

BARTOLINE METHYLATED SPIRIT

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 2/6/2023 Version: 1.0

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

1.1. Product identifier

Product form : Mixture
Product name : BARTOLINE METHYLATED SPIRIT
UFI : W500-C029-G00E-DEA6
Product code : 4562
Product group : End product

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Fuel for camping stoves and fondues. Glass cleaner.

1.2.2. Uses advised against

Restrictions on use : Cosmetics, personal care products

1.3. Details of the supplier of the safety data sheet

EU Supplier

Bartoline Ireland Limited
Unit 3D North Point House
North Point Business Park
New Mallow Road
Cork T23 AT2P
Ireland
+353212066441
info@bartoline.eu

1.4. Emergency telephone number

Emergency number : +44(0)1482 678710
8.30am - 4.45pm Monday to Friday (BST during DST, otherwise GMT)
NHS 111 - General Public (24 Hour service)

Country	Organisation/Company	Address	Emergency number
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals- 24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)

Also, in the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flammable liquids, Category 2 H225
Serious eye damage/eye irritation, Category 2 H319
Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

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2.2. Label elements

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

Hazard pictograms (CLP)



GHS02

GHS07

Contains (CLP)

: Ethanol

Signal word (CLP)

: Danger

Hazard statements (CLP)

: H225 - Highly 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.

P280 - Wear protective gloves, protective clothing, eye protection, face protection.

P337+P313 - If eye irritation persists: Get medical advice/attention.

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.

2.3. Other hazards

Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

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

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
ethanol	CAS-No.: 64-17-5 EC-No.: 200-578-6 Index-No.: 603-002-00-5 EU REACH Registration-No.: 01-2119457610-43-XXXX	80 - 94	Flam. Liq. 2, H225 Eye Irrit. 2, H319
propan-2-ol	CAS-No.: 67-63-0 EC-No.: 200-661-7 Index-No.: 603-117-00-0 EU REACH Registration-No.: 01-2119457558-25-XXXX	1 - 3	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
butanone	CAS-No.: 78-93-3 EC-No.: 201-159-0 Index-No.: 606-002-00-3 EU REACH Registration-No.: 01-2119457290-43-XXXX	1 - 3	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 EUH066

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

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Specific concentration limits:		
Name	Product identifier	Specific concentration limits
ethanol	CAS-No.: 64-17-5 EC-No.: 200-578-6 Index-No.: 603-002-00-5	(50 ≤C ≤ 100) Eye Irrit. 2, H319

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Remove victim to uncontaminated area. Call a poison center or a doctor if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Move the affected person away from the contaminated area and into the fresh air. Get medical advice/attention. Give oxygen or artificial respiration if necessary.
First-aid measures after skin contact	: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.
First-aid measures after eye contact	: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion	: Get immediate medical advice/attention. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Keep at rest.
Self-protection of the first aider	: Wear recommended personal protective equipment (For further information refer to section 8: "Exposure controls/personal protection") if contact/exposure with the product is likely.

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

Symptoms/effects	: The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Symptoms/effects after inhalation	: At high concentrations, the vapours may be irritating to the respiratory system. May have a narcotic effect at high concentrations. May get other symptoms: Headache, dizziness, nausea, unconsciousness.
Symptoms/effects after skin contact	: Repeated exposure may cause skin dryness or cracking. Irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation & Redness.
Symptoms/effects after ingestion	: May get Gastrointestinal symptoms, including upset stomach. Diarrhoea. Nausea, vomiting.

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	: dry chemical powder, alcohol-resistant foam, carbon dioxide (CO ₂).
Unsuitable extinguishing media	: Do not use a heavy water stream (as this will spread the fire)

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Heavier than air, vapours may travel long distances along ground, ignite and flash back to source. Highly flammable liquid and vapour.
Explosion hazard	: Solvent vapours may form explosive mixture with air. In a fire or if heated, a pressure increase could occur and the container may burst.
Hazardous decomposition products in case of fire	: Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, oxides of nitrogen, various hydrocarbons, aldehydes and soot. These may be harmful or toxic if inhaled in confined spaces or at high concentrations

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5.3. Advice for firefighters

Precautionary measures fire	: Avoid breathing vapours from fire. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Firefighting instructions	: For containers exposed to flames, cool laterally with water, even after the fire is extinguished.
Protection during firefighting	: Wear fire/flare resistant/retardant clothing. In confined space use self-contained breathing apparatus. Full face piece respirator. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents
Other information	: Keep run-off water out of sewers and water sources. Containers close to fire should be removed or cooled with water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Evacuate area.
6.1.1. For non-emergency personnel	
Protective equipment	: Wear recommended personal protective equipment. For further information refer to section 8: "Exposure controls/personal protection."
Emergency procedures	: Ventilate spillage area. Avoid contact with skin and eyes. Keep unnecessary and unprotected personnel away from the spillage. Do not touch or walk on the spilled product. Wash thoroughly after dealing with a spillage. Eliminate all ignition sources. Stop leak if safe to do so.
6.1.2. For emergency responders	
Protective equipment	: Wear recommended personal protective equipment. For further information refer to section 8: "Exposure controls/personal protection."

6.2. Environmental precautions

Avoid release to the environment. Very toxic to aquatic life with long lasting effects. Material insoluble in water. may spread in water systems. Do not discharge into drains or the environment. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

For containment	: Eliminate sources of ignition. No open flames. No smoking. Contain spillage with sand, earth or other suitable non-combustible material
Methods for cleaning up	: Stop leak if safe to do so. Absorb excess liquid spillage on inorganic adsorbent material such as fine sand, brick dust etc. Place spent adsorbent in sealed packages and contact specialist waste disposal contractor. Cover the spilled liquid product with foam to slow down evaporation. Use type. Alcohol resistant foam.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information on personal protection refer to section 8: "Exposure controls/personal protection". For further information on Disposal Considerations refer to section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Keep away from heat, sparks and open flame. Avoid contact with skin, eyes and clothing. Avoid inhalation of vapours and spray/mists. Avoid spilling. Avoid release to the environment. Use explosion-proof electrical, ventilating and lighting equipment. Use only in well-ventilated areas. Use suitable respiratory protection if ventilation is inadequate. Take precautionary measures against static discharge. Earth container and transfer equipment to eliminate sparks from static electricity. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 10 m/sec). AVOID splash filling Do not use compressed air for filling or discharging operations. Avoid handling alongside strong acids, alkali metals and oxidants.
- Hygiene measures : Do not eat, drink or smoke when using this product. After contact with skin, wash immediately and thoroughly with water and soap. Take off immediately all contaminated clothing and wash it before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Remove contaminated clothing and protective equipment before entering eating areas.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Ground/bond container and receiving equipment.
- Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up. Keep locked up and out of reach of children.
- Incompatible products : Oxidizing agent, strong acids. Alkali metals
- Heat and ignition sources : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Storage area : Keep away from food, drink and animal feedingstuffs.
- Packaging materials : Suitable container materials: Carbon steel. Mild steel. Stainless steel. Unsuitable containers: copper, zinc, aluminium, copper alloy, zinc alloy, aluminium alloy.

