

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

English

18 August 2016

Joint Meeting of Experts on the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) (ADN Safety Committee)

Twenty-ninth session

Geneva, 22 - 26 August 2016

Item 3 (b) of the provisional agenda

Implementation of the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN):

Special authorizations, derogations and equivalents

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

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
UN-number or substance identification No.	Name and description	Class	Classification code	Packing Group	Dangers	Type of tank vessel	Cargo tank design	Cargo tank type	Cargo tank equipment	Opening pressure of the high velocity vent valve in kPa	Maximum degree of filling in %	Relative density at 20°C	Type of sampling device	Pump room below deck permitted	Temperature class	Explosion group	Anti-explosion protection required	Equipment required	Number of blue cones/blue lights	Additional requirements / Remarks
1148	DIACETONE ALCOHOL	3	F1	III	3	N	3	2	-	-	97%	0.94	3	Yes	T1	IIa	Yes	PP,EX, A	0	-

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 For professional use only
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

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS02

GHS07

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 alkohol

CAS No :

123-42-2

EC no :

204-626-7

EC index no :

603-016-00-1

Name	Product identifier	%
4-hydroxy-4-methylpentan-2-one, diacetone alkohol	(CAS No) 123-42-2 (EC no) 204-626-7 (EC index no) 603-016-00-1 (REACH-no) 01-2119473975-21-0003	>= 99

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 :

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. 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.

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- 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.
- First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

- Symptoms/injuries after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Central nervous system depression. Nausea. Headache. Coughing. Dry/sore throat. Narcosis. Disturbances of consciousness.
- 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.
- Symptoms/injuries after ingestion : Vomiting. Abdominal pain.
- 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

- Suitable extinguishing media : Water spray. Polyvalent foam. Alcohol-resistant foam. Polymer foam. BC powder. Carbon dioxide. Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- 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/drums 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 apparatus. 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

- Protective equipment : Gloves. Safety glasses. Protective clothing. See "Material-Handling" to select protective clothing.
- Emergency procedures : Mark the danger area. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Wash contaminated clothes. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation. Evacuate unnecessary 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

- For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain. Heating: dilute combustible gas/vapour with water curtain.

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

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. Wash clothing and equipment after handling. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect 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.

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.

Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases. metals. alcohols. amines. peroxides.

Storage area : Store in a cool area. Keep out of direct sunlight. Store in a dry area. Ventilation at floor level. Fireproof storeroom. Provide for a tub to collect spills. Limited time of storage. Meet the legal requirements.

Special rules on packaging : SPECIAL REQUIREMENTS: clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials : SUITABLE MATERIAL: steel. stainless steel. aluminium. iron. glass. MATERIAL TO AVOID: copper. zinc. bronze. lead.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

4-hydroxy-4-methylpentan-2-one, diacetone alcohol (123-42-2)		
Austria	MAK (mg/m ³)	240 mg/m ³
Austria	MAK (ppm)	50 ppm
Belgium	Limit value (mg/m ³)	241 mg/m ³
Belgium	Limit value (ppm)	50 ppm
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	241 mg/m ³
Croatia	GVI (granična vrijednost izloženosti) (ppm)	50 ppm
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (mg/m ³)	362 mg/m ³
Croatia	KGVI (kratkotrajna granična vrijednost izloženosti) (ppm)	75 ppm
Czech Republic	Expoziční limity (PEL) (mg/m ³)	200 mg/m ³
Denmark	Grænseværdie (langvarig) (mg/m ³)	240 mg/m ³
Denmark	Grænseværdie (langvarig) (ppm)	50 ppm
Estonia	OEL TWA (mg/m ³)	120 mg/m ³

