

Safety Data Sheet

EU SDS format according to COMMISSION REGULATION (EU) 2020/878 Release Date: 2025-06-10 Revision Date: 2025-06-03 Replaces version of: 2021-01-01 Version: 2.0

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

1.1. Product identifier

Product form : Mixture

Trade name : Gasoline (all types)

Product Type : Fuels

Product group : Commercial Product

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

1.2.1. Relevant identified uses

Main Use Category : Industrial use, Professional use, Consumer use

Specification for professional/industrial use : Use in closed systems

Widespread dispersive use

Use of substance/mixture : Fuel components

Motor fuel Coatings, thinners

Coatings, thinners

Detergent/washing agents and additives Rubber production and processing

Function or use category : Fuels, Coatings and paints, Thinners, Pickling solutions, Cleaning/washing agents and

additives, Polymer preparations and compounds

Title	Use Descriptors
Distribution of the substance (Ref. SE: 01a)	SU3, PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC15, ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7, ESVOC SPERC 1.1b.v1
Formulation and (re)packaging of substances and mixtures (Ref. SE: 02)	SU3, SU10, PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC15, ERC2, ESVOC SPERC 2.2.v1
Use in coatings (Ref. SE: 03a)	SU3, PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC15, ERC4, ESVOC SPERC 4.3a.v1
Detergent/washing agents and additives (Ref. SE: 04a)	SU3, PROC1, PROC2, PROC3, PROC8a, PROC8b, ERC4, ESVOC SPERC 4.4a.v1
Use as fuel (Ref. SE: 12a)	SU3, PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16, ERC7, ESVOC SPERC 7.12a.v1
Rubber production and processing (Ref. SE: 19)	SU3, SU10, SU11, PROC1, PROC2, PROC3, PROC8b, PROC9, PROC15, ERC1, ERC4, ERC6d, ESVOC SPERC 4.7a.v1
Use as fuel (Ref. SE: 12b)	SU22, PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16, ERC9a, ERC9b, ESVOC SPERC 9.12b.v1
Use as fuel (Ref. SE: 12c)	SU21, PC13, ERC9a, ERC9b, ESVOC SPERC 9.12c.v1

Full text of the descriptors of use : see section 16

1.2.2. Uses advised against

The relevant uses are listed above. No other uses are recommended unless an assessment has been conducted, prior to the start of such use, demonstrating that the risks associated with that use are controlled

1.3. Details of the supplier of the safety data sheet

Producer

JEnergy S.p.A.
Via Adolfo Ravà, 49
IT 00142 Rome, Italy
T +39 06590101, F +39 065414923
reach@jenergyspa.it

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1.4. Emergency telephone number

Emergency number : +39 06590101

> CAV "Pediatric Hospital Bambino Gesù" - Roma - +39 06 6859 3726 - 24h Hospital company "University of Foggia" - Foggia - +39 800 18 3459 - 24h

Hospital company "A. Cardarelli" - Napoli - +39 081 5453 333 - 24h CAV "Policlinico Umberto I" - Roma - +39 06 4997 8000 - 24h CAV "Policlinico A. Gemelli" - Roma - +39 06 3054 343- 24h

Hospital company "Careggi" Medical Toxicology Department - Firenze - +39 055 7947

819 - 24h

CAV "National" - Pavia - +39 0382 24444 - 24h

Hospital company "Niguarda Ca' Granda" - Milano - +39 02 6610 1029 - 24h Hospital company "Papa Giovanni XXIII" - Bergamo - +39 800 88 3300 - 24h

Hospital company Verona - Verona - +39 800 01 1858 - 24h

SECTION 2: Hazard Identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS / CLP]

Flammable liquids, category 1 H224 Skin corrosion/irritation, category 2 H315 Germ cell mutagenicity, category 1B H340 Carcinogenicity, category 1A H350 Reproductive toxicity, category 2 H361fd Specific Target Organ Toxicity - Single Exposure, H336

Category 3 - Narcosis

H304 Aspiration hazard, category 1 Hazardous to the aquatic environment – Chronic hazard, H411

category 2

Full text of H and EUH phrases: see section 16

Adverse physicochemical effects on human health and the environment

Highly flammable liquid and vapors. Irritating to the skin. High concentrations of vapours may cause: migraine, nausea, dizziness. Aspiration into the lungs may cause chemical pneumonia. May cause cancer. May cause genetic alterations. Suspected of demaging fertility. Suspected of demaging the unboarn child. Toxic to aquatic organisms, may cause long-term negative effects for the aquatic environment. For specific information on the toxicological characteristics and product classification, refer to section 11 and/or 12 of the data sheet.

2.2. Label elements

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

Hazard pictograms (CLP)









GHS07

GHS08

GHS09

Signal word (CLP) : Danger

Contains Petrol (low boiling point naphtha - unspecified) (benzene > 0,1 % p); Ethyl t-butyl ether; 2-

methyl-2-methoxybutane; Tert-amyl methyl ether

Hazard statements (CLP) : H224 - Extremely flammable liquid and vapours.

H304 - May be fatal if swallowed and enters airways.

H315 - Causes skin irritation.

H336 - May cause drowsiness or dizziness.

H340 - May cause genetic defects.

H350 - May cause cancer.

H361fd - Suspected of demaging fertility. Suspected of demaging the unborn child.

H411 - Toxic to aquatic life with long-lasting effects.

Precautionary statements (CLP) : P201 - Obtain special instructions before use.

P210 - Keep away from heat sources, hot surfaces, sparks, open flames, or other ignition

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sources. No smoking.

P280 - Wear protective gloves, protective clothing, eye protection, ande face protection P301+P310 - IF SWALLOWED: immediately call a POISON CENTER or doctor/physician.

P312 - If you feel unwell, contact a POISON CONTROL CENTER or doctor.

P331 - DO NOT induce vomiting.

P370+P378 - In case of a fire: use dry chemical powder to extinguish.
P403+P233 - Keep the container tightly closed and in a well-ventilated place.

P501 - Dispose of the product and container in accordance with applicable regulations (Legislative Decree 152/2006 and subsequent amendments).

2.3. Other hazards (not relevant to classification)

Hazards not resulting in classification:

: The product can be electrostatically charged: always use grounding connections when transferring it from one container to another. The vapors may form flammable and explosive mixture with air. The product is heavier than air, and in the event of spills, vapors may accumulate in confined and low-lying areas, where they may pose a risk of fire due to accidental ignition.

This substance/mixture doesn't fulfil the PBT criteria of the REACH Regulation, Annex XIII
This substance/mixture doesn't fulfil the vPvB criteria of the REACH Regulation, Annex XIII
Does not contain PBT and/or vPvB substances ≥ 0.1% evaluated in accordance with Annex XIII of REACH

The mixture does not contain a substance(s) included in the list established in accordance with Article 59(1) of the REACH Regulation for having endocrine-disrupting properties, nor any substance(s) identified as having endocrine-disrupting properties(s) according to the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration of 0.1% or more

SECTION 3: Composition/Information on Ingredients

3.2. Mixtures

Notes

: Composition/information on ingredients:

Mixrure of hydrocarbons

Additives

Name	Product identifier	%	Classification according to Regulation (EC) No 1272/2008 [EU- GHS / CLP]
Gasoline (low boiling point naphtha - unspecified) (benzene > 0,1 % w/w)	CAS Number: 86290-81-5 EC Number: 289-220-8 EC Index No.: 649-378-00-4 REACH No.: 01-2119471335- 39	≥ 85 < 100	Flam. Liq. 1, H224 Skin Irrit. 2, H315 Muta. 1B, H340 Carc. 1B, H350 Repr. 2, H361fd STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
tert-butylmethyl ether; MTBE; 2-methoxy-2-methylpropane (Additive)	CAS Number: 1634-04-4 EC Number: 216-653-1 EC Index No.: 603-181-00-X REACH no.: 01-2119452786- 27	≥ 0.1 < 5	Flam. Liq. 2, H225 Skin Irrit. 2, H315
Ethyl t-butyl ether (Additive)	CAS Number: 637-92-3 EC Number: 211-309-7 EC Index No.: N/A REACH no.: 01-2119452785- 29-0023	≥ 0.1 < 5	Flam. Liq. 2, H225 STOT SE 3, H336