7.3. Specific end use(s)

Fuel for camping stoves and fondues. Glass cleaner (see Section 1.2). See Exposure Scenarios in Annex i.e. after Section 16 of SDS.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

ethanol (64-17-5)		
Republic of Ireland – Occupational Exposure Limit (OEL)		
OEL STEL (15 min)	1000 ppm	(Chemical Agents and Carcinogens Code of Practice 2021)
United Kingdom - Occupational Exposure Limits		
OEL 8 h TWA	1000 ppm, 19200 mg/m ³	(EH40/2005 – 4 th Edition 2020)
propan-2-ol (67-63-0)		
Republic of Ireland – Occupational Exposure Limit (OEL)		
OEL 8 h TWA	200 ppm (Can be absorbed through the skin)	(Chemical Agents and Carcinogens Code of Practice 2021)
OEL STEL (15 min)	400 ppm (Can be absorbed through the skin)	(Chemical Agents and Carcinogens Code of Practice 2021)
United Kingdom - Occupational Exposure Limits (OEL)		
OEL 8 h TWA	400 ppm, 999 mg/m ³	(EH40/2005 – 4 th Edition 2020)
OEL STEL (15 min)	500 ppm, 1250 mg/m ³	(EH40/2005 – 4 th Edition 2020)

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butanone (78-93-3)		
EU - Indicative Occupational Exposure Limit (IOEL)		
IOEL TWA	200 ppm, 600 mg/m ³	(Directive (EU) 2019/1831)
IOEL STEL	300 ppm, 900 mg/m ³	(Directive (EU) 2019/1831)
Republic of Ireland – Occupational Exposure Limit (OEL)		
OEL 8 h TWA	200 ppm, 600 mg/m ³ (Can be absorbed through the skin)	(Chemical Agents and Carcinogens Code of Practice 2021)
OEL STEL (15 min)	300 ppm, 900 mg/m ³ (Can be absorbed through the skin)	(Chemical Agents and Carcinogens Code of Practice 2021)
United Kingdom - Occupational Exposure Limits (OEL)		
OEL 8 h TWA	200 ppm, 600 mg/m ³ (can be absorbed through skin)	(EH40/2005 – 4 th Edition 2020)
OEL STEL (15 min)	300 ppm, 899 mg/m ³ (can be absorbed through skin)	(EH40/2005 – 4 th Edition 2020)
Biological Monitoring Guidance Values (BMGV)	BMGV: 70 µmol/L, Biological Specimen: Urine, Basis: UK. Biological monitoring guidance values.	

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

ethanol (64-17-5)	
DNEL/DMEL (Workers)	
Acute - local effects, inhalation	1900 mg/m ³
Long-term - systemic effects, dermal	343 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	950 mg/m ³
DNEL/DMEL (General population)	
Acute - local effects, inhalation	950 mg/m ³
Long-term - systemic effects, dermal	206 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	114 mg/m ³
Long-term - systemic effects, oral	87 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.96 mg/l
PNEC aqua (marine water)	0.79 mg/l
PNEC aqua (intermittent, freshwater)	2.75 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	3.6 mg/kg dwt
PNEC sediment (marine water)	2.9 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.63 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	580 mg/l

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propan-2-ol (67-63-0)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	888 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	500 mg/m ³
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	26 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	89 mg/m ³
Long-term - systemic effects, dermal	319 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	140.9 mg/l
PNEC aqua (marine water)	140.9 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	552 mg/kg dwt
PNEC sediment (marine water)	552 mg/kg dwt
PNEC (Soil)	
PNEC soil	28 mg/kg dwt
butanone (78-93-3)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	1161 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	600 mg/m ³
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	31 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	106 mg/m ³
Long-term - systemic effects, dermal	412 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	55.8 mg/l
PNEC aqua (marine water)	55.8 mg/l
PNEC aqua (intermittent, freshwater)	55.8 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	284.74 mg/kg dwt
PNEC sediment (marine water)	284.7 mg/kg dwt
PNEC (Soil)	
PNEC soil	22.5 mg/kg dwt
PNEC (Oral)	
PNEC oral (secondary poisoning)	1000 mg/kg food
PNEC (STP)	
PNEC sewage treatment plant	709 mg/l

8.1.5. Control banding

No additional information available

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8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

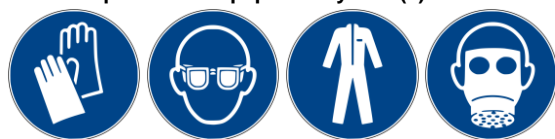
As this product contains ingredients with exposure limits, process enclosures, local exhaust ventilation or other engineering controls should be used to keep worker exposure below any statutory or recommended limits, if use generates dust, fumes, gas, vapour or mist. Ensure the ventilation system is regularly maintained and tested. Use explosion-proof electrical, ventilating and lighting equipment. This product must not be handled in a confined space without adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

8.2.2. Personal protection equipment

Personal protective equipment:

Do not attempt to take action without suitable protective equipment. Appropriate engineering controls.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Chemical goggles or safety glasses

Eye protection			
Type	Field of application	Characteristics	Standard
Use splash goggles when eye contact due to splashing is possible	Droplet	With side shields	EN 166

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

It is recommended that gloves are made of the following material: Butyl rubber (minimum glove thickness 0.7mm and break through time > 480min). To protect hands from chemicals, gloves should comply with European Standard EN374

Other skin protection

Materials for protective clothing:

Use appropriate personal protection equipment (PPE). According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Wear respiratory protection.

