

SAFETY DATA SHEET

According to EC No 1907/2006 as amended as at the date of this SDS

B Ethanol

Version	Revision Date:	SDS Number:	Date of last issue: 23.11.2023
3.1	26.11.2024	800010031777	Print Date 03.12.2024

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

1.1 Product identifier

Trade name	: B Ethanol
Product code	: S8120, S8220
Registration number EU	: 01-2119457610-43
CAS-No.	: 64-17-5

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

Use of the Substance/Mixture	: For use as a component in gasoline., Fuel for use in suitably designed motor vehicles. Please refer to section 16 and/or the annexes for the registered uses under REACH.
Uses advised against	: This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier., This product is not to be used as a solvent or cleaning agent; for lighting or brightening fires; as a skin cleanser.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier	: Shell Chemicals Europe B.V. PO Box 2334 3000 CH Rotterdam Netherlands
Telephone	: +31 (0)10 441 5137 / +31 (0)10 441 5191
Telefax	: +31 (0)20 716 8316 / +31 (0)20 713 9230
Contact for Safety Data Sheet	: sccmsds@shell.com

1.4 Emergency telephone number

+44 (0) 1235 239 670
National Poison Information Centre (NVIC): Tel. nr. +31(0)88 755 8000 (24 hrs a day and 7 days a week).
Only for the purpose of informing medical personnel.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 2	H225: Highly flammable liquid and vapour.
Eye irritation, Category 2	H319: Causes serious eye irritation.

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :
PHYSICAL HAZARDS:
H225 Highly flammable liquid and vapour.
HEALTH HAZARDS:
H319 Causes serious eye irritation.
ENVIRONMENTAL HAZARDS:
Not classified as environmental hazard according to CLP criteria.

Precautionary statements : **Prevention:**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243 Take action to prevent static discharges.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P303 + P361 + P353 + P310 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Slightly irritating to the skin.

Slightly irritating to respiratory system.

Ingestion may cause drowsiness and dizziness.

Possibility of organ or organ system damage from prolonged exposure; see Section 11 for details.

Target organ(s):

Liver

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical nature : Ethanol manufactured from biological origins.
May contain a denaturant.

Components

Chemical name	CAS-No. EC-No.	Concentration (% w/w)
Ethanol	64-17-5 200-578-6	100

SECTION 4: First aid measures

4.1 Description of first aid measures

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

If inhaled : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.

In case of eye contact : Flush eyes with water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision, or swelling persist transport to the nearest medical facility for additional treatment.

If swallowed : If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

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4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.
Skin irritation signs and symptoms may include a burning sensation, redness, or swelling.
If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.
Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination.
Continued inhalation may result in unconsciousness and death.
Liver damage may be indicated by loss of appetite, jaundice (yellowish skin and eye colour), fatigue, bleeding or easy bruising and sometimes pain and swelling in the upper right abdomen.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

Persons on disulfiram (Antabuse®) therapy should be aware that the ethyl alcohol in this product is hazardous to them just as is alcohol from any source. Disulfiram reactions (vomiting, headache and even collapse) may follow ingestion of small amounts of alcohol and have also been described from skin contact.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media : Do not use water in a jet.

Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Carbon monoxide may be evolved if incomplete combustion occurs.
Ethanol burns with a smokeless blue flame that is not always visible in normal light.

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5.3 Advice for firefighters

- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Further information : If possible remove containers from the danger zone. If the fire cannot be extinguished the only course of action is to evacuate immediately. Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways.
-

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Personal precautions : 6.1.1 For non emergency personnel:
Do not breathe fumes, vapour.
Do not operate electrical equipment.
6.1.2 For emergency responders:
Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area and evacuate all personnel. Attempt to disperse the gas or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas meter. Vapour can travel for considerable distances both above and below the ground surface. Underground services (drains, pipelines, cable ducts) can provide preferential flow paths.