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Name	Product identifier	%	Classification according to Regulation (EC) No 1272/2008 [EU- GHS / CLP]
2-methyl-2-methoxybutane; Tert-amyl methyl ether (Additive)	CAS Number: 994-05-8 EC Number: 213-611-4 EC Index No.: 603-213-00-2 REACH no.: 01-2119453236-	≥ 0.1 < 5	Flam. Liq. 2, H225 Acute Tox. 4 (oral), H302 STOT SE 3, H336
ethanol, ethyl alcohol (Additive)	CAS Number: 64-17-5 EC Number: 200-578-6 EC Index No.: 603-002-00-5 REACH No.: 01-2119457610- 43	≥ 0.1 < 5	Flam. Liq. 2, H225
Toluene (Constituent)	CAS Number: 108-88-3 EC Number: 203-625-9 EC Index No.: 601-021-00-3 REACH no.: 01-2119471310- 51	≥1<5	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361d STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 3, H412
benzene (Constituent)	CAS Number: 71-43-2 EC Number: 200-753-7 EC Index No.: 601-020-00-8	≥ 0.1 < 1	Flam. Liq. 2, H225 Carc. 1A, H350 Muta. 1B, H340 STOT RE 1, H372 Asp. Tox. 1, H304 Eye Irrit. 2, H319 Skin Irrit. 2, H315
n-Hexane (Constituent)	CAS Number: 110-54-3 EC Number: 203-777-6 EC Index No.: 601-037-00-0 REACH no.: 01-2119480412-	≥ 0.1 < 5	Flam. Liq. 2, H225 Repr. 2, H361f Asp. Tox. 1, H304 STOT RE 2, H373 Skin Irrit. 2, H315 STOT SE 3, H336 Aquatic Chronic 2, H411

Full text of H and EUH phrases: see section 16

SECTION 4: First Aid Measures

4.1 Desi	crintion	of first ai	d measures

General first aid measures : IF exposure or potential exposure occurs, seek medical attention. If spontaneous or improperly induced vomiting, transport the person to a hospital to asses the risk of

aspiration into the lungs.

First aid measures in case of inhalation

: Move the person to a well-ventilated area, keep them warm and at rest. If the casualty is unconscious and not breathing: ensure the airway is clear and begin artificial respiration by trained personnel.. If necessary, perform external cardiac massage and seek medical attention. If the casualty is breathing: Keep in a lateral safety position. Administer oxygen if required.

If hydrogen sulfide (H2S) inhalation is suspected, rescuers must wear appropriate respiratory protective equipment, safety harness, and lifelines, and follow estabilished rescue procedures. Immediately transfer the casualty to a hospital. Begin artificial respiration immediately if breathing has stopped. Administer oxygen if necessary.

First aid measures in case of skin contact

Remove contaminated footwear and clothing and dispose of them safely. Wash skin with soap and water. If inflammation or irritation persists, seek medical attention. When using high-pressure equipment, product injection injuries may occur. Immediately transfer the injured person to the hospital. Do not wait for symptoms to appear.

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First aid measures in case of eye contact

: Remove contact lenses, if present, if the situation allows the operation to be carried out easily. Rinse thoroughly for at least 15 minutes. Keep the eyelids wide open. If irritation, blurred vision, or persistent swelling, consult a medical professional.

First aid measures in case of ingestion

: Do not induce vomiting to prevent the risk of aspiration. If the person is conscious, rinse the mouth with water without swallowing. Keep at rest. Call a doctor or take to the hospital. If the person is unconscious, place them in the recovery position. In case of spontaneous vomiting, keep the head low, to reduce the risk of aspiration into the lungs.

4.2. Main symptoms and effects, both acute and delayed

Symptoms/effects

Symptoms/effects in case of inhalation

Symptoms/effects in case of skin contact

Symptoms/effects in case of contact with eyes Symptoms/effects in case of ingestion

Symptoms/effects after intravenous administration Chronic symptoms

: Potential chronic health effects should be considered.

: Exposure to high concentrations of vapours, particularly in closed or poorly ventilated environments, may cause respiratory irritation, nausea, discomfort and dizziness.

: Causes skin irritation. Repeated and prolonged contact may cause skin redness, irritation and contact dermatitis due to degreasing effect.

: May cause mild irritation.

: Ingestion of the fluid may result in aspiration into the lungs with the risk of chemical pneumonitis.

: No information available.

: May cause cancer. May cause genetic defects. Suspected of damaging fertility or the unborn child.

4.3. Indication of immediate medical attention and special treatment needed

Seek medical attention if the injured person is in an altered state of consciousness, or if symptoms do not disappear. If swallowed, always assume aspiration has occured. Immediately transport the injured person to the hospital. Do not wait for symptoms to appear. If required, perform gastric lavage ONLY under qualified medical supervision.

SECTION 5: Firefighting Measures

5.1. Extinguishing media

Suitable extinguishing media

: Small fires: carbon dioxide, dust, foam, sand or earth. Large fires: foam or water spray. These media should only be used by properly trained personnel. Other extinguishing gases (according to regulations).

Unsuitable extinguishing media

: Do not use direct water jets. These can cause splashing, and extend the fire. Avoid the simultaneous use of foam and water on the same surface, as water destroys the foam.

5.2. Special hazards arising from the substance or mixture

Fire hazard

Explosion hazard

: Highly flammable liquid and vapors.

: Vapors are flammable and may form flammable and explosive mixtures with air. Heat may cause pressure to increase in tanks exposed to fire, leading to explotion, fire spread, and risk of burns and injury.

Hazardous combustion products in the event of fire

 Incomplete combustion could generate a complex mixture of airborne solid and liquid particles and gases, including carbon monoxide and NOx (harmful/toxic gases).
 Oxygenated compounds (aldehydes, etc.). Solid particulate matter. Combustion product include sulphur oxides (SO2 and SO3) and hydrogen sulphide (H2S).

5.3. Advice for firefighters

Extinction instructions

: If possible, block leaks at the source. Remove undamaged containers from the danger zone if it is possible to do so without danger. Cover any spills that have not caught fire with foam or earth. Use water jets to cool surfaces and containers exposed to flame or heat. If the fire cannot be controlled, evacuate the area.

Special equipment for fire-fighters

: Personal protective equipment for firefighters (see also section 8). In the event of a fire or in confined or poorly ventilated spaces, wear full flame retardant protective clothing and a self-contained breathing apparatus with a full-face mask working under positive pressure. EN 15090. EN 443. EN 469. EN 659.

Other information

: In case of a fire, do not disperse wastewater, residual product and other contaminated materials, but collect separately and treat appropriately.

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SECTION 6: Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General measures

: If safety conditions permit, stop or contain the leak at source. Eliminate all sources of ignition if safety conditions permit (e.g.: electricity, sparks, fires, torches). Avoid direct contact with the released material. Stay upwind. Use only non-sparking tools. In case of large spills, warn residents of areas downwind. If hazardous levels of hydrogen sulfide (H₂S) are suspected or confirmed in the spilled/released product, additional or specific actions may be necessary, such as restricted access, the use of specialized personal protective equipment (PPE), adoption of specific procedures, and dedicated personnel training

6.1.1. For those who do not intervene directly

Protection media Emergency procedures

- : See section 8.
- : Notify the emergency response teams. Except in the case of minor spills, the feasibility of the interventions must always be assessed and, if possible, approved by qualified and competent personnel responsible for managing the emergency.

6.1.2. For those who intervene directly

Protection media

Minor spills: Normal anti-static workwear is generally appropriate. Major spills: Full chemical-resistant protective clothing made of antistatic material. Chemical-resistant work gloves, especially those offering protection against aromatic hydrocarbons. Gloves made of PVA (polyvinyl alcohol) are not water-resistant and are not suitable for emergency use. Antistatic, chemical-resistant and non-slip safety shoes or boots. Safety helmet. Protective goggles and/or face protection if splashing or eye contact is possible or foreseeable. Respiratory protection: A half or full-face mask with filter(s) for organic vapours (AX) and, where applicable, for hydrogen sulfide (H2S (B)), or a self-contained breathing apparatus may be used, depending on the extent of the spill and the anticipated exposure levels. If the situation cannot be fully assessed or if there is a risk of oxygen deficiency, only a self-contained breathing apparatus should be used.

Emergency procedures

: In the event of major spills, alert residents in areas downwind. Notify the competent authorities in accordance with current regulations.