Respiratory protection			
Device	Filter type	Condition	Standard
Wear respiratory protection	Type A - High-boiling (>65 °C) organic compounds, Type P2	Vapour protection	EN 405

8.2.2.4. Thermal hazards

No additional information available

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8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment. Do not exceed the occupational exposure limits (OEL). Assure that emissions are compliant with all applicable air pollution control regulations. Emission reduction measures for the specific use situation has to be evaluated: Gas absorbers and scrubbers for relatively small volume structures. Minimisation of the fumigated volume by inflated balloons for large volume structure (e.g. churches, houses). (fumigation). Control measures to prevent releases. Keep container tightly closed. Dispose of this material and its container at hazardous or special waste collection point.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Violet.
Appearance	: Coloured liquid.
Odour	: Alcoholic
Odour threshold	: Not available
Melting point/Freezing Point	: -114 °C
Boiling point	: 78°C @ 1013 hPa
Flammability	: Not available
Lower explosion limit	: 2.5% V
Upper explosion limit	: 13.5% V
Flash point	: ≈ 12 °C Closed cup.
Auto-ignition temperature	: 363 °C
Decomposition temperature	: Not available
pH	: Not available.
Viscosity, kinematic	: Not available
Viscosity, dynamic	: ≈ 1.2 mPa.s @ 20°C
Solubility	: Soluble in water. Miscible with the following materials: Organic solvents.
Partition coefficient n-octanol/water (Log Kow)	: - 0.35
Vapour pressure	: 5.8 kPa
Vapour pressure at 50 °C	: Not available
Density	: 0.79 – 0.82 kg/l @ 20 °C
Relative density	: Not available
Relative vapour density at 20 °C	: 1.03
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No information available

9.2.2. Other safety characteristics

VOC content	: 100 %
Evaporation Rate	: 3.4 BuAc=1

SECTION 10: Stability and reactivity

10.1. Reactivity

May react with: Strong Acids. Strong oxidising agents.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

May react with: Strong Acids. Strong oxidising agents.

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10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition. Never pressurise packagings as they will not resist.

10.5. Incompatible materials

Acids. Oxidizing agent. Alkali Metals

10.6. Hazardous decomposition products

Does not decompose when used for intended uses. Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot as well as acrid smoke

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Based on available data, the classification criteria are not met.
Acute toxicity (dermal) : Based on available data, the classification criteria are not met.
Acute toxicity (inhalation) : Based on available data, the classification criteria are not met.

ethanol (64-17-5)

LD50 oral	15010 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Reference: Youssef A, Madkour K, Cox C, Weiss B. Comparative lethality of methanol, ethanol and mixtures in female rats. J Appl Toxicol. 1992 Jun;12(3):193-7. doi: 10.1002/jat.2550120308.
LD50 inhalation (vapour)	>114 mg/L air Animal: rat, Exposure Duration: 1 h, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Reference: Moser VC, Balster RL. Acute motor and lethal effects of inhaled toluene, 1,1,1-trichloroethane, halothane, and ethanol in mice: effects of exposure duration. Toxicol Appl Pharmacol. 1985 Feb;77(2):285-91. doi: 10.1016/0041-008x(85)90328-x

propan-2-ol (67-63-0)

LD50 oral	5840 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Reference: SMYTH HF Jr, CARPENTER CP. Further experience with the range finding test in the industrial toxicology laboratory. J Ind Hyg Toxicol. 1948 Jan;30(1):63-8.
LD50 dermal	12870 mg/kg bodyweight Animal: rabbit, Reference: SMYTH HF Jr, CARPENTER CP. Further experience with the range finding test in the industrial toxicology laboratory. J Ind Hyg Toxicol. 1948 Jan;30(1):63-8.
LC50 inhalation (vapour)	72.6 mg/L Animal: rat, Exposure Duration: 4 h, Reference: Guseinov, V.G., (1985), Gig. Tr. Prof. Zabol. (7): 60 – 62.

butanone (78-93-3)

LD50 oral	2193 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)
LC50 inhalation	> 5000 ppm, Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity) Reference: Cavender, Casey, Salem, Swenburg and Gralla (1983). Fund. Appl. Toxicol. 3: 264-270.
LD50 dermal	> 8000 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)

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

Serious eye damage/irritation : Causes serious eye irritation.
pH: Not available.

ethanol (64-17-5)

Irritating to eyes (based on severity from mean scores), Animal: rabbit, Guideline: OECD Guideline 405 (Acute Eye Irritation / Corrosion), Reference: Jacobs GA, Martens MA. OECD Skin Irritation Tests on Three Alcohols. Journal of the American College of Toxicology. 1992;11(6):733-733. doi:10.3109/10915819209142126

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ethanol (64-17-5)

Irritating to eyes (based on severity from mean scores and signs of reversibility seen in Day 7), Animal; rabbit, Guideline: OECD Guideline 405 (Acute Eye Irritation / Corrosion), Reference: ECETOC (1998). Eye irritation reference chemicals databank (second edition). Technical report no 48 (2), June 1988. European Centre for Ecotoxicology and Toxicology of Chemicals, Brussels.

propan-2-ol (67-63-0)

Irritating to eyes (based on severity from mean scores but no signs of irreversible damage), Animal; rabbit, Guideline: OECD Guideline 405 (Acute Eye Irritation / Corrosion)

butanone (78-93-3)

Irritating to eyes (based on severity from mean scores but no signs of irreversible damage), Animal; rabbit, Guideline: OECD Guideline 405 (Acute Eye Irritation / Corrosion) (however, method slightly deviated from guideline - observations post-exposure only until day 7)

Respiratory or skin sensitisation	: Based on available data, the classification criteria are not met.
Germ cell mutagenicity	: Based on available data, the classification criteria are not met.
Carcinogenicity	: Based on available data, the classification criteria are not met.
Reproductive toxicity	: Based on available data, the classification criteria are not met.
STOT-single exposure	: Based on available data, the classification criteria are not met.

propan-2-ol (67-63-0)

STOT-single exposure	May cause drowsiness or dizziness. Narcotic and central nervous system sedation effects observed, Animal: rat, Exposure Duration: 6 h, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)
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butanone (78-93-3)

STOT-single exposure	May cause drowsiness or dizziness. Human Evidence: There have been several cases of workers chronically exposed to butanone reporting in dizziness and drowsiness. Reference: Agency for Toxic Substances and Disease Registry (ATSDR), 2010. 2-Butanone, Toxicological Profile Addendum. http://www.atsdr.cdc.gov/toxprofiles/index.asp - cited in Inventory Multi-tiered Assessment and Prioritisation Single Assessment Report for 2-Butanone: Human health tier II assessment, Australian Government Department of Health and the Australian Government Department of the Environment and Energy, 2013, https://www.industrialchemicals.gov.au/sites/default/files/2-Butanone_Human%20health%20tier%20II%20assessment.pdf
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STOT-repeated exposure	: Based on available data, the classification criteria are not met.
Aspiration hazard	: Based on available data, the classification criteria are not met.