6.2 Environmental precautions

- Environmental precautions : Take measures to minimise the effects on groundwater. Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways. Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.

6.3 Methods and material for containment and cleaning up

- Methods for cleaning up : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of

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safely. Remove contaminated soil and dispose of safely
For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

6.4 Reference to other sections

For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet., Notify authorities if any exposure to the general public or the environment occurs or is likely to occur., For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet., Vapour may form an explosive mixture with air., Local authorities should be advised if significant spillages cannot be contained.,
Observe all relevant local and international regulations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- | | |
|-------------------------|--|
| Technical measures | : <ul style="list-style-type: none">Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet.Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.Air-dry contaminated clothing in a well-ventilated area before laundering.Prevent spillages.Turn off all battery operated portable electronic devices (examples include: cellular phones, pagers and CD players) before operating gasoline pump.Do not use as a cleaning solvent or other non-motor fuel uses.Contaminated leather articles including shoes cannot be decontaminated and should be destroyed to prevent reuse.Ensure that all local regulations regarding handling and storage facilities are followed. |
| Advice on safe handling | : <ul style="list-style-type: none">Vehicle fueling and vehicle workshop areas - Avoid inhalation of vapours and contact with skin, when filling or emptying a vehicle.Ensure that all local regulations regarding handling and storage facilities are followed.When using do not eat or drink.Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks.Never siphon by mouth.Avoid exposure.Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. |

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Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Product Transfer : Wait 2 minutes after tank filling (for tanks such as those on road tanker vehicles) before opening hatches or manholes. Wait 30 minutes after tank filling (for large storage tanks) before opening hatches or manholes. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 1 m/sec until fill pipe submerged to twice its diameter, then ≤ 7 m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations.

7.2 Conditions for safe storage, including any incompatibilities

Further information on storage stability : Drum and small container storage: Keep containers closed when not in use. Drums should be stacked to a maximum of 3 high. Packaged product must be kept tightly closed and stored in a diked (bunded) well-ventilated area, away from, ignition sources and other sources of heat. Use properly labeled and closable containers. Take suitable precautions when opening sealed containers, as pressure can build up during storage. Bulk storage tanks should be diked (bunded). Locate tanks away from heat and other sources of ignition. Cleaning, inspection and maintenance of storage tanks is a specialist operation, which requires the implementation of strict procedures and precautions.

Packaging material : Suitable material: For containers, or container linings use mild steel, stainless steel., For container paints, use epoxy paint, zinc silicate paint. Unsuitable material: PVC., Natural rubber.

Container Advice : Do not cut, drill, grind, weld or perform similar operations on or near containers. Containers, even those that have been emptied, can contain explosive vapours.

7.3 Specific end use(s)

Specific use(s) : Please refer to section 16 and/or the annexes for the registered uses under REACH.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form	Control parameters	Basis
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		of exposure)		
Ethanol	64-17-5	TLV-8hr	137 ppm 260 mg/m3	NL WG
	Further information: Carcinogenic substances, Skin notation			
Ethanol		TLV-15 min	1.000 ppm 1.900 mg/m3	NL WG
	Further information: Carcinogenic substances, Skin notation			

Biological occupational exposure limits

No biological limit allocated.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Ethanol	Workers	Inhalation	Long-term systemic effects	380 mg/m3
Ethanol	Workers	Dermal	Long-term systemic effects	343 mg/kg
Ethanol	Consumers	Inhalation	Long-term systemic effects	114 mg/m3
Ethanol	Consumers	Dermal	Long-term systemic effects	206 mg/kg/day
Ethanol	Consumers	Oral	Long-term systemic effects	87 mg/kg/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Ethanol	Water	0,96 mg/l
Ethanol	Water	2,75 mg/l
Ethanol	Sediment	3,6 mg/l
Ethanol	Soil	0,63 mg/kg
Ethanol	STP = Sewage and Treatment Plant	580 mg/l

8.2 Exposure controls

Engineering measures

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex. The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:

Use sealed systems as far as possible.