6.2. Environmental precautions

Prevent the product from accumulating in confined spaces or below ground level. Avoid discharge into sewers, watercourses, or any uncontrolled release into the environment. In the event of contamination of environmental matrices (soil, subsoil, surface water, or groundwater), remove contaminated soil where possible and, in any case, treat the affected matrices in accordance with Legislative Decree 152/06 and its subsequent amendments (as well as any applicable local regulations). The site must have a spill response plan in place to ensure that adequate safeguards are available to minimise the impact of accidental releases. Risk of contamination of drinking water sources (groundwater).

6.3. Methods and materials for containment and remediation

Methods for containment

: Contain and absorb the product using earth, sand, or another suitable non-flammable absorbent material. Collect the product and any contaminated material in impermeable, hydrocarbon-resistant containers. Recover or dispose of the material in accordance with Legislative Decree 152/06 and subsequent amendments. Large spills may be carefully covered with foam, if available, to prevent fire hazards. Do not use direct water jets. Inside buildings or confined spaces, ensure adequate ventilation. If in water: In case of small spills in enclosed water bodies (e.g.: in ports),remove the spilled product from the surface using suitable absorbent materials. Collect the product and anyresultingwaste in waterproof and hydrocarbon-resistant containers. Send for recovery or disposal in accordance with Legislative Decree 152/06 and subsequent amendments and additions. If possible, contain larger spills into the water by using floating booms or other appropriate mechanical means. If this is not possible, isolate the area and prevent fire or explosion risks for vessels and other structures, taking into account the wind direction and speed, until the product is fully dispersed.

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Other information

: Provide a containment structure around storage facilities to prevent soil and water contamination in the event of leaks. Do not use solvents or dispersing agents unless expressly recommended by an expert and, where required, authorized by the competent local authorities. The recommended measures are based on the most probable spill scenarios for this product. Local conditions (wind, air temperature wave and current direction and speed) may significantly influence the choice of action to be taken. The concentration of H2S at the top of tanks or containers can reach hazardous levels, especially in cases of prolonged storage. This situation is particularly relevant for operations involving direct exposure to vapors inside tanks or other confined spaces. The spillage of a limited amount of product, particularly in open air, where vapours disperse more quickly, presents a dynamic scenario that can presumably limit exposure to dangerous concentrations. Since H2S is denser than ambient air, a possible exception may involve the accumulation of hazardous concentrations in specific areas such as ditches, depressions or enclosed spaces. In all these circumstances, however, the correct intervention must be assessed on a case-by-case basis.

6.4. Reference to other sections

For further information, see section 8: "Exposure control-personal protection". For further information, see section 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Precautions for safe handling

: Obtain special instructions before use. Ensure that all provisions regarding handling and storage of flammable products are properly complied with. Do not use electrical appliances (mobile phones, etc.) that are not approved for use according to the risk characteristics of the area. Do not use compressed air when filling, draining, or handling. Keep away from heat sources/sparks/open flames/hot surfaces. Use and store only outdoors or in a wellventilated area. During transfer and mixing operations, ensure proper grounding of equipment and avoid the accumulation of electrical charges. Use only bottom loading for tanks, in accordance with the relevant European legislation. Before accessing storage tanks and starting any intervention in confined spaces (e.g. tunnels), carry out adequate cleaning, check the atmosphere and verify oxygen content and flammability levels. Empty containers may contain combustible product residues. Do not puncture, cut, grind, weld, braze, burn, or incinerate unreclaimed empty containers or drums. The product can release hydrogen sulphide: carry out a specific assessment of inhalation risks due to the presence of hydrogen sulphide in the free spaces of tanks, confined spaces, residues and excess product, sludge and wastewater of tanks, and in all situations of unintentional release, to determine the best control according to local conditions. Use only in well-ventilated areas. Avoid contact with skin and eyes during handling. Use the required personal protective equipment.

Hygiene measures

Use appropriate personal protective equipment if necessary. Do not breathe fumes/mists/vapors. Avoid contact with skin. Wash hands thoroughly after handling. Do not ingest. Do not smoke. Do not drink or eat while using. Contaminated material must not accumulate in the workplace and should never be stored in pockets. Do not reuse clothing that is still contaminated. Wash hands and other exposed skin areas with mild soap and water before eating, drinking, smoking and when leaving the workplace. Keep work clothing separate from civilian clothing. Wash them separately.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

Incompatible products Incompatible materials

- : Store in a dry and well-ventilated place. Do not smoke. Keep away from open flames, hot surfaces and ignition sources. Vapours are heavier than air, and may spread along the ground. Pay particular attention to accumulation in pits and confined spaces.
- : Keep away from: strong oxidizing agents.
- : Some synthetic materials may not be suitable for containers or coatings based on the characteristics of the material and the intended use. Check compatibility with the manufacturer.

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Storage location	: The structure of the storage area, the characteristics of the tanks, the equipment and the operating procedures must comply with the relevant legislation at European, national or local level. Storage facilities/areas must be equipped with appropriate systems to prevent soil and water contamination in the event of leaks or spills. The cleaning, inspection and maintenance of the internal structure of the storage tanks must be carried out by qualified and properly equipped personnel, as established by national, local, or company regulations.
Packaging and containers:	: If the product is supplied in containers: Keep containers tightly closed and correctly labeled. Store only in the original container or in a container suitable for the type of product. Keep away from sunlight and other heat sources. Light hydrocarbon vapours may accumulate at the top of the containers. Open slowly to control any pressure release. Empty containers may contain flammable product residues. Do not weld, braze, drill, cut, or incinerate empty containers unless they have been properly cleaned/decontaminated.
Packaging Materials	: For the manufacture of containers or internal coatings, use approved material suitable for the use of the product. Use mild steel and stainless steel for containers and coatings. Some synthetic materials may not be suitable for containers or coatings based on the characteristics of the material and the intended uses. Verify compatibility with the manufacturer
7.3. Special end-uses	

7.3. Special end-uses

See the list of identified uses and exposure scenarios in the annex to the safety data sheet.

SECTION 8: Exposure Controls /Personal Protective

8.1. Control parameters

8.1.1 National occupational and biological exposure limit values

Gasoline (Low Boiling Point Naphtha - Unspecified) (Benzene > 0.1% w) (86290-81-5)		
Belgium - Occupational exposure limit values		
OEL TWA	900 mg/m³	
	300 ppm	
OEL STEL	1500 mg/m³	
	500 ppm	
Ireland - Occupational exposure limit values		
OEL TWA	300 ppm	
DEL STEL 500 ppm		
Netherlands - Occupational exposure limit values		
TGG-8u (OEL TWA)	240 mg/m³	
TGG-15min (OEL STEL)	480 mg/m³	
Romania - Occupational exposure limit values		
OEL TWA	300 mg/m³	
OEL STEL	500 mg/m³	
Spain - Occupational exposure limit values		
VLA-ED (OEL TWA)	300 ppm	
Sweden - Occupational exposure limit values		
NGV (OEL TWA)	180 mg/m³	
	50 ppm	
KGV (OEL STEL)	250 mg/m³	
	75 ppm	

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Gasoline (Low Boiling Point Naphtha - Unspecified) (Benzene > 0.1% w) (86290-81-5)		
Norway - Occupational exposure limit values		
Grenseverdi (OEL TWA)	500 mg/m³	
	100 ppm	
USA - ACGIH - Occupational Exposure Limit Values	5	
ACGIH® TLV® TWA	300 ppm	
ACGIH® TLV® STEL	500 ppm	
tert-butylmethyl ether; MTBE; 2-methoxy-2-m	ethylpropane (1634-04-4)	
EU - Indicative Occupational Exposure Limit Value	(IOEL)	
IOEL TWA	183.5 mg/m³	
	50 ppm	
IOEL STEL	367 mg/m³	
	100 ppm	
Austria - Occupational exposure limit values	1	
MAK (OEL TWA)	50 ppm	
MAK (OEL STEL)	100 ppm	
Belgium - Occupational exposure limit values		
OEL TWA	40 ppm	
Denmark - Occupational exposure limit values		
OEL TWA	40 ppm	
OEL STEL	80 ppm	
Germany - Occupational exposure limit values (TRGS 900)		
AGW (OEL TWA)	50 ppm	
AGW (OEL C) [ppm]	75 ppm	
Italy - Occupational exposure limit values		
OEL TWA	183.5 mg/m³	
	50 ppm	
OEL STEL	367 mg/m³	
	100 ppm	
Spain - Occupational exposure limit values		
VLA-ED (OEL TWA)	40 ppm	
Sweden - Occupational exposure limit values		
NGV (OEL TWA)	30 ppm	
KGV (OEL STEL)	60 ppm	
United Kingdom - Occupational exposure limit values		
WEL TWA (OEL TWA)	25 ppm	
WEL STEL (OEL STEL)	75 ppm	
Switzerland - Occupational exposure limit values		
MAK (OEL TWA)	50 ppm	
KZGW (OEL STEL)	75 ppm	