11.2. Information on other hazards

11.2.1 Endocrine Disrupting Properties

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

11.2.2 Other Information

No additional information available.

SECTION 12: Ecological information

12.1. Toxicity

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

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ethanol (64-17-5)	
LC50 96 h - Fish	> 14,200 mg/l Test organisms (species): Pimephales promelas, Guideline: US EPA method E03-05, Reference: Acute toxicities of organic chemicals to fathead minnows (pimephales promelas), Vol 1, Brooke LT, Call DJ, Geiger DL, Northcott CE (eds), 1984, Published by Center for Lake Superior Studies, University of Wisconsin-Superior. ISBN 0-9614968-0-0, https://minds.wisconsin.edu/handle/1793/81143
LC50 48 h- Crustacea	12340 mg/l Test organisms (species): Daphnia magna, Guideline: ASTM Standard E729-80, Reference: Takahashi IT, Cowgill UM, Murphy PG. Comparison of ethanol toxicity to Daphnia magna and Ceriodaphnia dubia tested at two different temperatures: static acute toxicity test results. Bull Environ Contam Toxicol. 1987 Aug;39(2):229-36. doi: 10.1007/BF01689411
EC50 72h - Algae	275 mg/l mg/l Test organisms (species): Chlorella vulgaris, Guideline: OECD Guideline 201 (Alga, Growth Inhibition Test), Reference: El Jay A. Toxic effects of organic solvents on the growth of Chlorella vulgaris and Selenastrum capricornutum. Bull Environ Contam Toxicol. 1996 Aug;57(2):191-8. doi: 10.1007/s001289900174.
NOEC 10 d - Crustacea	9.6 mg/l Test organisms (species): Daphnia magna, Reference: SIDS Initial Assessment Report For SIAM 19 (Ethanol), https://hpcchemicals.oecd.org/UI/handler.axd?id=2602cc56-d998-4e67-bd78-5454ef3f8f9a
propan-2-ol (67-63-0)	
LC50 96 h - Fish	9640 mg/l Test organisms (species): Pimephales promelas, Guideline: U.S. Environmental Protection Agency Committee on Methods for Toxicity Tests with Aquatic Organisms (1975) (virtually identical to OECD Guideline 203 except 4 fish per concentration instead of 7 per concentration), Reference: Veith, G.D., Call, D.J. & Brooke, L.T., Estimating the Acute Toxicity of Narcotic Industrial Chemicals to Fathead Minnows. In: Bishop, W.E., Cardwell, R.D. & Heidolph, B.B. Eds. Aquatic Toxicology and Hazard Assessment: 6th Symp., ASTM STP 802, Philadelphia (USA), 1983, 90 - 97
EC50 24 h- Crustacea	> 10000 mg/l Test organisms (species): Daphnia magna, Guideline: similar to OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) but had deviations such as 10 animals per conc, Test period 24 h, Oxygen concentration not measured and No controls. Reference : Bringmann, G. & Kuehn, R., Results of the Damaging Effect of Water Pollutants on Daphnia magna, Z. Wasser Abwasser Forsch., 10(5), 1977, 161 - 166
NOEC 21 d - Crustacea	30 mg/l Test organisms (species): Daphnia magna, Guideline: UBA-Verfahrensvorschlag: Verlaengerter Toxizitaetstest bei Daphnia magna, Reference: Huels-Bericht DL 106, 1988 (unveroeffentlicht). Idem, Shell Group Research Report, AMGR.0224.74 – cited in SIDS Initial Assessment Report For Isopropanol, https://hpcchemicals.oecd.org/UI/handler.axd?id=668b6b61-3645-491e-a423-1a7100bc6598
NOEC 7 d – Algae	30 mg/l Test organisms (species): Scenedesmus quadricauda, Reference: Bringmann, G. & Kuehn, R., Comparison of the Toxicity Thresholds of Water Pollutants to Bacteria, Algae and Protozoa in the Cell Multiplication Inhibition Test, Water Research, 14, 1980, 231 - 241
butanone (78-93-3)	
LC50 96 h - Fish	2973 mg/l Test organisms (species): Pimephales promelas, Guideline: OECD Guideline 203 (Fish, Acute Toxicity Test)
EC50 48 h- Crustacea	308 mg/l Test organisms (species): Daphnia magn, Guideline: OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
EC50 72h - Algae [1]	1220 mg/l Test organisms (species): Raphidocelis subcapitata, Guideline: OECD Guideline 201 (Alga, Growth Inhibition Test)
NOEC 72 h – Algae	566 mg/l Test organisms (species): Raphidocelis subcapitata, Guideline: OECD Guideline 201 (Alga, Growth Inhibition Test)

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12.2. Persistence and degradability

No additional information available on mixture.

ethanol (64-17-5)

Guideline: BOD (Standard methods for the examination of water and waste water 1971. 13th ed, American Public Health Assoc, NY. Test based on measuring dissolved oxygen concentration changes
This study examined many chemicals and has been judged reliable by the OECD during the assessment of a number of chemical substances under the OECD HPV programme.