Firewater monitors and deluge systems are recommended.

Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.

Local exhaust ventilation is recommended.

Eye washes and showers for emergency use.

General Information:

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

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Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Drain down system prior to equipment break-in or maintenance.
Retain drain downs in sealed storage pending disposal or for subsequent recycle.
Do not ingest. If swallowed, then seek immediate medical assistance.

Personal protective equipment

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

The provided information is made in consideration of the PPE directive (Council Directive 89/686/EEC) and the CEN European Committee for Standardisation (CEN) standards.

Eye protection : Chemical splash goggles (chemical monogoggles).

Approved to EU Standard EN166.

Hand protection

Remarks : Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. When prolonged or frequent repeated contact occurs. Nitrile rubber gloves. For incidental contact/splash protection Neoprene, PVC gloves may be suitable.

Skin and body protection : Skin protection is not required under normal conditions of

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	use. For prolonged or repeated exposures use impervious clothing over parts of the body subject to exposure.
Respiratory protection	: If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. All respiratory protection equipment and use must be in accordance with local regulations. If air-filtering respirators are suitable for conditions of use: Select a filter suitable for organic gases and vapours [Type A boiling point > 65°C (149°F)] meeting EN14387.
Thermal hazards	: Not applicable

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: liquid
Colour	: Undyed
Odour	: alcohol-like
Odour Threshold	: Data not available
Boiling point/boiling range	: 78 °C
Flammability	
Flammability (solid, gas)	: Not applicable
Lower explosion limit and upper explosion limit / flammability limit	
Upper explosion limit / upper flammability limit	: 23,5 %(V)
Lower explosion limit / Lower flammability limit	: 3,1 %(V)
Flash point	: 13 °C

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Auto-ignition temperature	:	Data not available
Decomposition temperature	:	Data not available
Decomposition temperature	:	Data not available
pH	:	ca. 7
Viscosity	:	
Viscosity, kinematic	:	1,1 mm ² /s (40 °C) Method: ASTM D445
Solubility(ies)	:	
Water solubility	:	completely miscible (20 °C)
Solubility in other solvents	:	Data not available
Partition coefficient: n-octanol/water	:	log Pow: < 1
Vapour pressure	:	16 kPa (38,0 °C) 29 kPa (50,0 °C)
Relative density	:	Data not available
Density	:	792 kg/m ³ (15 °C) Method: ASTM D4052
Relative vapour density	:	Data not available
Particle characteristics	:	
Particle size	:	Data not available

9.2 Other information

Explosive properties	:	Classification Code: Not classified.
Oxidizing properties	:	Not applicable
Evaporation rate	:	Data not available
Conductivity	:	Electrical conductivity: > 10,000 pS/m

SECTION 10: Stability and reactivity

10.1 Reactivity

Oxidises on contact with air.

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10.2 Chemical stability

Reacts with strong oxidising agents.
Reacts with strong acids.
Stable under normal conditions of use.

10.3 Possibility of hazardous reactions

Hazardous reactions : No hazardous reaction is expected when handled and stored according to provisions

10.4 Conditions to avoid

Conditions to avoid : Avoid heat, sparks, open flames and other ignition sources.

In certain circumstances product can ignite due to static electricity.

10.5 Incompatible materials

Materials to avoid : Strong oxidising agents.
Strong acids.

10.6 Hazardous decomposition products

Hazardous decomposition products are not expected to form during normal storage.
Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11: Toxicological information

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

Information on likely routes of exposure : Exposure may occur via inhalation, ingestion, skin absorption, skin or eye contact, and accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity	: LD 50 (Rat, male and female): > 5.000 mg/kg Method: OECD Test Guideline 401 Remarks: Based on available data, the classification criteria are not met.
Acute inhalation toxicity	: LC 50 (Rat, male and female): > 20 mg/l Exposure time: 4 h Test atmosphere: vapour Method: Test(s) equivalent or similar to OECD Test Guideline 403 Remarks: Based on available data, the classification criteria are not met.

