DAA

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 11/22/2022 Revision date: 11/22/2022 Supersedes version of: 11/25/2019 Version: 1.0

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

1.1. Product identifier

Product form	:	Substance
Trade name	:	DAA
Chemical name	:	4-hydroxy-4-methylpentan-2-one; diacetone alcohol
IUPAC name	:	4-hydroxy-4-methylpentan-2-one
EC Index-No.	:	603-016-00-1
EC-No.	:	204-626-7
CAS-No.	:	123-42-2
REACH registration No	:	01-2119473975-21
Product code	:	ER10150010
Type of product	:	Pure substance
Formula	:	C6H12O2
Synonyms	:	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 / 4-Hydroxy-4-methyl pentan-2-one alcohol / 4-Hydroxy-4-methyl-pentane-2-on / Diacetone
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

Manufacturer
Monument Chemical
16717 Jacintoport Blvd.
US– 77015 Houston, TX
USA
T 832-376-2000
sds@monumentchemical.com - www.monumentchemical.com

1.4. Emergency telephone number

Emergency number	:	24 HR CHEMTREC: 1-800-424-9300 (International +1 703-741-5970); 24 HR Emergency Assistance: 1-832-376-2026

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Serious eye damage/eye irritation, Category 2	H319
Reproductive toxicity, Category 2	H361d
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335

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

(10 ≤C < 100)	Eye Irrit. 2, H319

Adverse physicochemical, human health and environmental effects

Suspected of damaging fertility or the unborn child. May cause respiratory irritation. Causes serious eye irritation.

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS07 GHS08

Signal word (CLP) : Warning

Hazard statements (CLP) : H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.
H361d - Suspected of damaging the unborn child.

Precautionary statements (CLP) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
P312 - Call a POISON CENTRE or doctor if you feel unwell.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

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

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
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 REACH-no: 01-2119473975-21	≥ 99	Eye Irrit. 2, H319 Repr. 2, H361d STOT SE 3, H335

Specific concentration limits:		
Name	**Product identifier**	**Specific concentration limits**
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 REACH-no: 01-2119473975-21	(10 ≤C < 100) Eye Irrit. 2, H319

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

3.2. Mixtures

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). IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service. Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. Call a poison center or a doctor if you feel unwell.

First-aid measures after skin contact : Rinse with water. Soap may be used. Take victim to a doctor if irritation persists. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water.

First-aid measures after eye contact : Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists. If eye irritation persists: Consult an eye specialist. Get medical advice/attention. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: 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.html). 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. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Central nervous system depression. Nausea. Headache. Coughing. Dry/sore throat. Narcosis. Disturbances of consciousness. May cause respiratory irritation.

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

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

Symptoms/effects after ingestion : Vomiting. Abdominal pain.

Chronic symptoms : No effects known.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

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".

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".

Hazardous decomposition products in case of fire : Upon combustion: CO and CO2 are formed.

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 the environment.

Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus. Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Gloves (EN 374). Safety glasses (EN 166). Protective clothing (EN 14605 or EN 13034).

Emergency procedures : Ventilate spillage area. 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. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment. 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 product, collect/pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain. Heating: dilute combustible gas/vapour with water curtain.

Methods for cleaning up	:	Take up liquid spill into absorbent material. 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. Notify authorities if product enters sewers or public waters.
Other information	:	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

