcohol

3.a. 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 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F
4-hydroxy-4-methylpentan-2-one, diacetone alcohol

3.b. 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
4-hydroxy-4-methylpentan-2-one, diacetone alcohol

40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.
4-hydroxy-4-methylpentan-2-one, diacetone alcohol

Diacetone alkohol is not on the REACH Candidate List
Diacetone alkohol is not on the REACH Annex XIV List

VOC content : 100 %

15.1.2. National regulations
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian DSL (Domestic Substances List)
Listed on IECS (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican national Inventory of Chemical Substances)
Listed on Turkish inventory of chemical

Germany
VwVwS Annex reference : Water hazard class (WGK) 1, low hazard to waters
Diacetone alkohol
Safety Data Sheet

WGK remark: Classification water polluting in compliance with Verwaltungsverordnung wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV: Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
Waterbezwaarlijkheid: 11 - Weinig schadelijk voor in het water levende organismen
SZW-list van kankerverwekkende stoffen: The substance is not listed
SZW-list van mutagene stoffen: The substance is not listed
NIEZ-limitatieve list van voor de voortplanting giftige stoffen – Borstvoeding: The substance is not listed
NIEZ-limitatieve list van voor de voortplanting giftige stoffen – Vruchtbaarheid: The substance is not listed
NIEZ-limitatieve list van voor de voortplanting giftige stoffen – Ontwikkeling: The substance is not listed

Denmark
Class for fire hazard: Class II-1
Store unit: 5 liter
Classification remarks: R10 <H226;H319>; Emergency management guidelines for the storage of flammable liquids must be followed
Recommendations Danish Regulation: Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment
A chemical safety assessment has been carried out

SECTION 16: Other information


Other information: None.

Full text of R-, H- and EUH-statements:

| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Flamm. Liq. 3 | Flammable liquids, Category 3 |
| H226 | Flammable liquid and vapour |
| H319 | Causes serious eye irritation |
| R10 | Flammable |
| R36 | Irritating to eyes |
| Xi | Irritant |

SDS EU (REACH Annex II)

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