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Components:

Ethanol:

Acute oral toxicity	:	LD50 Oral (Rat, male and female): > 5.000 mg/kg Method: Test(s) equivalent or similar to OECD Test Guideline 401 Remarks: Based on available data, the classification criteria are not met.
Acute inhalation toxicity	:	LC 50 (Rat, male and female): > 124,7 mg/l Exposure time: 4 h Test atmosphere: vapour Method: Test(s) equivalent or similar to OECD Test Guideline 403 Remarks: Based on available data, the classification criteria are not met.
Acute dermal toxicity	:	Remarks: Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Product:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Remarks	:	Based on available data, the classification criteria are not met. Causes mild skin irritation.
Species	:	Rabbit
Method	:	Information given is based on data obtained from similar substances.
Remarks	:	Based on available data, the classification criteria are not met. Causes mild skin irritation.

Components:

Ethanol:

Species	:	Rabbit
Method	:	Test(s) equivalent or similar to OECD Test Guideline 404
Remarks	:	Based on data from similar materials Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation

Product:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Remarks	:	Causes serious eye irritation.
Species	:	Rabbit
Method	:	Information given is based on data obtained from similar sub-

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Remarks : stances.
: Causes serious eye irritation.

Components:

Ethanol:

Species : Rabbit
Method : Test(s) equivalent or similar to OECD Test Guideline 405
Result : Irritating to eyes.
Remarks : Based on data from similar materials

Respiratory or skin sensitisation

Product:

Species : Mouse
Method : Test(s) equivalent or similar to OECD Test Guideline 406
Remarks : Based on available data, the classification criteria are not met.

Species : Mouse
Method : Information given is based on data obtained from similar substances.
Remarks : Based on available data, the classification criteria are not met.

Components:

Ethanol:

Species : Mouse
Method : Test(s) equivalent or similar to OECD Test Guideline 406
Remarks : Based on data from similar materials
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product:

Genotoxicity in vitro : Method: OECD Test Guideline 471
Remarks: Based on available data, the classification criteria are not met.

Method: Information given is based on data obtained from similar substances.
Remarks: Based on available data, the classification criteria are not met.

Genotoxicity in vivo : Species: Mouse
Method: Test(s) equivalent or similar to OECD Test guideline 478
Remarks: Based on available data, the classification criteria are not met.

Germ cell mutagenicity- As- : This product does not meet the criteria for classification in

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Components:

Carcinogenicity

Product:

Carcinogenicity - Assessment	: This product does not meet the criteria for classification in categories 1A/1B.
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Components:

Carcinogenicity - Assessment	: This product does not meet the criteria for classification in categories 1A/1B.
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Material	Other Carcinogenicity Classification
Ethanol	IARC: Group 1: Carcinogenic to humans

Reproductive toxicity

Product:

Effects on fertility : Species: Mouse
Sex: male and female
Application Route: Oral

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Method: Equivalent or similar to OECD Test Guideline 416
Remarks: Based on available data, the classification criteria are not met.

Reproductive toxicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

Components:

Ethanol:

Effects on fertility : Species: Mouse
Sex: male and female
Application Route: Oral

Method: Equivalent or similar to OECD Test Guideline 416
Remarks: Based on available data, the classification criteria are not met.

Reproductive toxicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

STOT - single exposure

Product:

Exposure routes : Inhalation
Target Organs : Central nervous system
Remarks : Based on available data, the classification criteria are not met.
May cause drowsiness and dizziness.

Components:

Ethanol:

Remarks : Based on available data, the classification criteria are not met.

STOT - repeated exposure

Product:

Target Organs : Liver
Remarks : Based on available data, the classification criteria are not met.
Liver: can cause liver damage at chronic exposure to high concentrations.

Components:

Ethanol:

Remarks : Based on available data, the classification criteria are not met.