82% degradation (O₂ consumption) at Day 5
95% degradation (O₂ consumption) at Day 15
Conclusion; substance is readily biodegradable

propan-2-ol (67-63-0)

Guideline: Similar to EU Method C.5 (Degradation: Biochemical Oxygen Demand) but had deviations (No reference substance was reported, and results were only based on one measurement not three.)
Reference: A.L. Bridie', C.J.M. Wolff, M. Winter, BOD and COD of some petrochemicals, Water Research, Volume 13, Issue 7, 1979, Pages 627-630, ISSN 0043-1354,
[https://doi.org/10.1016/0043-1354\(79\)90011-3](https://doi.org/10.1016/0043-1354(79)90011-3).

Had a BOD5/COD ratio ≥ 5 .
Conclusions: substance is likely to be readily biodegradable

butanone (78-93-3)

Guideline: OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test) (however incubation temperature was 18 to 21°C, instead of constant temperature ($\pm 1^\circ\text{C}$))

70% degradation (O₂ consumption) in 28 days
98% degradation (O₂ consumption) in 28 days
Conclusion; substance is readily biodegradable (and rapidly degradable)

12.3. Bioaccumulative potential

No additional information available on mixture

ethanol (64-17-5)

The substance has a low potential for bioaccumulation (Partition coefficient is -0.35 which is <3) and therefore testing for bioaccumulation is not required.

propan-2-ol (67-63-0)

The substance is expected to have a low potential for aquatic / sediment bioaccumulation because it has a low octanol water partition coefficient (Partition coefficient is 0.05 which is <3)

butanone (78-93-3)

The substance is expected to have a low potential for aquatic / sediment bioaccumulation because it has a low octanol water partition coefficient (Partition coefficient is 0.3 which is <3)

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

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12.6. Endocrine disrupting properties

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

12.7. Other adverse effects

No other adverse effects are known as of yet for this mixture or any substances contained in this mixture.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

This product is classified as Hazardous Waste as it is supplied.

Waste generation should be avoided or minimised where possible. When handling waste, the safety precautions applying to handling of the product should be considered. Label the containers containing waste and remove from the area as soon as possible. Label the containers containing waste contaminated material and remove from the area as soon as possible.






Product disposal to sewer should be avoided, if possible, and only be carried out after treatment, and under relevant rules, e.g. Consent to Discharge. Where wastes undergo disposal, external recovery or treatment, it must comply with the requirements of environmental protection, waste disposal legislation and any local authority requirements. If wastes undergo incineration, they must be suitable for it at an approved facility.

Used packaging waste should be reused or recycled, if uncontaminated. Contaminated packaging should be cleaned on site, if appropriate facilities exist, including any relevant rules or permits, or offsite by a specialist provider. Contaminated packaging which cannot be safely cleaned must be treated in the same way as the product, and should only be disposed of as a last resort.

List of waste code is 20 01 13* - Solvents. These codes have been assigned based on the actual composition of the product as supplied. Seek advice from a hazardous waste specialist for waste classification.

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 1170	UN 1170	UN 1170	UN 1170	UN 1170
14.2. UN proper shipping name				
ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
Transport document description				
UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 3, II, (D/E)	UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 3, II	UN 1170 Ethanol Solution, 3, II,	UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 3, II	UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 3, II
14.3. Transport hazard class(es)				
3	3	3	3	3
				
14.4. Packing group				
II	II	II	II	II

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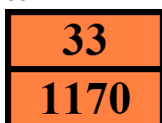
according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

ADR	IMDG	IATA	ADN	RID
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available				

14.6. Special precautions for user

Overland transport

Classification code (ADR) : F1
Special provisions (ADR) : 144, 601
Limited quantities (ADR) : 1I
Excepted quantities (ADR) : E2
Packing instructions (ADR) : P001, IBC02, R001
Mixed packing provisions (ADR) : MP19
Portable tank and bulk container instructions (ADR) : T4
Portable tank and bulk container special provisions (ADR) : TP1
Tank code (ADR) : LGBF
Vehicle for tank carriage : FL
Transport category (ADR) : 2
Special provisions for carriage - Operation (ADR) : S2, S20
Hazard identification number (Kemler No.) : 33
Orange plates :



Tunnel restriction code (ADR) : D/E
EAC code : •2YE

Transport by sea

Special provisions (IMDG) : 144
Limited quantities (IMDG) : 1 L
Excepted quantities (IMDG) : E2
Packing instructions (IMDG) : P001
IBC packing instructions (IMDG) : IBC02
Tank instructions (IMDG) : T4
Tank special provisions (IMDG) : TP1
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D
Stowage category (IMDG) : A
Properties and observations (IMDG) : Colourless, volatile liquids. Pure ETHANOL: flashpoint 13°C c.c. Explosive limits: 3.3% to 19% Miscible with water.

Air transport

PCA Excepted quantities (IATA) : E2
PCA Limited quantities (IATA) : Y341
PCA limited quantity max net quantity (IATA) : 1L
PCA packing instructions (IATA) : 353
PCA max net quantity (IATA) : 5L
CAO packing instructions (IATA) : 364
CAO max net quantity (IATA) : 60L
Special provisions (IATA) : A3, A58, A180
ERG code (IATA) : 3L

Inland waterway transport

Classification code (ADN) : F1
Special provisions (ADN) : 144, 601
Limited quantities (ADN) : 1 L

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Excepted quantities (ADN) : E2
Carriage permitted (ADN) : T
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01
Number of blue cones/lights (ADN) : 1

Rail transport

Classification code (RID) : F1
Special provisions (RID) : 144, 601
Excepted quantities (RID) : E2
Packing instructions (RID) : P001, IBC02, R001
Mixed packing provisions (RID) : MP19
Portable tank and bulk container instructions (RID) : T4
Portable tank and bulk container special provisions (RID) : TP1
Tank codes for RID tanks (RID) : LGBF
Transport category (RID) : 2
Colis express (express parcels) (RID) : CE7
Hazard identification number (RID) : 33

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)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

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

REACH Candidate List (SVHC)

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

PIC Regulation (Prior Informed Consent)

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

POP Regulation (Persistent Organic Pollutants)

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

Ozone Regulation (2024/590)

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

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 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)

Name	CN designation	CAS-No.	CN code	Category	Threshold	Annex
Methylethylketone	Butanone	78-93-3	2914 12 00	Category 3		Annex I

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Detergent Regulation ((EC) No 648/2004

Product is under the scope of this regulation

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for this mixture.

SECTION 16: Other information

Indication of changes:

Due to change of classification database the revision numbering has been reset. You should therefore look at the revision date rather than the revision number to ensure you have the most up to date version.