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tert-butylmethyl ether; MTBE; 2-methoxy-2-methylpropane (1634-04-4)		
USA - ACGIH - Occupational Exposure Limit Values	S	
ACGIH® TLV® TWA	50 ppm	
Observation (ACGIH)	ACGIH 2015	
Ethyl T-Butyl Ether (637-92-3)		
Belgium - Occupational exposure limit values		
OEL TWA	21 mg/m³	
	5 ppm	
Finland - Occupational exposure limit values		
HTP (OEL TWA)	25 mg/m³	
	5 ppm	
Germany - Occupational exposure limit values (TR	GS 900)	
AGW (OEL C) [ppm]	75 ppm	
Ireland - Occupational exposure limit values		
OEL TWA	25 ppm	
Poland - Occupational exposure limit values		
NDS (OEL TWA)	100 mg/m³	
Spain - Occupational exposure limit values		
VLA-ED (OEL TWA)	21 mg/m³	
	5 ppm	
2-methyl-2-methoxybutane; Terz-amyl methyl	ether (994-05-8)	
Belgium - Occupational exposure limit values		
OEL TWA	85 mg/m³	
	20 ppm	
Finland - Occupational exposure limit values		
HTP (OEL TWA)	84 mg/m³	
	20 ppm	
USA - ACGIH - Occupational Exposure Limit Values		
ACGIH® TLV® TWA	20 ppm (ACGIH 2021)	
ethanol, ethyl alcohol (64-17-5)		
Austria - Occupational exposure limit values		
MAK (OEL TWA)	1900 mg/m³	
	1000 ppm	
MAK (OEL STEL)	3800 mg/m³	
	2000 ppm	
Belgium - Occupational exposure limit values		
OEL TWA	1907 mg/m³	
	1000 ppm	

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ethanol, ethyl alcohol (64-17-5)		
Denmark - Occupational exposure limit values		
OEL TWA	1900 mg/m³	
	1000 ppm	
OEL STEL	3800 mg/m³	
	2000 ppm	
Finland - Occupational exposure limit values		
HTP (OEL TWA)	1900 mg/m³	
	1000 ppm	
HTP (OEL STEL)	2500 mg/m³	
	1300 ppm	
France - Occupational exposure limit values		
VME (OEL TWA)	1900 mg/m³	
	1000 ppm	
VLE (OEL C/STEL)	9500 mg/m³	
	5000 ppm	
Germany - Occupational exposure limit values (TR	GS 900)	
AGW (OEL TWA)	380 mg/m³	
	200 ppm	
AGW (OEL C)	1520 mg/m³	
AGW (OEL C) [ppm]	800 ppm	
Hungary - Occupational exposure limit values		
AK (OEL TWA)	1900 mg/m³	
CK (OEL STEL)	7600 mg/m³	
Ireland - Occupational exposure limit values		
OEL STEL	1000 ppm	
Latvia - Occupational exposure limit values		
OEL TWA	1000 mg/m³	
Netherlands - Occupational exposure limit values		
TGG-8u (OEL TWA)	260 mg/m³	
TGG-15min (OEL STEL)	1900 mg/m³	
Poland - Occupational exposure limit values		
NDS (OEL TWA)	1900 mg/m³	
Romania - Occupational exposure limit values		
OEL TWA	1900 mg/m³	
	1000 ppm	
OEL STEL	9500 mg/m³	
	5000 ppm	
Spain - Occupational exposure limit values		
VLA-EC (OEL STEL)	1910 mg/m³	

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ethanol, ethyl alcohol (64-17-5)		
	1000 ppm	
Sweden - Occupational exposure limit values		
NGV (OEL TWA)	1000 mg/m³	
	500 ppm	
KGV (OEL STEL)	1900 mg/m³	
	1000 ppm	
United Kingdom - Occupational exposure limit valu		
WEL TWA (OEL TWA)	1920 mg/m³	
	1000 ppm	
Switzerland - Occupational exposure limit values		
MAK (OEL TWA)	960 mg/m³	
	500 ppm	
KZGW (OEL STEL)	1920 mg/m³	
	1000 ppm	
USA - ACGIH - Occupational Exposure Limit Values	5	
ACGIH® TLV® STEL	1900 mg/m³	
	1000 ppm	
Toluene (108-88-3)		
EU - Indicative Occupational Exposure Limit Value	(IOEL)	
IOEL TWA	192 mg/m³	
	50 ppm	
IOEL STEL	384 mg/m³	
	100 ppm	
Austria - Occupational exposure limit values		
MAK (OEL TWA)	190 mg/m³	
	50 ppm	
MAK (OEL STEL)	380 mg/m³	
	100 ppm	
Belgium - Occupational exposure limit values		
OEL TWA	77 mg/m³	
	20 ppm	
OEL STEL	384 mg/m³	
	100 ppm	
Denmark - Occupational exposure limit values		
OEL TWA	94 mg/m³	
	25 ppm	
OEL STEL	188 mg/m³	
	50 ppm	
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Toluene (108-88-3)		
Finland - Occupational exposure limit values		
HTP (OEL TWA)	81 mg/m³	
	25 ppm	
HTP (OEL STEL)	380 mg/m³	
	100 ppm	
France - Occupational exposure limit values		
VME (OEL TWA)	76.8 mg/m³	
	20 ppm	
VLE (OEL C/STEL)	384 mg/m³	
	100 ppm	
Germany - Occupational exposure limit values (TR	GS 900)	
AGW (OEL TWA)	190 mg/m³	
	50 mg/m³	
AGW (OEL C)	380 mg/m³	
AGW (OEL C) [ppm]	100 ppm	
Hungary - Occupational exposure limit values		
AK (OEL TWA)	190 mg/m³	
CK (OEL STEL)	380 mg/m³	
Ireland - Occupational exposure limit values		
OEL TWA	192 mg/m³	
	50 ppm	
OEL STEL	384 mg/m³	
	100 ppm	
Italy - Occupational exposure limit values		
OEL TWA	192 mg/m³	
	50 ppm	
Latvia - Occupational exposure limit values		
OEL TWA	50 mg/m³	
	14 ppm	
OEL STEL	150 mg/m³	
	40 ppm	
Netherlands - Occupational exposure limit values		
TGG-8u (OEL TWA)	150 mg/m³	
	39 ppm	
TGG-15min (OEL STEL)	384 mg/m³	
	100 ppm	
Poland - Occupational exposure limit values		
NDS (OEL TWA)	100 mg/m³	
NDSCh (OEL STEL)	200 mg/m³	

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Toluene (108-88-3)		
Romania - Occupational exposure limit values		
OEL TWA	192 mg/m³	
	50 ppm	
OEL STEL	384 mg/m³	
	100 ppm	
Spain - Occupational exposure limit values		
VLA-ED (OEL TWA)	192 mg/m³	
	50 ppm	
VLA-EC (OEL STEL)	384 mg/m³	
	100 ppm	
Sweden - Occupational exposure limit values		
NGV (OEL TWA)	192 mg/m³	
	50 ppm	
KGV (OEL STEL)	384 mg/m³	
	100 ppm	
United Kingdom - Occupational exposure limit valu	es	
WEL TWA (OEL TWA)	191 mg/m³	
,	50 ppm	
WEL STEL (OEL STEL)	384 mg/m³	
	100 ppm	
Norway - Occupational exposure limit values	<u> </u>	
Grenseverdi (OEL TWA)	94 mg/m³	
,	25 ppm	
Switzerland - Occupational exposure limit values		
MAK (OEL TWA)	190 mg/m³	
(===:::,	50 ppm	
KZGW (OEL STEL)	760 mg/m³	
(822 8122)	200 ppm	
USA - ACGIH - Occupational Exposure Limit Values		
ACGIH® TLV® TWA	75.4 mg/m³	
THE THAT	20 ppm	
benzene (71-43-2)		
EU - Binding Occupational Exposure Limit (BOEL)		
Local name	Benzene	
BOEL TWA	0.66 mg/m³ (Limit value from 5 April 2026)1.65 mg/m³ (Limit value until 5 April 2026)	
5522 1177	0,2 ppm (Limit value from 5 April 2026)0,5 ppm (Limit value until 5 April 2026)	
Notes		
	Skin (possible substantial contribution to total body burden via dermal exposure)	
Regulatory reference	DIRECTIVE (EU) 2022/431 (amending Directive 2004/37/EC)	