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Repeated dose toxicity

Product:

Species	:	Rat, male and female
Application Route	:	Oral
Method	:	Test(s) equivalent or similar to OECD Test Guideline 408
Target Organs	:	No specific target organs noted

Components:

Ethanol:

Species	:	Rat, male and female
Method	:	OECD Test Guideline 408
Remarks	:	No significant adverse effects were reported

Aspiration toxicity

Product:

Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
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Further information

Product:

Remarks	:	Classifications by other authorities under varying regulatory frameworks may exist.
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SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: Practically non toxic: LL/EL/IL50 > 100 mg/l
Toxicity to algae/aquatic plants	:	Remarks: Practically non toxic:

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LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: NOEC/NOEL > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: NOEC/NOEL > 1.0 - <= 10 mg/l

Toxicity to microorganisms :
Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

Components:

Ethanol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 14.200 mg/l
Exposure time: 96 h
Method: Test(s) equivalent or similar to OECD Guideline 203
Remarks: Based on available data, the classification criteria are not met.

Toxicity to daphnia and other aquatic invertebrates : LC50 (Ceriodaphnia dubia (water flea)): 5.012 mg/l
Exposure time: 48 h
Method: Test(s) equivalent or similar to OECD Guideline 202
Remarks: Based on available data, the classification criteria are not met.

Toxicity to algae/aquatic plants : EC50 (Chlorella vulgaris (Fresh water algae)): 675 mg/l
Exposure time: 72 h
Method: Test(s) equivalent or similar to OECD Test Guideline 201
Remarks: Based on available data, the classification criteria are not met.

Toxicity to microorganisms : Toxic threshold (Pseudomonas putida): 6.500 mg/l
Exposure time: 16 h

Toxicity to fish (Chronic toxicity) : NOEC: 245 mg/l
Exposure time: 30 d
Method: Based on quantitative structure-activity relationship (QSAR) modelling
Remarks: NOEC/NOEL > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 2 mg/l
Exposure time: 10 d
Species: Ceriodaphnia dubia (Water flea)
Method: Test(s) equivalent or similar to OECD Guideline 211
Remarks: NOEC/NOEL > 1.0 - <=10 mg/l (based on test data)

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12.2 Persistence and degradability

Product:

Biodegradability : Remarks: Oxidises rapidly by photo-chemical reactions in air.
Readily biodegradable.
Not Persistent per IMO criteria.
International Oil Pollution Compensation (IOPC) Fund definition:
"A non-persistent oil is oil, which, at the time of shipment, consists of hydrocarbon fractions, (a) at least 50% of which, by volume, distills at a temperature of 340°C (645°F) and (b) at least 95% of which, by volume, distils at a temperature of 370°C (700°F) when tested by the ASTM Method D-86/78 or any subsequent revision thereof."

Components:

Ethanol:

Biodegradability : Biodegradation: 84 %
Exposure time: 20 d
Method: Test(s) equivalent or similar to OECD Guideline 301 B
Remarks: Readily biodegradable.
Oxidises rapidly by photo-chemical reactions in air.

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Does not bioaccumulate significantly.

Components:

Ethanol:

Bioaccumulation : Remarks: Does not bioaccumulate significantly.

Partition coefficient: n-octanol/water : log Pow: < 1

12.4 Mobility in soil

Product:

Mobility : Remarks: Dissolves in water., If product enters soil, it will be highly mobile and may contaminate groundwater.

Components:

Ethanol:

Mobility : Remarks: Dissolves in water., If product enters soil, it will be highly mobile and may contaminate groundwater.

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12.5 Results of PBT and vPvB assessment

Product:

Assessment : This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB..

Components:

Ethanol:

Assessment : The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB..

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information : Films formed on water may affect oxygen transfer and damage organisms.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
Do not dispose into the environment, in drains or in water courses.
Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination.
MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.

Contaminated packaging : Drain container thoroughly.