See Section 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.
Hygiene measures	:	Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	:	Keep only in the original container in a cool, well ventilated place away from : Heat sources, Ignition sources, Incompatible materials. Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Incompatible products	:	Strong bases. Strong acids.
Incompatible materials	:	Sources of ignition. Direct sunlight.
Heat and ignition sources	:	KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
Information on mixed storage	:	KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases. metals. alcohols. amines. peroxides.
Storage area	:	Meet the legal requirements. Store in a cool area. Store in a dry area. Keep container in a well-ventilated place. Fireproof storeroom. Provide for a tub to collect spills. Provide the tank with earthing. Limited time of storage.
Special rules on packaging	:	SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	:	SUITABLE MATERIAL: steel. stainless steel. carbon steel. aluminium. iron. glass. MATERIAL TO AVOID: copper. zinc. bronze. lead. plastics.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (123-42-2)	
Austria - Occupational Exposure Limits	
MAK (OEL TWA)	240 mg/m³
MAK (OEL TWA) [ppm]	50 ppm
OEL chemical category	Skin notation
Belgium - Occupational Exposure Limits	
OEL TWA	241 mg/m³
OEL TWA [ppm]	50 ppm
Croatia - Occupational Exposure Limits	
GVI (OEL TWA) [1]	241 mg/m³
GVI (OEL TWA) [2]	50 ppm
KGVI (OEL STEL)	362 mg/m³
KGVI (OEL STEL) [ppm]	75 ppm
Czech Republic - Occupational Exposure Limits	
PEL (OEL TWA)	200 mg/m³
Denmark - Occupational Exposure Limits	
OEL TWA [1]	240 mg/m³
OEL TWA [2]	50 ppm
Estonia - Occupational Exposure Limits	
OEL TWA	120 mg/m³
OEL TWA [ppm]	25 ppm
OEL STEL	240 mg/m³
OEL STEL [ppm]	50 ppm
Finland - Occupational Exposure Limits	
HTP (OEL TWA) [1]	240 mg/m³
HTP (OEL TWA) [2]	50 ppm
HTP (OEL STEL)	360 mg/m³
HTP (OEL STEL) [ppm]	75 ppm
France - Occupational Exposure Limits	
VME (OEL TWA)	240 mg/m³
VME (OEL TWA) [ppm]	50 ppm
Germany - Occupational Exposure Limits (TRGS 900)	
Chemical category	Skin notation
Greece - Occupational Exposure Limits	
OEL TWA	240 mg/m³
OEL TWA [ppm]	50 ppm
OEL STEL	360 mg/m³
OEL STEL [ppm]	75 ppm
Ireland - Occupational Exposure Limits	
OEL TWA [1]	240 mg/m³

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (123-42-2)	
OEL TWA [2]	50 ppm
OEL STEL	720 mg/m³ (calculated)
OEL STEL [ppm]	150 ppm (calculated)
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	120 mg/m³
IPRV (OEL TWA) [ppm]	25 ppm
TPRV (OEL STEL)	240 mg/m³
TPRV (OEL STEL) [ppm]	50 ppm
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	240 mg/m³
Portugal - Occupational Exposure Limits	
OEL TWA [ppm]	50 ppm
Romania - Occupational Exposure Limits	
OEL TWA	150 mg/m³
OEL TWA [ppm]	32 ppm
OEL STEL	250 mg/m³
OEL STEL [ppm]	53 ppm
Slovenia - Occupational Exposure Limits	
OEL TWA	96 mg/m³
OEL TWA [ppm]	20 ppm
OEL STEL	192 mg/m³
OEL STEL [ppm]	40 ppm
OEL chemical category	Potential for cutaneous absorption
Spain - Occupational Exposure Limits	
Local name	Diacetona alcohol
VLA-ED (OEL TWA) [1]	241 mg/m³
VLA-ED (OEL TWA) [2]	50 ppm
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2022. INSHT
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	120 mg/m³
NGV (OEL TWA) [ppm]	25 ppm
KTV (OEL STEL)	240 mg/m³
KTV (OEL STEL) [ppm]	50 ppm
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	241 mg/m³
WEL TWA (OEL TWA) [2]	50 ppm
WEL STEL (OEL STEL)	362 mg/m³
WEL STEL (OEL STEL) [ppm]	75 ppm

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (123-42-2)	
Norway - Occupational Exposure Limits	
Grenseverdi (OEL TWA) [1]	120 mg/m³
Grenseverdi (OEL TWA) [2]	25 ppm
Korttidsverdi (OEL STEL)	150 mg/m³ (value calculated)
Korttidsverdi (OEL STEL) [ppm]	37.5 ppm (value calculated)
Switzerland - Occupational Exposure Limits	
MAK (OEL TWA) [1]	96 mg/m³
MAK (OEL TWA) [2]	20 ppm
KZGW (OEL STEL)	192 mg/m³
KZGW (OEL STEL) [ppm]	40 ppm
OEL chemical category	Skin notation
USA - ACGIH - Occupational Exposure Limits	
Local name	Diacetone alcohol
ACGIH OEL TWA [ppm]	50 ppm
Remark (ACGIH)	URT & eye irr
Regulatory reference	ACGIH 2022

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (123-42-2)	
DNEL/DMEL (Workers)	
Acute - local effects, inhalation	240 mg/m³
Long-term - systemic effects, dermal	467 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	32.6 mg/m³
Long-term - local effects, inhalation	66.4 mg/m³
DNEL/DMEL (General population)	
Acute - local effects, inhalation	120 mg/m³
Long-term - systemic effects,oral	1.67 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	5.8 mg/m³
Long-term - systemic effects, dermal	33 mg/kg bw/day
Long-term - local effects, inhalation	11.8 mg/m³
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)	7.4 mg/kg dwt

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (123-42-2)	
PNEC sediment (marine water)	0.74 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.31 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	10 mg/l

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:
Avoid all unnecessary exposure.