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benzene (71-43-2)	
EU - Biological Limit Value (BLV)	
Local name	Benzene
BLV	28 μg/l Parameter: benzene - Medium: blood - Sampling time: immediately at the end of the shift 46 μg/g creatine Parameter: phenylmercapturic - Medium: urine - Sampling time: end of exposure/shift
Regulatory reference	SCOEL List of recommended health-based BLVs and BGVs
Austria - Occupational exposure limit values	
MAK (OEL TWA)	3,2 mg/m³
	1 ppm
MAK (OEL STEL)	1,.8 mg/m³
	4 ppm
Belgium - Occupational exposure limit values	
OEL TWA	3,25 mg/m³
	1 ppm
Denmark - Occupational exposure limit values	
OEL TWA	1,6 mg/m³
	0,5 ppm
OEL STEL	3,2 mg/m³
	1 ppm
Finland - Occupational exposure limit values	
HTP (OEL TWA)	3,25 mg/m³
	1 ppm
France - Occupational exposure limit values	
VME (OEL TWA)	3,25 mg/m³
	1 ppm
Germany - Occupational exposure limit values (TRO	GS 900)
AGW (OEL TWA)	1,9 mg/m³
	0,6 ppm
AGW (OEL C)	15,2 mg/m³
AGW (OEL C) [ppm]	4,8 ppm
Hungary - Occupational exposure limit values	
AK (OEL TWA)	3,25 mg/m³
	1 ppm
Ireland - Occupational exposure limit values	
OEL TWA	3,25 mg/m³
	1 ppm
Italy - Occupational exposure limit values	
Local name	Benzene
OEL TWA	0,66 mg/m³1.65 mg/m³ Limit value until 5 April 2026