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After draining, vent in a safe place away from sparks and fire.
Residues may cause an explosion hazard.
Do not puncture, cut, or weld uncleaned drums.
Send to drum recoverer or metal reclaimer.
Do not pollute the soil, water or environment with the waste container.

Local legislation

Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or national requirements and must be complied with.

EU Waste Disposal Code (EWC):
14 06 03 other solvents and solvent mixtures.
The number given to waste is associated with the appropriate usage. The user must decide if their particular use results in another waste code being assigned.

SECTION 14: Transport information

14.1 UN number or ID number

ADN	: 1170
ADR	: 1170
RID	: 1170
IMDG	: 1170
IATA	: 1170

14.2 UN proper shipping name

ADN	: ETHANOL (ETHYL ALCOHOL)
ADR	: ETHANOL (ETHYL ALCOHOL)
RID	: ETHANOL (ETHYL ALCOHOL)
IMDG	: ETHANOL (ETHYL ALCOHOL)
IATA	: ETHANOL (ETHYL ALCOHOL)

14.3 Transport hazard class(es)

ADN	: 3
ADR	: 3
RID	: 3
IMDG	: 3
IATA	: 3

14.4 Packing group

ADN

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Packing group	:	II
Classification Code	:	F1
Labels	:	3
CDNI Inland Water Waste Agreement	:	NST 8199 Other chemical basic substances, and mixtures, unspecified

ADR

Packing group	:	II
Classification Code	:	F1
Hazard Identification Number	:	33
Labels	:	3

RID

Packing group	:	II
Classification Code	:	F1
Hazard Identification Number	:	33
Labels	:	3

IMDG

Packing group	:	II
Labels	:	3

IATA

Packing group	:	II
Labels	:	3

14.5 Environmental hazards

ADN

Environmentally hazardous	:	no
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ADR

Environmentally hazardous	:	no
---------------------------	---	----

RID

Environmentally hazardous	:	no
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IMDG

Marine pollutant	:	no
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14.6 Special precautions for user

Remarks	:	Special Precautions: Refer to Section 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.
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14.7 Maritime transport in bulk according to IMO instruments

Pollution category	:	Z
Ship type	:	Not applicable
Product name	:	Ethyl Alcohol

Additional Information	:	Transport in bulk according to Annex II of Marpol and the IBC Code
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SECTION 15: Regulatory information

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

REACH - List of substances subject to authorisation (Annex XIV)	:	Product is not subject to Authorisation under REACH.
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	P5c	FLAMMABLE LIQUIDS
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Other regulations:

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Product is subject to Major accident risk decision 2015 (BRZO+) based on Seveso III directive (2012/18/EU).

Product meets one or more criteria set for the Dutch list of 'substances of concern' (zeer zorgwekkende stoffen (ZZS)).

15.2 Chemical safety assessment

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

SECTION 16: Other information

Full text of other abbreviations

NL WG	:	Netherlands. Law on Labour conditions - Occupational Exposure Limits
NL WG / TLV-8hr	:	Time Weighted Average
NL WG / TLV-15 min	:	Short Term Exposure Limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good La-

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boratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information : This mixture does not contain any REACH registered substances that are assessed to be a PBT or a vPvB.

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Classification of the mixture:

Flam. Liq. 2	H225
Eye Irrit. 2	H319

Classification procedure:

On basis of test data.
Expert judgement and weight of evidence determination.

Identified Uses according to the Use Descriptor System

Uses - Worker

Title : Distribution of substance
- Industrial

Uses - Worker

Title : Formulation & (re)packing of substances and mixtures
- Industrial

Uses - Worker

Title : Use as a fuel
- Industrial

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Uses - Worker

Title : Use in laboratories
- Industrial

Uses - Worker

Title : Use as a fuel
- Professional

Identified Uses according to the Use Descriptor System

Uses - Consumer

Title : Use as a fuel
- Consumer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

NL / EN

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Exposure Scenario - Worker

300000000101	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Distribution of substance- Industrial
Use Descriptor	Sector of Use: SU3, SU8, SU9 Process Categories: PROC 8a, PROC 8b, PROC 9, PROC 15 Environmental Release Categories: ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC 6C, ERC 6D, ERC7
Scope of process	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.