Personal protective equipment symbol(s):

8.2.2.1. Eye and face protection

Eye protection:
Safety glasses. Chemical goggles or safety glasses. Safety glasses

8.2.2.2. Skin protection

Skin and body protection:
Protective clothing (EN 14605 or EN 13034)

Hand protection:
Gloves. Wear protective gloves.

Other skin protection

Materials for protective clothing:
Good resistance: Butyl rubber. neoprene (chloroprene rubber). Polyethylene/ethylenevinylalcohol. Polyvinylchloride (PVC). Less resistance: Polyvinylalcohol (PVA). Poor resistance: Natural rubber. Nitrile rubber. Viton

8.2.2.3. Respiratory protection

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. [In case of inadequate ventilation] wear respiratory protection.

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.

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
Colour	:	Colourless. Yellow.
Appearance	:	Colorless liquid. Turns yellow on aging.
Molecular mass	:	116.16 g/mol
Odour	:	pleasant. Sweet.
Odour threshold	:	Not available
Melting point	:	-44 °C Not applicable
Freezing point	:	-44 °C
Boiling point	:	168 °C (1013 hPa)
Flammability	:	Non flammable.
Explosive limits	:	1.8 – 6.9 vol % 68 – 393 g/m³
Lower explosion limit	:	1.8 vol %
Upper explosion limit	:	6.9 vol %
Flash point	:	61 – 65.6 °C
Auto-ignition temperature	:	640 °C
Decomposition temperature	:	No data available in the literature
pH	:	No data available in the literature
Viscosity, kinematic	:	No data available in the literature
Viscosity, dynamic	:	0 Pa·s (20 °C)
Solubility	:	Miscible with water. Soluble in organic solvents. Soluble in ethanol. Soluble in ether. Soluble in chloroform. Water: miscible Ethanol: complete Ether: complete
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Partition coefficient n-octanol/water (Log Pow)	:	-0.09 (QSAR)
Vapour pressure	:	1.29 hPa (at 20 °C)
Vapour pressure at 50°C	:	8 hPa (Antoine equation)
Critical pressure	:	36468 hPa
Saturation concentration	:	5.7 g/m³
Density	:	939 kg/m³ (20 °C)
Relative density	:	0.94 (20 °C)
Relative vapour density at 20°C	:	4
Relative density of saturated gas/air mixture	:	1
Particle characteristics	:	Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Explosion limits	:	1.8 – 6.9 vol % 68 – 393 g/m³
Critical temperature	:	334 °C

9.2.2. Other safety characteristics

Specific conductivity	:	16 µS/m
VOC content	:	100 %
Other properties	:	Gas/vapour heavier than air at 20°C,Slightly volatile

SECTION 10: Stability and reactivity

10.1. Reactivity

Violent exothermic reaction with (strong) oxidizers. Reacts on exposure to temperature rise with (some) acids: release of highly flammable gases/vapours.

10.2. Chemical stability

Stable under normal conditions. Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (123-42-2)	
LD50 oral rat	3002 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 1875 mg/kg bodyweight (Equivalent or similar to OECD 402, 24 h, Rat, Male / female, Experimental value, Dermal)
LD50 dermal rabbit	13630 mg/kg
LC50 Inhalation - Rat	> 7.23 g/m³ (Exposure time: 8 h)

Skin corrosion/irritation : Not classified
pH: No data available in the literature
Additional information : Based on available data, the classification criteria are not met
Serious eye damage/irritation : Causes serious eye irritation.
pH: No data available in the literature
Respiratory or skin sensitisation : Not classified
Additional information : Based on available data, the classification criteria are not met
Germ cell mutagenicity : Not classified
Additional information : Based on available data, the classification criteria are not met
Carcinogenicity : Not classified
Additional information : Based on available data, the classification criteria are not met
Reproductive toxicity : Suspected of damaging the unborn child.
Additional information : Based on available data, the classification criteria are not met

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (123-42-2)	
NOAEL (animal/male, F1)	≈ 200 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 443 (Extended One-Generation Reproductive Toxicity Study)
NOAEL (animal/female, F1)	≈ 600 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 443 (Extended One-Generation Reproductive Toxicity Study)

STOT-single exposure : May cause respiratory irritation.
STOT-repeated exposure : Not classified
Additional information : Based on available data, the classification criteria are not met

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (123-42-2)	
LOAEL (oral, rat, 90 days)	1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEL (oral, rat, 90 days)	250 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (123-42-2)	
NOAEC (inhalation, rat, vapour, 90 days)	≥ 4.106 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)

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

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (123-42-2)	
Viscosity, kinematic	No data available in the literature