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Regulatory reference carriogens, mutagens or substances toxic to reproduction Latvia - Occupational exposure limit values OEL TWA 3,25 mg/m³ 1 ppm Netherlands - Occupational exposure limit values TGG-8u (DEL TWA) 0,7 mg/m³ Poland - Occupational exposure limit values NDS (OEL TWA) 1,6 mg/m³ Romania - Occupational exposure limit values OEL TWA 3,25 mg/m³ 1 ppm Norwania - Occupational exposure limit values VLA-ED (OEL TWA) 3,25 mg/m³ 1 ppm Sweden - Occupational exposure limit values NOY (OEL TWA) 1,5 mg/m³ 1 ppm Sweden - Occupational exposure limit values WCV (OEL TWA) 1,5 mg/m³ 2,5 ppm KGV (OEL STEL) 9 mg/m³ 3 ppm United Kingdom - Occupational exposure limit values WEL TWA (OEL TWA) 3,25 mg/m³ 1 ppm Norway - Occupational exposure limit values WEL TWA (OEL TWA) 0,5 ppm Norway - Occupational exposure limit values WEL TWA (OEL TWA) 0,6 mg/m³ 2,2 ppm Norway - Occupational exposure limit values MAK (OEL TWA) 0,7 mg/m³ 0,2 ppm Switzerland - Occupational exposure limit values MAK (OEL TWA) 0,7 mg/m³ 0,2 ppm USA - ACGIH- Occupational Exposure Limit Values ACGIH-B TLV® TWA 0,5 ppm (A1, ACGIH 2021) ACGIH-B TLV® TWA 0,5 ppm (A1, ACGIH 2021) ACGIH-B TLV® TWA 0,5 ppm (A1, ACGIH 2021) ACGIH-B TLV® TWA 0,1 Hexane	benzene (71-43-2)		
Regulatory reference carcinogens, mutagens or substances toxic to reproduction Latvia - Occupational exposure limit values OEL TWA 3,25 mg/m³ 1 ppm Netherlands - Occupational exposure limit values TGG-8u (OEL TWA) 0,7 mg/m³ Poland - Occupational exposure limit values NDS (OEL TWA) 1,6 mg/m³ Romania - Occupational exposure limit values OEL TWA 3,25 mg/m³ 1 ppm Spain - Occupational exposure limit values VLA-ED (OEL TWA) 1,5 mg/m³ 1 ppm Sweden - Occupational exposure limit values NDV (OEL TWA) 1,5 mg/m³ 1 ppm KGV (OEL TWA) 1,5 mg/m³ 3 ppm United Kingdom - Occupational exposure limit values WEL TWA 1 2,5 mg/m³ 1 ppm Norway - Occupational exposure limit values WEL TWA 0,0 Mg/m³ 1 ppm Norway - Occupational exposure limit values WEL TWA (OEL TWA) 2,5 ppm Norway - Occupational exposure limit values WEL TWA (OEL TWA) 0,66 mg/m³ 0,2 ppm Norway - Occupational exposure limit values Well TWA (OEL TWA) 0,66 mg/m³ 0,2 ppm USA - ACGIH - Occupational Exposure Limit Values ACGIH TUVB TWA 0,5 ppm (A1, ACGIH 2021) LOCAL TRANA 0,5 ppm (A1, ACGIH 2021) LOCAL TRANA 0,1 mg/m³ 0.1 mg/m³ 0.2 ppm (A1, ACGIH 2021) LOCAL TRANA 0,1 mg/m³ 0.2 mg/m³ 0.2 ppm (A1, ACGIH 2021) LOCAL TRANA 0,1 mg/m³ 0.2 ppm (A1, ACGIH 2021) LOCAL TRANA 0,1 mg/m³ 0.2 mg/m		0,2 ppm0.5 ppm Limit value until 5 April 2026	
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Section Sect	Regulatory reference		
Netherlands - Occupational exposure limit values TGG-8u (OEL TWA) Poland - Occupational exposure limit values NDS (OEL TWA) NDS (OEL TWA) 1,6 mg/m³ Romania - Occupational exposure limit values OEL TWA 3,25 mg/m³ 1 ppm Spain - Occupational exposure limit values VLA-ED (OEL TWA) 3,25 mg/m³ 1 ppm Sweden - Occupational exposure limit values VLA-ED (OEL TWA) 1,5 mg/m³ 1 ppm Sweden - Occupational exposure limit values NGV (OEL TWA) 1,5 mg/m³ 1,5 ppm KGV (OEL STEL) 9 mg/m³ 3 ppm United Kingdom - Occupational exposure limit values WEL TWA (OEL TWA) 1,5 mg/m³ 1 ppm Norway - Occupational exposure limit values WEL TWA (OEL TWA) 0,66 mg/m³ 0,2 ppm Switzerfand - Occupational exposure limit values MAK (OEL TWA) 0,7 mg/m³ 0,2 ppm USA - AGGIH-0 Occupational Exposure Limit Values ACGIH-8 TLV® TWA 0,5 ppm (A1, ACGIH 2021) 1-Hexane IOEL TWA 0-Hexane IOEL TWA 0-Hexane IOEL TWA 0-I pm/m³ 0-I pm	Latvia - Occupational exposure limit values		
Netherlands - Occupational exposure limit values TGG-8u (OEL TWA) 0,7 mg/m³ Poland - Occupational exposure limit values 1,6 mg/m³ NDS (OEL TWA) 1,6 mg/m³ Romania - Occupational exposure limit values 0EL TWA Spain - Occupational exposure limit values 1 ppm Spain - Occupational exposure limit values 3,25 mg/m³ VLA-ED (OEL TWA) 1,5 mg/m³ Sweden - Occupational exposure limit values 0,5 ppm KGV (OEL STEL) 9 mg/m³ 3 ppm 1 ppm United Kingdom - Occupational exposure limit values WEL TWA (OEL TWA) WEL TWA (OEL TWA) 3,25 mg/m³ 1 ppm 1 ppm Norway - Occupational exposure limit values Grenseverdi (OEL TWA) O,66 mg/m³ 0,2 ppm Switzerland - Occupational exposure limit values WEL TWA (OEL TWA) MAK (OEL TWA) 0,7 mg/m³ 0,2 ppm USA - ACGIH - Occupational Exposure Limit Values ACGIH® TLV® STEL 2,5 ppm (A1, ACGIH 2021) ACGIH® TLV® STEL 2,5 ppm (A1, ACGIH 2021) n-Hexane (10-EL TWA)	OEL TWA	3,25 mg/m³	
TGG-8u (OEL TWA) 0,7 mg/m³ Poland - Occupational exposure limit values NDS (OEL TWA) 1,8 mg/m³ Romania - Occupational exposure limit values 3,25 mg/m³ OEL TWA 3,25 mg/m³ Spain - Occupational exposure limit values VLA-ED (OEL TWA) VLA-ED (OEL TWA) 3,25 mg/m³ 1 ppm 5weden - Occupational exposure limit values NGV (OEL TWA) 1,5 mg/m³ 0,5 ppm 6weden - Occupational exposure limit values WEL TWA (OEL TWA) 3,25 mg/m³ 1 ppm 1 ppm Norway - Occupational exposure limit values WEL TWA (OEL TWA) Grenseverdi (OEL TWA) 0,86 mg/m³ 0,2 ppm 0,2 ppm Switzerland - Occupational exposure limit values WEL TWA (OEL TWA) USA - ACGIH - Occupational Exposure Limit Values ACGIH® TLV® TWA ACGIH® TLV® TWA 0,5 ppm (A1, ACGIH 2021) ACGIH® TLV® STEL 2,5 ppm (A1, ACGIH 2021) n-Hexane (110-54-3) 10-Hexane EU - Indicative Occupational Exposure Limit Value (IOEL)		1 ppm	
Poland - Occupational exposure limit values NDS (OEL TWA)	Netherlands - Occupational exposure limit values		
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Norway - Occupational exposure limit values Spemin	Poland - Occupational exposure limit values		
Spain - Occupational exposure limit values VLA-ED (OEL TWA)	NDS (OEL TWA)	1,6 mg/m³	
1 ppm	Romania - Occupational exposure limit values		
Spain - Occupational exposure limit values 3,25 mg/m³ 1 ppm	OEL TWA	3,25 mg/m³	
VLA-ED (OEL TWA) 3,25 mg/m³ 1 ppm Sweden - Occupational exposure limit values NGV (OEL TWA) 1,5 mg/m³ 0,5 ppm KGV (OEL STEL) 9 mg/m³ 3 ppm United Kingdom - Occupational exposure limit values WEL TWA (OEL TWA) 3,25 mg/m³ 1 ppm Norway - Occupational exposure limit values Grenseverdi (OEL TWA) 0,66 mg/m³ 0,2 ppm Switzerland - Occupational exposure limit values MAK (OEL TWA) 0,7 mg/m³ 0,2 ppm USA - ACGIH - Occupational Exposure Limit Values ACGIH® TLV® TWA ACGIH® TLV® STEL 1,5 mg/m³ 0,5 ppm (A1, ACGIH 2021) ACGIR® TLV® STEL 1,5 mg/m³ 0,5 ppm (A1, ACGIH 2021) ACGIR® TLV® STEL 1,5 mg/m³ 0,5 ppm (A1, ACGIH 2021) ACGIR® TLV® STEL 1,5 mg/m³ 0,5 ppm (A1, ACGIH 2021) ACGIR® TLV® STEL 1,5 mg/m³ 0,5 ppm (A1, ACGIH 2021) ACGIR® TLV® STEL 1,5 mg/m³ 0,5 ppm (A1, ACGIH 2021) ACGIR® TLV® STEL 1,5 mg/m³ 0,5 ppm (A1, ACGIH 2021) ACGIR® TLV® STEL 1,5 mg/m³ 0,5 ppm (A1, ACGIH 2021) ACGIR® TLV® STEL 1,5 mg/m³ 0,5 ppm (A1, ACGIH 2021) ACGIR® TLV® STEL 1,5 mg/m³ 0,2 ppm ACGIR® TLV® TWA 1,5 mg/m³ 0,2 ppm ACGIR® TWA ACGIR®		1 ppm	
Sweden - Occupational exposure limit values NGV (OEL TWA) 1.5 mg/m³ 0.5 ppm KGV (OEL STEL) 9 mg/m³ 3 ppm United Kingdom - Occupational exposure limit values WEL TWA (OEL TWA) 1 ppm Norway - Occupational exposure limit values Grenseverdi (OEL TWA) 0.66 mg/m³ 0.2 ppm Switzerland - Occupational exposure limit values MAK (OEL TWA) 0,7 mg/m³ 0,2 ppm USA - ACGIH - Occupational Exposure Limit Values ACGIH® TLV® TWA 0.5 ppm (A1, ACGIH 2021)	Spain - Occupational exposure limit values		
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NGV (OEL TWA) 1,5 mg/m³ 0,5 ppm 9 mg/m³ 3 ppm 3 ppm United Kingdom - Occupational exposure limit values WEL TWA (OEL TWA) 3,25 mg/m³ 1 ppm 1 ppm Norway - Occupational exposure limit values Grenseverdi (OEL TWA) 0,66 mg/m³ 0,2 ppm 0,2 ppm Switzerland - Occupational exposure limit values MAK (OEL TWA) 0,7 mg/m³ 0,2 ppm 0,2 ppm USA - ACGIH - Occupational Exposure Limit Values ACGIH® TLV® TWA 0,5 ppm (A1, ACGIH 2021) ACGIH® TLV® STEL 2,5 ppm (A1, ACGIH 2021) n-Hexane (110-54-3) EU - Indicative Occupational Exposure Limit Value (IOEL) Local name n-Hexane IOEL TWA 72 mg/m³		1 ppm	
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United Kingdom - Occupational exposure limit values WEL TWA (OEL TWA) 3,25 mg/m³ 1 ppm Norway - Occupational exposure limit values Grenseverdi (OEL TWA) 0,66 mg/m³ 0,2 ppm Switzerland - Occupational exposure limit values MAK (OEL TWA) 0,7 mg/m³ 0,2 ppm USA - ACGIH - Occupational Exposure Limit Values ACGIH® TLV® TWA 0,5 ppm (A1, ACGIH 2021) ACGIH® TLV® STEL 2,5 ppm (A1, ACGIH 2021) n-Hexane (110-54-3) EU - Indicative Occupational Exposure Limit Value (IOEL) Local name n-Hexane IOEL TWA 72 mg/m³		0,5 ppm	
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Norway - Occupational exposure limit values Grenseverdi (OEL TWA) 0,66 mg/m³ 0,2 ppm Switzerland - Occupational exposure limit values MAK (OEL TWA) 0,7 mg/m³ 0,2 ppm USA - ACGIH - Occupational Exposure Limit Values ACGIH® TLV® TWA 0,5 ppm (A1, ACGIH 2021) ACGIH® TLV® STEL 2,5 ppm (A1, ACGIH 2021) n-Hexane (110-54-3) EU - Indicative Occupational Exposure Limit Value (IOEL) Local name n-Hexane IOEL TWA 1 ppm 0,66 mg/m³ 0,2 ppm 0,7 mg/m³ 0,2 ppm	United Kingdom - Occupational exposure limit valu	ies	
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Switzerland - Occupational exposure limit values MAK (OEL TWA) 0,7 mg/m³ 0,2 ppm USA - ACGIH - Occupational Exposure Limit Values ACGIH® TLV® TWA 0,5 ppm (A1, ACGIH 2021) ACGIH® TLV® STEL 2,5 ppm (A1, ACGIH 2021) n-Hexane (110-54-3) EU - Indicative Occupational Exposure Limit Value (IOEL) Local name n-Hexane IOEL TWA 72 mg/m³	Norway - Occupational exposure limit values		
Switzerland - Occupational exposure limit values MAK (OEL TWA) 0,7 mg/m³ 0,2 ppm USA - ACGIH - Occupational Exposure Limit Values ACGIH® TLV® TWA 0,5 ppm (A1, ACGIH 2021) ACGIH® TLV® STEL 2,5 ppm (A1, ACGIH 2021) n-Hexane (110-54-3) EU - Indicative Occupational Exposure Limit Value (IOEL) Local name n-Hexane IOEL TWA 72 mg/m³	Grenseverdi (OEL TWA)	0,66 mg/m ³	
MAK (OEL TWA) 0,7 mg/m³ 0,2 ppm USA - ACGIH - Occupational Exposure Limit Values ACGIH® TLV® TWA 0,5 ppm (A1, ACGIH 2021) ACGIH® TLV® STEL 2,5 ppm (A1, ACGIH 2021) n-Hexane (110-54-3) EU - Indicative Occupational Exposure Limit Value (IOEL) Local name n-Hexane IOEL TWA 72 mg/m³		0,2 ppm	
USA - ACGIH - Occupational Exposure Limit Values ACGIH® TLV® TWA 0,5 ppm (A1, ACGIH 2021) ACGIH® TLV® STEL 2,5 ppm (A1, ACGIH 2021) n-Hexane (110-54-3) EU - Indicative Occupational Exposure Limit Value (IOEL) Local name n-Hexane IOEL TWA 72 mg/m³	Switzerland - Occupational exposure limit values		
ACGIH® TLV® TWA 0,5 ppm (A1, ACGIH 2021) ACGIH® TLV® STEL 2,5 ppm (A1, ACGIH 2021) n-Hexane (110-54-3) EU - Indicative Occupational Exposure Limit Value (IOEL) Local name n-Hexane IOEL TWA 72 mg/m³	MAK (OEL TWA)	0,7 mg/m³	
ACGIH® TLV® TWA 0,5 ppm (A1, ACGIH 2021) ACGIH® TLV® STEL 2,5 ppm (A1, ACGIH 2021) n-Hexane (110-54-3) EU - Indicative Occupational Exposure Limit Value (IOEL) Local name n-Hexane IOEL TWA 72 mg/m³		0,2 ppm	
ACGIH® TLV® STEL 2,5 ppm (A1, ACGIH 2021) n-Hexane (110-54-3) EU - Indicative Occupational Exposure Limit Value (IOEL) Local name IOEL TWA 2,5 ppm (A1, ACGIH 2021) n-Hexane 72 mg/m³	USA - ACGIH - Occupational Exposure Limit Values		
n-Hexane (110-54-3) EU - Indicative Occupational Exposure Limit Value (IOEL) Local name n-Hexane IOEL TWA 72 mg/m³	ACGIH® TLV® TWA	0,5 ppm (A1, ACGIH 2021)	
EU - Indicative Occupational Exposure Limit Value (IOEL) Local name n-Hexane IOEL TWA 72 mg/m³	ACGIH® TLV® STEL	2,5 ppm (A1, ACGIH 2021)	
Local name n-Hexane IOEL TWA 72 mg/m³	n-Hexane (110-54-3)		
IOEL TWA 72 mg/m³	EU - Indicative Occupational Exposure Limit Value (IOEL)		
	Local name	n-Hexane	
20 ppm	IOEL TWA	72 mg/m³	
		20 ppm	