SECTION 2		OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1		Control of Worker Exposure	
Product Characteristics			
Physical form of product		Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article		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 Exposure			
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.	
General risk management measures applicable to all activities		No other specific measures identified.	
Section 2.2		Control of Environmental Exposure	
Substance is a unique structure.			
Alcohol.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in region:			0,004
Regional use tonnage (tonnes/year):			1,5E+04
Fraction of Regional tonnage used locally:			0,1
Annual site tonnage (tonnes/year):			1,5E+03
Maximum daily site tonnage (kg/day):			5,0E+03
Frequency and Duration of Use			
Emission Days (days/year):			300

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Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	1,0E-02
Release fraction to wastewater from process (initial release prior to RMM):	3,0E-03
Release fraction to soil from process (initial release prior to RMM):	2,0E-04
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process re-release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	90
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	90
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	90
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	9.231
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Available hazard data do not enable the derivation of a DNEL for eye irritant effects. Risk Management Measures are based on qualitative risk characterisation.	

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Section 3.2 -Environment

Used ECETOC TRA model.

SECTION 4

GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE 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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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Exposure Scenario - Worker

300000000102	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Formulation & (re)packing of substances and mixtures- Industrial
Use Descriptor	Sector of Use: SU3, SU10 Process Categories: PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 14, PROC 15 Environmental Release Categories: ERC2
Scope of process	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	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 Exposure	
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.
General risk management measures applicable to all activities	No other specific measures identified.
Section 2.2	Control of Environmental Exposure
Substance is a unique structure.	
Alcohol.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0,7
Regional use tonnage (tonnes/year):	2,8E+06
Fraction of Regional tonnage used locally:	0,1
Annual site tonnage (tonnes/year):	2,8E+05
Maximum daily site tonnage (kg/day):	9,3E+05
Frequency and Duration of Use	

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Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	2,0E-03
Release fraction to wastewater from process (initial release prior to RMM):	1,0E-04
Release fraction to soil from process (initial release prior to RMM):	3,0E-05
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	90
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	90
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	90
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,4E+06
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	
Available hazard data do not enable the derivation of a DNEL for eye irritant effects.	

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Risk Management Measures are based on qualitative risk characterisation.

Section 3.2 -Environment

Used ECETOC TRA model.

SECTION 4

GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE 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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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Exposure Scenario - Worker

300000000103	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 16 Environmental Release Categories: ERC7
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	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article	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 Exposure		
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.	
General risk management measures applicable to all activities	No other specific measures identified.	
Section 2.2	Control of Environmental Exposure	
Substance is a unique structure.		
Alcohol.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region:		0,1
Regional use tonnage (tonnes/year):		3,0E+04
Fraction of Regional tonnage used locally:		0,02
Annual site tonnage (tonnes/year):		600
Maximum daily site tonnage (kg/day):		1,7E+03
Frequency and Duration of Use		
Emission Days (days/year):		350
Environmental factors not influenced by risk management		
Local freshwater dilution factor:		10

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Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	5,0E-03
Release fraction to wastewater from process (initial release prior to RMM):	5,8E-04
Release fraction to soil from process (initial release prior to RMM):	1,2E-03
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process re-release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of \geq (%)	90
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	90
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	90
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,1E+05
Conditions and Measures related to external treatment of waste for disposal	
Combustion emissions limited by required exhaust emission controls.	
Waste combustion emissions considered in regional exposure assessment.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Available hazard data do not enable the derivation of a DNEL for eye irritant effects. Risk Management Measures are based on qualitative risk characterisation.	

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Section 3.2 -Environment

Used ECETOC TRA model.