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4-hydroxy-4-methylpentan-2-one, diacetone alcohol (123-42-2)		
Estonia	OEL TWA (ppm)	25 ppm
Estonia	OEL STEL (mg/m ³)	240 mg/m ³
Estonia	OEL STEL (ppm)	50 ppm
Finland	HTP-arvo (8h) (mg/m ³)	240 mg/m ³
Finland	HTP-arvo (8h) (ppm)	50 ppm
Finland	HTP-arvo (15 min)	360 mg/m ³
Finland	HTP-arvo (15 min) (ppm)	75 ppm
France	VME (mg/m ³)	240 mg/m ³
France	VME (ppm)	50 ppm
Germany	Local name	4-Hydroxy-4-methyl-pentan-2-on
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	96 mg/m ³
Germany	TRGS 900 Occupational exposure limit value (ppm)	20 ppm
Germany	Remark (TRGS 900)	DFG,H
Greece	OEL TWA (mg/m ³)	240 mg/m ³
Greece	OEL TWA (ppm)	50 ppm
Greece	OEL STEL (mg/m ³)	360 mg/m ³
Greece	OEL STEL (ppm)	75 ppm
Ireland	OEL (8 hours ref) (mg/m ³)	240 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	50 ppm
Ireland	OEL (15 min ref) (mg/m ³)	360 mg/m ³
Ireland	OEL (15 min ref) (ppm)	75 ppm
Lithuania	IPRV (mg/m ³)	120 mg/m ³
Lithuania	IPRV (ppm)	25 ppm
Lithuania	TPRV (mg/m ³)	240 mg/m ³
Lithuania	TPRV (ppm)	50 ppm
Poland	NDS (mg/m ³)	240 mg/m ³
Portugal	OEL TWA (ppm)	50 ppm
Romania	OEL TWA (mg/m ³)	150 mg/m ³
Romania	OEL TWA (ppm)	32 ppm
Romania	OEL STEL (mg/m ³)	250 mg/m ³
Romania	OEL STEL (ppm)	53 ppm
Slovenia	OEL TWA (mg/m ³)	240 mg/m ³
Slovenia	OEL TWA (ppm)	50 ppm
Spain	Local name	Diacetona alcohol
Spain	VLA-ED (mg/m ³)	241 mg/m ³
Spain	VLA-ED (ppm)	50 ppm
Sweden	nivågränsvärde (NVG) (mg/m ³)	120 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	25 ppm
Sweden	kortidsvärde (KTV) (mg/m ³)	240 mg/m ³
Sweden	kortidsvärde (KTV) (ppm)	50 ppm
United Kingdom	WEL TWA (mg/m ³)	241 mg/m ³
United Kingdom	WEL TWA (ppm)	50 ppm
United Kingdom	WEL STEL (mg/m ³)	362 mg/m ³
United Kingdom	WEL STEL (ppm)	75 ppm
Norway	Grenseverdier (AN) (mg/m ³)	120 mg/m ³
Norway	Grenseverdier (AN) (ppm)	25 ppm
Norway	Grenseverdier (Korttidsverdi) (mg/m ³)	120 mg/m ³
Norway	Grenseverdier (Korttidsverdi) (ppm)	25 ppm
Switzerland	VME (mg/m ³)	96 mg/m ³
Switzerland	VME (ppm)	20 ppm
Switzerland	VLE (mg/m ³)	192 mg/m ³
Switzerland	VLE (ppm)	40 ppm

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4-hydroxy-4-methylpentan-2-one, diacetone alcohol (123-42-2)		
Australia	Local name	Diacetone alkohol
Australia	TWA (mg/m ³)	238 mg/m ³
Australia	TWA (ppm)	50 ppm
Canada (Quebec)	VEMP (mg/m ³)	238 mg/m ³
Canada (Quebec)	VEMP (ppm)	50 ppm
USA - ACGIH	Local name	Diacetone alkohol
USA - ACGIH	ACGIH TWA (ppm)	50 ppm
USA - ACGIH	Remark (ACGIH)	URT & eye irr
USA - IDLH	US IDLH (ppm)	1800 ppm (10% LEL)
USA - NIOSH	NIOSH REL (TWA) (mg/m ³)	240 mg/m ³
USA - NIOSH	NIOSH REL (TWA) (ppm)	50 ppm
USA - OSHA	Local name	(4-Hydroxy-4-methyl-2-pentanone)
USA - OSHA	OSHA PEL (TWA) (mg/m ³)	240 mg/m ³
USA - OSHA	OSHA PEL (TWA) (ppm)	50 ppm