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n-Hexane (110-54-3)	
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
Austria - Occupational exposure limit values	
MAK (OEL TWA)	72 mg/m³
	20 ppm
MAK (OEL STEL)	288 mg/m³
	80 ppm
Belgium - Occupational exposure limit values	
OEL TWA	72 mg/m³
	20 ppm
Denmark - Occupational exposure limit values	
OEL TWA	72 mg/m³
	20 ppm
OEL STEL	144 mg/m³
	40 ppm
Finland - Occupational exposure limit values	
HTP (OEL TWA)	72 mg/m³
	20 ppm
France - Occupational exposure limit values	
VME (OEL TWA)	72 mg/m³
	20 ppm
Germany - Occupational exposure limit values (TR	GS 900)
AGW (OEL TWA)	180 mg/m³
	50 ppm
AGW (OEL C)	1440 mg/m³
AGW (OEL C) [ppm]	400 ppm
Hungary - Occupational exposure limit values	
AK (OEL TWA)	72 mg/m³
Ireland - Occupational exposure limit values	
OEL TWA	72 mg/m³
	20 ppm
Italy - Occupational exposure limit values	
Local name	n-Hexane
OEL TWA	72 mg/m³
	20 ppm
Regulatory reference	Annex XXXVIII of Legislative Decree No. 135 of 4 September 2024
Latvia - Occupational exposure limit values	
OEL TWA	72 mg/m³
	20 ppm

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n-Hexane (110-54-3)		
Netherlands - Occupational exposure limit values		
TGG-8u (OEL TWA)	72 mg/m³	
	20 ppm	
TGG-15min (OEL STEL)	144 mg/m³	
	40 ppm	
Poland - Occupational exposure limit values		
NDS (OEL TWA)	72 mg/m³	
Romania - Occupational exposure limit values		
OEL TWA	72 mg/m³	
	20 ppm	
Spain - Occupational exposure limit values		
VLA-ED (OEL TWA)	72 mg/m³	
	20 ppm	
Sweden - Occupational exposure limit values		
NGV (OEL TWA)	72 mg/m³	
	20 ppm	
KGV (OEL STEL)	180 mg/m³	
	50 ppm	
United Kingdom - Occupational exposure limit values		
WEL TWA (OEL TWA)	72 mg/m³	
	20 ppm	
Norway - Occupational exposure limit values		
Grenseverdi (OEL TWA)	72 mg/m³	
	20 ppm	
Switzerland - Occupational exposure limit values		
MAK (OEL TWA)	180 mg/m³	
	50 ppm	
KZGW (OEL STEL)	1440 mg/m³	
	400 ppm	
USA - ACGIH - Occupational Exposure Limit Values		
ACGIH® TLV® TWA	50 ppm (ACGIH 2021)	

8.1.2. Recommended monitoring procedures

Monitoring methods	
Monitoring methods	Monitoring procedures must be selected based on the guidelines established by the competent local authorities or national employment contracts. Refer to Legislative Decree 81/2008 and good industrial hygiene practices. UNI EN 482:2021: Workplace exposure-Procedures for the determination of the concentration of chemical agents - Basic performance requirements. UNI EN 689:2019: Workplace exposure - Measurement of exposure by inhalation to chemical agents - Strategy for compliance assessment with exposure limit values.

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8.1.3. Formation of Air Contaminants

Applicable OEL and BLV for air contaminants : None known

8.1.4. DNEL and NECP

Gasoline (all types)		
DNEL/DMEL (additional information)		
Further information	Not applicable	
	not applicable	
NECP (additional information) Further information	Not applicable	
Gasoline (Low Boiling Point Naphtha - Unspe	cified) (Benzene > 0.1% w) (86290-81-5)	
DNEL/DMEL (Workers)		
Acute - systemic effects, inhalation	1300 mg/m³ (DNEL, 15 min)	
Acute - local effects, inhalation	1100 mg/m³ (DNEL, 15 min)	
Long-term - systemic effects, dermal	23,4 mg/kg body weight/day (DNEL, 8h)	
Long-term - systemic effects, inhalation	3.2 mg/m³/day (DNEL, 8h)	
DNEL/DMEL (General Population)		
Acute - systemic effects, inhalation	1200 mg/m³ (DNEL, 15 min)	
Acute - local effects, inhalation	640 mg/m³ (DNEL, 15 min)	
Long-term - systemic effects, inhalation	≥ 180 mg/m³/day (DNEL, 8 h)	
Long-term - local effects, inhalation	180 mg/m³ (DNEL, 8 h)	
NECP (additional information)		
Further information	Not applicable (UVCB)	
tert-butylmethyl ether; MTBE; 2-methoxy-2-meth	ethylpropane (1634-04-4)	
DNEL/DMEL (Workers)		
Acute - local effects, inhalation	357 mg/m³	
Long-term - systemic effects, dermal	5100 mg/kg bw/day	
Long-term - systemic effects, inhalation	178.5 mg/m³	
DNEL/DMEL (General Population)		
Acute - local effects, inhalation	214 mg/m³	
Long-term - systemic effects, oral	7,1 mg/kg body weight/day	
Long-term - systemic effects, inhalation	53.6 mg/m³	
Long-term - systemic effects, dermal	3570 mg/kg body weight/day	
PNEC (Water)		
PNEC aqua (fresh water)	5,1 mg/l	
PNEC aqua (seawater)	260 μg/l	
PNEC aqua (intermittent, fresh water)	47,2 mg/l	
PNEC (Sediment)		
Sediment (fresh water)	23 mg/kg dwt	
Sediment (seawater)	1,17 mg/kg dwt	
NECP (Soil)		
Soil NECP	1,56 mg/kg dwt	