SECTION 4

GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE 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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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Exposure Scenario - Worker

300000000104	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 15 Environmental Release Categories: ERC2, ERC4
Scope of process	Use of the substance within laboratory settings, including material transfers and equipment cleaning.

SECTION 2		OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1		Control of Worker Exposure	
Product Characteristics			
Physical form of product		Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article		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 Exposure			
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.	
General risk management measures applicable to all activities		No other specific measures identified.	
Section 2.2		Control of Environmental Exposure	
Substance is a unique structure.			
Alcohol.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in region:		0,1	
Regional use tonnage (tonnes/year):		500	
Fraction of Regional tonnage used locally:		0,1	
Annual site tonnage (tonnes/year):		50	
Maximum daily site tonnage (kg/day):		167	
Frequency and Duration of Use			
Emission Days (days/year):		365	
Environmental factors not influenced by risk management			
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	

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Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	2,0E-02
Release fraction to wastewater from process (initial release prior to RMM):	2,0E-02
Release fraction to soil from process (initial release prior to RMM):	6,0E-03
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of \geq (%)	90
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	90
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	90
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	5,9E+03
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Available hazard data do not enable the derivation of a DNEL for eye irritant effects. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment

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Used ECETOC TRA model.

SECTION 4

GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE 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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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Exposure Scenario - Worker

300000000105	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 16 Environmental Release Categories: ERC9a, ERC9b
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	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article	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 Exposure		
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.	
General risk management measures applicable to all activities	No other specific measures identified.	
Section 2.2	Control of Environmental Exposure	
Substance is a unique structure.		
Alcohol.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region:		0,1
Regional use tonnage (tonnes/year):		3,8E+05
Fraction of Regional tonnage used locally:		0,002
Annual site tonnage (tonnes/year):		600
Maximum daily site tonnage (kg/day):		1,7E+03
Frequency and Duration of Use		
Emission Days (days/year):		350
Environmental factors not influenced by risk management		
Local freshwater dilution factor:		10

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Local marine water dilution factor:	100
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	90
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	90
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	90
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,1E+05
Conditions and Measures related to external treatment of waste for disposal	
Combustion emissions limited by required exhaust emission controls. Waste combustion emissions considered in regional exposure assessment.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. Available hazard data do not enable the derivation of a DNEL for eye irritant effects. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment	
Used ECETOC TRA model.	

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
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EXPOSURE 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	
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.	
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.	
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.	
If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.	

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Exposure Scenario - Consumer

300000000219	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC13 Environmental Release Categories: ERC9a, ERC9b
Scope of process	Covers consumer uses in liquid fuels.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Section 2.1	Control of Consumer Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure > 10 Pa
Concentration of the Sub- stance in Mixture/Article	Unless stated otherwise.
	Covers concentration up to (%): 100 %
Amounts Used	
Unless stated otherwise.	
For each use event, covers amount up to (l):	100
Frequency and Duration of Use	
Unless stated otherwise.	
covers use up to (times/day of use):	0,14
Other Operational Conditions affecting Exposure	
Covers outdoor use.	
Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
General measures applica- ble to all Product Catego- ries.	No risk management measures required if the substance in the mixture is below the classification threshold.
General measures (eye irritants).	Avoid direct eye contact with product, also via contamination on hands.

Section 2.2	Control of Environmental Exposure
Substance is a unique structure.	
Alcohol.	
Readily biodegradable.	
Amounts Used	
Fraction of Regional tonnage used locally:	0,002
Frequency and Duration of Use	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100

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Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	90
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	
Conditions and Measures related to external treatment of waste for disposal	
Combustion emissions limited by required exhaust emission controls. Waste combustion emissions considered in regional exposure assessment.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated. Available hazard data do not enable the derivation of a DNEL for eye irritant effects. Risk Management Measures are based on qualitative risk characterisation.	

Section 3.2 -Environment
Used ECETOC TRA model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE 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
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.