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
bw	Bodyweight
ATP	Adaptation to Technical Progress
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CLP	The Classification, Labelling and Packaging
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
M	M Factor
mg	Milligrams
NI	Northern Ireland
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

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Abbreviations and acronyms:	
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
ROI	Republic of Ireland
SCL	Specific Classification Limit
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

Full text of H- and EUH-statements:	
EUH066	Repeated exposure may cause skin dryness or cracking.
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3

Key literature references and sources for data

- ECHA (European Chemicals Agency). <http://echa.europa.eu/>, - REACH disseminated dossiers of substances included in Section 3
- Supplier's Safety documents
- NITE Chemical Risk Information Platform (NITE-CHRIP) - GHS Classification Guidance by the Japanese Government for substances included in Section 3.2 of SDS.
- Youssef A, Madkour K, Cox C, Weiss B. Comparative lethality of methanol, ethanol and mixtures in female rats. *J Appl Toxicol.* 1992 Jun;12(3):193-7. doi: 10.1002/jat.2550120308.
- Moser VC, Balster RL. Acute motor and lethal effects of inhaled toluene, 1,1,1-trichloroethane, halothane, and ethanol in mice: effects of exposure duration. *Toxicol Appl Pharmacol.* 1985 Feb;77(2):285-91. doi: 10.1016/0041-008x(85)90328-x
- SMYTH HF Jr, CARPENTER CP. Further experience with the range finding test in the industrial toxicology laboratory. *J Ind Hyg Toxicol.* 1948 Jan;30(1):63-8.
- Guseinov, V.G., (1985), *Gig. Tr. Prof. Zabol.* (7): 60 – 62.
- Cavender, Casey, Salem, Swenburg and Gralla (1983). *Fund. Appl. Toxicol.* 3: 264-270.
- Jacobs GA, Martens MA. OECD Skin Irritation Tests on Three Alcohols. *Journal of the American College of Toxicology.* 1992;11(6):733-733. doi:10.3109/10915819209142126
- ECETOC (1998). Eye irritation reference chemicals databank (second edition). Technical report no
- 48 (2), June 1988. European Centre for Ecotoxicology and Toxicology of Chemicals, Brussels
- Acute toxicities of organic chemicals to fathead minnows (pimephales promelas), Vol 1, Brooke LT, Call DJ, Geiger DL, Northcott CE (eds), 1984. Published by Center for Lake Superior Studies, University of Wisconsin-Superior. ISBN 0-9614968-0-0, <https://minds.wisconsin.edu/handle/1793/81143>
- Takahashi IT, Cowgill UM, Murphy PG. Comparison of ethanol toxicity to *Daphnia magna* and *Ceriodaphnia dubia* tested at two different temperatures: static acute toxicity test results. *Bull Environ Contam Toxicol.* 1987 Aug;39(2):229-36. doi: 10.1007/BF01689411
- El Jay A. Toxic effects of organic solvents on the growth of *Chlorella vulgaris* and *Selenastrum capricornutum*. *Bull Environ Contam Toxicol.* 1996 Aug;57(2):191-8. doi: 10.1007/s001289900174.
- SIDS Initial Assessment Report For SIAM 19 (Ethanol), <https://hpvchemicals.oecd.org/UI/handler.axd?id=2602cc56-d998-4e67-bd78-5454ef3f8f9a>

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- Veith, G.D., Call, D.J. & Brooke, L.T., Estimating the Acute Toxicity of Narcotic Industrial Chemicals to Fathead Minnows. In: Bishop, W.E., Cardwell, R.D. & Heidolph, B.B. Eds. Aquatic Toxicology and Hazard Assessment: 6th Symp., ASTM STP 802, Philadelphia (USA), 1983, 90 - 97
- Bringmann, G. & Kuehn, R., Results of the Damaging Effect of Water Pollutants on Daphnia magna, Z. Wasser Abwasser Forsch., 10(5), 1977, 161 - 166
- Huels-Bericht DL 106, 1988 (unveroeffentlicht). Idem, Shell Group Research Report, AMGR.0224.74 – cited in SIDS Initial Assessment Report For Isopropanol, <https://hpvchemicals.oecd.org/UI/handler.axd?id=668b6b61-3645-491e-a423-1a7100bc6598>
- Bringmann, G. & Kuehn, R., Comparison of the Toxicity Thresholds of Water Pollutants to Bacteria, Algae and Protozoa in the Cell Multiplication Inhibition Test, Water Research, 14, 1980, 231 - 241
- A.L. Bridie', C.J.M. Wolff, M. Winter, BOD and COD of some petrochemicals, Water Research, Volume 13, Issue 7, 1979, Pages 627-630, ISSN 0043-1354, [https://doi.org/10.1016/0043-1354\(79\)90011-3](https://doi.org/10.1016/0043-1354(79)90011-3)
- Agency for Toxic Substances and Disease Registry (ATSDR), 2010. 2-Butanone, Toxicological Profile Addendum.
- <http://www.atsdr.cdc.gov/toxprofiles/index.asp> - cited in Inventory Multi-tiered Assessment and Prioritisation Single Assessment Report for 2-Butanone: Human health tier II assessment, Australian Government Department of Health and the Australian Government Department of the Environment and Energy, 2013, https://www.industrialchemicals.gov.au/sites/default/files/2-Butanone_Human%20health%20tier%20II%20assessment.pdf

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Flam. Liq. 2, H225	On Basis Of Test Data
Eye Irrit. 2, H319	Calculation method

Safety Data Sheet (SDS), EU

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

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Annex to SDS

Exposure Scenario - Worker

SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents - Professional
Use Descriptor	Sector of Use: SU 22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13 Environmental Release Categories: ERC 8A, ERC 8D
Scope of process	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Additional Information	No exposure assessment presented for the environment.

Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of substance in product	Covers use of substance/product up to 100% (unless stated differently).;
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently)	
Other Operational Conditions affecting worker Exposure.	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented	

Contributing scenarios	Risk Management Measures
General measures (eye irritants).	Use suitable eye protection Avoid direct eye contact with product, also via contamination on hands.
Filling / preparation of equipment from drums or containers.	No other specific measures identified
Automated process with (semi) closed systems. Use in contained systems	No other specific measures identified
Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance products)	No other specific measures identified

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Manual Surfaces Cleaning Dipping, immersion and pouring	No other specific measures identified
Cleaning with low-pressure washers Rolling, Brushing no spraying	No other specific measures identified
Cleaning with high pressure washers Spraying Indoor	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)
Cleaning with high pressure washers Spraying Outdoor	Limit the substance content in the product to 1 % , or: Avoid carrying out activities involving exposure for more than 15 minutes
Manual Surfaces Cleaning Spraying	No other specific measures identified
Ad hoc manual application via trigger sprays, dipping, etc. Rolling, Brushing	No other specific measures identified
Application of cleaning products in closed systems Outdoor	No other specific measures identified
Cleaning of medical devices	No other specific measures identified
Storage	Store substance within a closed system

Section 2.2	Control of Environmental Exposure
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SECTION 3	EXPOSURE ESTIMATION
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Section 3.1 - Health
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 3.2 -Environment

No exposure assessment presented for the environment.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE
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	SCENARIO
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	
Section 4.2 -Environment	
No exposure assessment presented for the environment.	

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Exposure Scenario - Worker

SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel - Professional
Use Descriptor	Sector of Use: SU 22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a, PROC 8b, PROC 16 Environmental Release Categories: ERC 9A, ERC 9B
Scope of process	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Additional Information	No exposure assessment presented for the environment.

Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of substance in product	Covers use of substance/product up to 100% (unless stated differently).;
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently)	
Other Operational Conditions affecting worker Exposure.	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented	

Contributing scenarios	Risk Management Measures
General measures (eye irritants).	Use suitable eye protection Avoid direct eye contact with product, also via contamination on hands.
Bulk transfers	Transfer via enclosed lines Clear transfer lines prior to de-coupling
Drum/batch transfers	Use drum pumps or carefully pour from container Avoid spillage when withdrawing pump
Refuelling	Avoid spillage when withdrawing pump
Use as a fuel (closed systems)	No other specific measures identified
General exposures (closed systems)	No other specific measures identified

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according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Equipment cleaning and maintenance	Drain down system prior to equipment break-in or maintenance Retain drain downs in sealed storage pending disposal or for subsequent recycle
Storage	Store substance within a closed system

Section 2.2	Control of Environmental Exposure
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SECTION 3	EXPOSURE ESTIMATION
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Section 3.1 - Health
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 3.2 -Environment

No exposure assessment presented for the environment.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
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Section 4.1 - Health
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 -Environment

No exposure assessment presented for the environment.

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Exposure Scenarios - Consumer

SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents - Consumer
Use Descriptor	Sector of Use: SU 21 Product Categories: PC3, PC4, PC8 (excipient only), PC9a, PC24, PC35, PC38 Environmental Release Categories: ERC 8A, ERC 8D
Scope of process	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Additional Information	No exposure assessment presented for the environment.

Section 2.1	Control of Consumer Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure > 10 Pa at STP
Concentration of substance in product	Unless otherwise stated:
	Covers concentration up to (%): 100 %
Amounts used	
Unless otherwise stated:	
For each use event, covers amount up to (g):	13,800
covers skin contact area (cm ²):	857.5
Frequency and Duration of Use	
Unless otherwise stated:	
Covers use up to (times/day of use):	1
Covers use up to (hours/event):	4
Other Operational Conditions affecting consumer Exposure	
Unless otherwise stated:	
Covers use at ambient temperatures.	
Covers use in room size of 20m ³	
Covers use under typical household ventilation.	

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Air care products. Air care, instant action (aerosol sprays).	Covers concentrations up to 50 %
	Covers use up to 365 days/year
	Covers use up to 4 times/day of use
	For each use event, covers amount up to (g): 0.1 g
	Covers use in room size of 20 m ³
	Covers exposure up to 0.25 hours/event

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Air care products. Air care, instant action (aerosol sprays). Biocidal Products (e.g. Disinfectants, pestcontrol) (excipient only).	Covers concentrations up to 50 %
	Covers use up to 365 days/year
	Covers use up to 4 times/day of use
	Covers skin contact area up to 428.00 cm ²
	For each use event, covers amount up to 0.1 g
	Covers use in room size of 20 m ³
	Covers exposure up to 0.25 hours/event
Air care products. Air care, continuous action (solid and liquid). Biocidal Products (e.g. Disinfectants, pestcontrol) (excipient only).	Covers concentrations up to 50 %
	Covers use up to 365 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 35.70 cm ²
	For each use event, covers amount up to 0.48 g
	Covers use in room size of 20 m ³
	Covers exposure up to 8.00 hours/event
Air care products. Air care, continuous action (solid and liquid).	Covers concentrations up to 50 %
	Covers use up to 365 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 35.70 cm ²
	For each use event, covers amount up to 0.48 g
	Covers use in room size of 20 m ³
	Covers exposure up to 8.00 hours/event
Anti-Freeze and De-icing products Washing car window.	Covers concentrations up to 50 %
	Covers use up to 365 days/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 0.5 g
	Covers use in a one car garage (34 m ³) under typical ventilation.
	Covers use in room size of 34 m ³
	Covers exposure up to 0.02 hours/event
Anti-Freeze and De-icing products Pouring into radiator	Covers concentrations up to 50 %
	Covers use up to 365 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 428.00 cm ²
	For each use event, covers amount up to 2,000 g
	Covers use in a one car garage (34 m ³) under typical ventilation.
	Covers use in room size of 34 m ³
	Covers exposure up to 0.17 hours/event
Anti-Freeze and De-icing products Lock de-icer.	Covers concentrations up to 50 %