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

No additional information available

11.2.2. Other information

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 : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air : Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water : Not harmful to crustacea (Daphnia). Slightly harmful to fishes. Groundwater pollutant. Inhibition of activated sludge. Not harmful to algae. Slightly harmful to bacteria.
Hazardous to the aquatic environment, short–term (acute) : Not classified
Hazardous to the aquatic environment, long–term (chronic) : Not classified

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (123-42-2)	
LC50 - Fish [1]	> 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oryzias latipes, Semi-static system, Fresh water, Experimental value, Lethal)
LC50 - Fish [2]	420 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)
EC50 - Crustacea [1]	> 1000 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, Locomotor effect)
EC50 72h - Algae [1]	> 1000 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
LOEC (chronic)	> 100 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	100 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

12.2. Persistence and degradability

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (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

12.3. Bioaccumulative potential

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (123-42-2)	
Partition coefficient n-octanol/water (Log Pow)	-0.09 (QSAR)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4). Not established.

12.4. Mobility in soil

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (123-42-2)	
Surface tension	No data available in the literature
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1 (log Koc, SRC PCKOCWIN v2.0, QSAR)
Ecology - soil	Highly mobile in soil.

12.5. Results of PBT and vPvB assessment

4-hydroxy-4-methylpentan-2-one; diacetone alcohol (123-42-2)	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	
Results of PBT assessment	The product does not meet the PBT and vPvB classification criteria

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

Additional information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging 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.

Ecology - waste materials : Avoid release to the environment.

European List of Waste (LoW) code : 15 01 10* - packaging containing residues of or contaminated by dangerous substances
07 01 04* - other organic solvents, washing liquids and mother liquors

SECTION 14: Transport information

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

14.1. UN number or ID number

UN-No. (ADR) : Not regulated

UN-No. (IMDG)	:	Not regulated
UN-No. (IATA)	:	Not regulated
UN-No. (ADN)	:	Not regulated
UN-No. (RID)	:	Not regulated

14.2. UN proper shipping name

Proper Shipping Name (ADR)	:	Not regulated
Proper Shipping Name (IMDG)	:	Not regulated
Proper Shipping Name (IATA)	:	Not regulated
Proper Shipping Name (ADN)	:	Not regulated
Proper Shipping Name (RID)	:	Not regulated

14.3. Transport hazard class(es)

ADR
Transport hazard class(es) (ADR) : Not regulated

IMDG
Transport hazard class(es) (IMDG) : Not regulated

IATA
Transport hazard class(es) (IATA) : Not regulated

ADN
Transport hazard class(es) (ADN) : Not regulated

RID
Transport hazard class(es) (RID) : Not regulated

14.4. Packing group

Packing group (ADR)	:	Not regulated
Packing group (IMDG)	:	Not regulated
Packing group (IATA)	:	Not regulated
Packing group (ADN)	:	Not regulated
Packing group (RID)	:	Not regulated

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
Not regulated

Transport by sea
Not regulated

Air transport
Not regulated

Inland waterway transport
Not regulated

Rail transport
Not regulated

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	**Applicable on**	**Entry title or description**
3(b)	4-hydroxy-4-methylpentan-2-one; diacetone alcohol	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

VOC Directive (2004/42)

VOC content : 100 %

Explosives Precursors Regulation (2019/1148)

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

Drug Precursors Regulation (273/2004)

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

15.1.2. National regulations

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on the Canadian DSL (Domestic Substances List)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (Vietnam - National Chemical Inventory)

Germany

Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to VwVwS, Annex 1 or 2).
Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)
Technical Instructions on Air Quality Control (TA Luft) : 5.2.5 Organic Substances.

Netherlands

ABM category : B(5) - low hazard for aquatic organisms

SZW-lijst van kankerverwekkende stoffen	:	The substance is not listed
SZW-lijst van mutagene stoffen	:	The substance is not listed
SZW-lijst van reprotoxische stoffen – Borstvoeding	:	The substance is not listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid	:	The substance is not listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling	:	The substance is not listed

Denmark

Class for fire hazard	:	Class III-1
Store unit	:	50 liter
Classification remarks	:	Flammable according to the Danish Ministry of Justice; Emergency management guidelines for the storage of flammable liquids must be followed
Danish National Regulations	:	Young people below the age of 18 years are not allowed to use the product Pregnant/breastfeeding women working with the product must not be in direct contact with the product

15.2. Chemical safety assessment

A chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:	
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
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration

Abbreviations and acronyms:	
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

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 H- and EUH-statements:	
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H361d	Suspected of damaging the unborn child.
Repr. 2	Reproductive toxicity, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation

The classification complies with : ATP 12

Safety Data Sheet (SDS), EU

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