4-hydroxy-4-methylpentan-2-one, diacetone alcohol (123-42-2)	
DNEL/DMEL (Workers)	
Acute - local effects, inhalation	240 mg/m ³
Long-term - systemic effects, dermal	9.4 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	66.4 mg/m ³
Long-term - local effects, inhalation	66.4 mg/m ³
DNEL/DMEL (General population)	
Acute - local effects, inhalation	120 mg/m ³
Long-term - systemic effects, oral	3.4 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	11.8 mg/m ³
Long-term - systemic effects, dermal	3.4 mg/kg bodyweight/day
Long-term - local effects, inhalation	11.8 mg/m ³
PNEC (Water)	
PNEC aqua (freshwater)	2 mg/l
PNEC aqua (marine water)	0.2 mg/l
PNEC aqua (intermittent, freshwater)	1 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	9.06 mg/kg dwt
PNEC sediment (marine water)	0.91 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.63 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	82 mg/l

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

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

Colour	: Colourless. Yellow.
Odour	: pleasant. Sweet.
Odour threshold	: 0.3 - 1 ppm 1.5 - 5.7 mg/m ³
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: -44 °C
Freezing point	: No data available
Boiling point	: 168 °C
Flash point	: 50 °C
Critical temperature	: 334 °C
Auto-ignition temperature	: 643 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: 1.29 hPa (at 20 °C)
Vapour pressure at 50 °C	: 8 hPa (50 °C)
Critical pressure	: 36468 hPa
Relative vapour density at 20 °C	: 4.0
Relative density	: 0.94
Relative density of saturated gas/air mixture	: 1.0
Density	: 939 kg/m ³
Solubility	: Soluble in water. Soluble in organic solvents. Soluble in ethanol. Soluble in ether. Soluble in chloroform. Water: Complete Ethanol: Complete Ether: Complete
Log Pow	: 1.9 (Conclusion by analogy; Equivalent or similar to OECD 117)
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 0.00001 Pa.s (20 °C)
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 1.8 - 6.9 vol % 68 - 393 g/m ³

9.2. Other information

Specific conductivity	: 16 µS/m
Saturation concentration	: 5.7 g/m ³
VOC content	: 100 %
Other properties	: Gas/vapour heavier than air at 20°C. Slightly volatile. Substance has neutral reaction.

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

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

4-hydroxy-4-methylpentan-2-one, diacetone alkohol (123-42-2)	
LD50 oral rat	2520 mg/kg (Rat; Equivalent or similar to OECD 401; Experimental value; 3002 mg/kg bodyweight; Rat)
LD50 dermal rat	> 1875 mg/kg bodyweight (Rat; Experimental value; Equivalent or similar to OECD 402)
LD50 dermal rabbit	13500 mg/kg (Rabbit; Experimental value; Equivalent or similar to OECD 404; 13750 mg/kg bodyweight; Rabbit)

Skin corrosion/irritation : Not classified
Based on available data, the classification criteria are not met

Serious eye damage/irritation : Causes serious eye irritation.

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 : Not classified
Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure) : Not classified
Based on available data, the classification criteria are not met

Specific target organ toxicity (repeated exposure) : Not classified
Based on available data, the classification criteria are not met

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

4-hydroxy-4-methylpentan-2-one, diacetone alkohol (123-42-2)	
Viscosity, kinematic	0.01064963 mm ² /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 - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 842/2006). TA-Luft Klasse 5.2.5.

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 alkohol (123-42-2)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available. Not established.
Biochemical oxygen demand (BOD)	0.07 g O ₂ /g substance
Chemical oxygen demand (COD)	2.11 g O ₂ /g substance
ThOD	2.21 g O ₂ /g substance
BOD (% of ThOD)	0.03

12.3. Bioaccumulative potential

4-hydroxy-4-methylpentan-2-one, diacetone alkohol (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

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12.5. Results of PBT and vPvB assessment

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

Results of PBT assessment	The product does not meet the PBT and vPvB classification criteria
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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 alkohol
Proper Shipping Name (IMDG) : diacetone alkohol
Proper Shipping Name (IATA) : diacetone alkohol
Proper Shipping Name (ADN) : DIACETONE ALCOHOL
Proper Shipping Name (RID) : diacetone alkohol
Transport document description (ADR) : UN 1148 diacetone alkohol, 3, III, (D/E)
Transport document description (IMDG) : UN 1148 diacetone alkohol, 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



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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

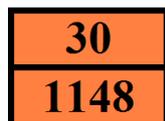
Transport regulations (ADR) : Subject

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

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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 IECSC (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

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010

WGK remark : Classification water polluting in compliance with Verwaltungsvorschrift 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-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst 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

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

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

Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. 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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