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	Covers use up to 365 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 214.40 cm ²
	For each use event, covers amount up to 4 g
	Covers use in a one car garage (34 m ³) under typical ventilation.
	Covers use in room size of 34 m ³
	Covers exposure up to 0.25 hours/event
Biocidal Products (e.g. Disinfectants, pestcontrol) (excipient only). Laundry and dish washing products.	Covers concentrations up to 50 %
	Covers use up to 365 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 857.50 cm ²
	For each use event, covers amount up to 15 g
	Covers use in room size of 20 m ³
	Covers exposure up to 0.50 hours/event
Biocidal Products (e.g. Disinfectants, pestcontrol) (excipient only). Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	Covers concentrations up to 50 %
	Covers use up to 128 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 857.50 cm ²
	For each use event, covers amount up to 27 g
	Covers use in room size of 20 m ³
	Covers exposure up to 0.33 hours/event
Biocidal Products (e.g. Disinfectants, pestcontrol) (excipient only). Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners).	Covers concentrations up to 50 %
	Covers use up to 128 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 428.00 cm ²
	For each use event, covers amount up to 35 g
	Covers use in room size of 20 m ³
	Covers exposure up to 0.17 hours/event
Coatings and Paints, Thinners, paint removers Solvent rich, high solid, water borne paint.	Covers concentrations up to 27.5 %
	Covers use up to 6 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 428.75 cm ²
	For each use event, covers amount up to 744 g
	Covers use in room size of 20 m ³

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	Covers exposure up to 2.20 hours/event
Coatings and Paints, Thinners, paint removers Aerosol spray can.	Covers concentrations up to 50 %
	Covers use up to 2 days/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 215 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0.33 hours/event
Coatings and Paints, Thinners, paint removers Removers (paint-, glue-, wall paper-, sealant-remover).	Covers concentrations up to 50 %
	Covers use up to 3 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 857.50 cm2
	For each use event, covers amount up to 491 g
	Covers use in room size of 20 m3
	Covers exposure up to 2.00 hours/event
Lubricants, Greases and Release Products Liquids.	Covers concentrations up to 100 %
	Covers use up to 4 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 468.00 cm2
	For each use event, covers amount up to 2,200 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0.17 hours/event
Lubricants, Greases and Release Products Pastes.	Covers concentrations up to 20 %
	Covers use up to 10 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 468.00 cm2
	For each use event, covers amount up to 34 g
	Covers use in room size of 20 m3
Lubricants, Greases and Release Products Sprays.	Covers concentrations up to 50 %
	Covers use up to 6 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 428.75 cm2
	For each use event, covers amount up to 73 g
	Covers use in room size of 20 m3
	Covers exposure up to 0.17 hours/event
Washing and Cleaning Products (including solvent based products). Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal	Covers concentrations up to 5 %

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cleaners).	
	Covers use up to 128 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 857.50 cm ²
	For each use event, covers amount up to 27 g
	Covers use in room size of 20 m ³
	Covers exposure up to 0.33 hours/event
Washing and Cleaning Products (including solvent based products). Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners).	Covers concentrations up to 15 %
	Covers use up to 128 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 428.00 cm ²
	For each use event, covers amount up to 35 g
	Covers use in room size of 20 m ³
	Covers exposure up to 0.17 hours/event
Welding and soldering products, flux products.	Covers concentrations up to 50 %
	Covers use up to 365 days/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 12 g
	Covers use in room size of 20 m ³
	Covers exposure up to 1.00 hours/event

Section 2.2	Control of Environmental Exposure
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SECTION 3	EXPOSURE ESTIMATION
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Section 3.1 - Health
The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

Section 3.2 -Environment
No exposure assessment presented for the environment.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
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Section 4.1 - Health
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 -Environment
No exposure assessment presented for the environment.

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Safety Data Sheet

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Exposure Scenarios - Consumer

SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel - Consumer
Use Descriptor	Sector of Use: SU 21 Product Categories: PC13 Environmental Release Categories: ERC 9A, ERC 9B
Scope of process	Covers consumer uses in liquid fuels.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Additional Information	No exposure assessment presented for the environment.

Section 2.1	Control of Consumer Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure > 10 Pa at STP
Concentration of substance in product	Unless otherwise stated:
	Covers concentration up to (%): 100 %

Amounts used	
Unless otherwise stated:	
For each use event, covers amount up to (l):	37,500
covers skin contact area (cm ²):	420
Frequency and Duration of Use	
Unless otherwise stated:	
Covers use up to (times/day of use):	0.143
Covers use up to (hours/event):	2
Other Operational Conditions affecting consumer Exposure	
Unless otherwise stated: Covers use at ambient temperatures. Covers use in room size of 20m ³ Covers use under typical household ventilation.	

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Fuels. Liquid: Automotive Refuelling.	Covers concentrations up to 100 %
	Covers use up to 52 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 210.00 cm ²
	For each use event, covers amount up to 37,500 g
	Covers outdoor use.
	Covers use in room size of 100 m ³
	Covers exposure up to 0.05 hours/event
Fuels. Liquid Scooter	Covers concentrations up to 100 %

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Refuelling.	
	Covers use up to 52 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 210.00 cm ²
	For each use event, covers amount up to 3,750 g
	Covers outdoor use.
	Covers use in room size of 100 m ³
	Covers exposure up to 0.03 hours/event
Fuels. Liquid Garden Equipment - Use.	Covers concentrations up to 100 %
	Covers use up to 26 days/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 750 g
	Covers outdoor use.
	Covers use in room size of 100 m ³
	Covers exposure up to 2.00 hours/event
Fuels. Liquid: Garden Equipment - Refuelling.	Covers concentrations up to 100 %
	Covers use up to 26 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 420.00 cm ²
	For each use event, covers amount up to 750 g
	Covers use in a one car garage (34 m ³) under typical ventilation.
	Covers use in room size of 34 m ³
	Covers exposure up to 0.03 hours/event
Fuels. Liquid: Home space heater fuel.	Covers concentrations up to 100 %
	Covers use up to 26 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 420.00 cm ²
	For each use event, covers amount up to 750 g
	Covers use in room size of 20 m ³
	Covers exposure up to 8.00 hours/event
Fuels. Liquid: Lamp oil.	Covers concentrations up to 100 %
	Covers use up to 52 days/year
	Covers use up to 1 times/day of use
	Covers skin contact area up to 210.00 cm ²
	For each use event, covers amount up to 100 g
	Covers use in room size of 20 m ³
	Covers exposure up to 0.01 hours/event

Section 2.2	Control of Environmental Exposure
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SECTION 3	EXPOSURE ESTIMATION
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Section 3.1 - Health	
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The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

Section 3.2 -Environment	
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No exposure assessment presented for the environment.

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SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	
<p>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.</p>	
Section 4.2 -Environment	
<p>No exposure assessment presented for the environment.</p>	