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tert-butylmethyl ether; MTBE; 2-methoxy-2-methylpropane (1634-04-4)	
NECP (STP)	
Wastewater treatment plant	71 mg/l
Ethyl T-Butyl Ether (637-92-3)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	2800 mg/m³
Long-term - systemic effects, dermal	6767 mg/kg body weight/day
Long-term - systemic effects, inhalation	352 mg/m³
Long-term - local effects, inhalation	105 mg/m³
DNEL/DMEL (General Population)	
Acute - systemic effects, inhalation	1680 mg/m³
Long-term - systemic effects, oral	6 mg/kg body weight/day
Long-term - systemic effects, inhalation	105 mg/m³
Long-term - systemic effects, dermal	4060 mg/kg body weight/day
Long-term - local effects, inhalation	63 mg/m³
PNEC (Water)	
PNEC aqua (fresh water)	0,51 mg/l
PNEC aqua (seawater)	0,017 mg/l
PNEC aqua (intermittent, fresh water)	11 mg/l
PNEC (Sediment)	
Sediment (fresh water)	2,86 mg/kg dwt
Sediment (seawater)	0.078 mg/kg dwt
NECP (Soil)	
Soil NECP	0,24 mg/kg dwt
NECP (STP)	
Wastewater treatment plant	12,5 mg/l
2-methyl-2-methoxybutane; Terz-amyl methyl	ether (994-05-8)
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	353,3 mg/m³
Long-term - systemic effects, dermal	1601 mg/kg body weight/day
Long-term - systemic effects, inhalation	88,8 mg/m³
DNEL/DMEL (General Population)	
Acute - systemic effects, inhalation	212 mg/m³
Long-term - systemic effects, oral	1 mg/kg body weight/day
Long-term - systemic effects, inhalation	26,5 mg/m³
Long-term - systemic effects, dermal	961 mg/kg body weight/day
PNEC (Water)	
PNEC aqua (fresh water)	0,51 mg/l
PNEC aqua (seawater)	0,0339 mg/l

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2-methyl-2-methoxybutane; Terz-amyl m	ethyl ether (994-05-8)
PNEC aqua (intermittent, fresh water)	10 mg/l
PNEC (Sediment)	
Sediment (fresh water)	2,99 mg/kg dwt
Sediment (seawater)	0,199 mg/kg dwt
NECP (Soil)	
Soil NECP	0,301 mg/kg dwt
NECP (STP)	
Wastewater treatment plant	25 mg/l
ethanol, ethyl alcohol (64-17-5)	
DNEL/DMEL (Workers)	
Acute - local effects, inhalation	1900 mg/m³
Long-term - systemic effects, dermal	343 mg/kg body weight/day
Long-term - systemic effects, inhalation	950 mg/m³
PNEC (Water)	
PNEC aqua (fresh water)	0,96 mg/l
PNEC aqua (seawater)	0,79 mg/l
PNEC (Sediment)	
Sediment (fresh water)	3,6 mg/kg dwt
Sediment (seawater)	2,9 mg/kg dwt
NECP (Soil)	
Soil NECP	0,63 mg/kg dwt
PNEC (Oral)	
Oral PNEC (secondary poisoning)	720 mg/kg food
Note	: The derived no-effect level (DNEL) is a safe level of exposure derived from toxicological data in accordance with specific guidelines contained in the European REACH legislation. The DNEL may differ from an occupational exposure limit (OEL) value for the same chemical substance. OELs may be recommended by an individual company, a governmental regulatory bodies or an expert organisation such as the Scientific Committee on Occupational Exposure Limit Values (SCOEL) or the American Conference of Governmental Industrial Hygienists (ACGIH). OELs are considered safe exposure levels for a typical worker in an 8-hour shift, with a 40-hour workweek, as a time-weighted average concentration (TWA) or a short-term (15-minute) exposure limit (STEL). Although they are also considered as health protection indicators, the OEL is derived by a different process from the REACH.
8.1.5. Control Band	
Control band	: None established

8.2. Exposure Controls

8.2.1. Appropriate Technical Controls

Appropriate Technical Controls:

Minimize exposure to mists/vapors/aerosols. Before accessing storage tanks and starting any intervention in a confined space (e.g. tunnels), check the atmosphere and verify oxygen content, presence of hydrogen sulfide (H2S) and SOx, and flammability.

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8.2.2. Personal protective equipment

Personal protective equipment:

Full face mask (for conditions of use, see: "Respiratory protection"). Face shield. Safety goggles. Protective clothing. Protective Gloves. Safety footwear.

Personal Protective Equipment symbol(s):













8.2.2.1. Eye and face protection

Eye Protection:

Wear safety goggles or face shield. ISO 16321-1

8.2.2.2. Skin protection

Skin and body protection:

Protective clothing (EN 14605 or EN 13034). EN ISO 20346. EN 1149-5. Contaminated clothing must be washed before reuse.

Hand protection:

Protective gloves. Recommended materials: nitrile (NBR) or PVC with a protection index of at least 5 (permeation time ≥240 min). Use gloves in accordance with the manufacturer's instructions and limitations. Immediately replace gloves if they show cuts, holes, or other signs of damage. Refer to standard UNI EN 374 where applicablePersonal hygiene is essential for effective hand protection. Gloves should be worn only on clean hands. After glove removal, hands must be thoroughly washed and dried.

Other skin protection

Clothing - material selection:

Personnel must wear antistatic clothing made of natural fibers or high-temperature-resistant synthetic fibres.

8.2.2.3. Respiratory protection

Respiratory protection:

Apart from other possible actions (plant modifications, operating procedures and other means to reduce workers' exposure), personal protective equipment shall be indicated which may be adopted as necessary. In ventilated or outdoor environments: if the product is handled without suitable vapor containment systems, use masks or half-masks with a hydrocarbon vapor (AX) filter. (EN 136/140/145). In areas where hydrogen sulfide may accumulate, use approved respiratory protective devices: full face masks equipped with Type B filter cartridge (gray for organic vapors, including H2S), or self-contained breathing apparatus. (EN 136/140/145). Combined gas/dust respirator with filter type: EN 14387. In confined spaces (e.g. inside tanks): the use of respiratory protective devices (half masks, full-face masks, breathing apparatus) must be evaluated based on the work activity, the expected duration and intensity of exposure. For technical specifications, refer to the Ministerial Decree 02/05/2001. If exposure levels cannot be determined or estimated with good certainty, or if oxygen deficiency is possible, use only a self-contained respirator.

8.2.2.4. Thermal hazards

Protection against thermal hazards:

None under normal use.

8.2.3. Environmental exposure controls

Environmental exposure controls:

Do not dispose of the product in the environment. Storage facilities/areas must be equipped with appropriate systems to prevent contamination of soil and water in the event of leaks or spills. Prevent the release of undissolved substances into, or recover them from, wastewater. On-site wastewater treatment is required. Do not distribute the sludge generated by industrial water treatment on natural soils. Sludge generated by industrial water treatment shall be incinerated, contained or treated.

Limitation and control of consumer exposure:

Not applicable.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Color : light yellow.
Appearance : Clear liquid.
Odour : Similar to oil

Olfactory threshold : Data not available (for mixture/components of the mixture)

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Melting Point : Not applicable Freezing point : $< -60 \, ^{\circ}\text{C}$ Boiling point : $\le 35 \, ^{\circ}\text{C}$

Flammability : Highly flammable liquid and vapors. Explosive properties : None (based on composition).

Oxidizing properties : None (based on composition).

Lower explosive limit : 1,4 vol % Upper explosive limit : 7,6 vol %

Flash point : < -40 °C (EN ISO 13736) Auto-ignition temperature : > 280 °C (CAS 64741-55-5)

Decomposition Temperature : Data not available (on mixture/mixture components)

ph : Not applicable.

Kinematics viscosity : < 1 mm²/s (40 °C) (ASTM D 445)

Dynamic viscosity : Lack of data (on mixture/mixture components) - Data not available

Solubility : Water: Partially soluble
Partition coefficient n-octanol/water (Log Kow) : Not applicable for mixtures
Partition coefficient n-octanol/water (Log Pow) : Not applicable for mixtures

Vapour pressure : 4 – 140 kPa (37.8 °C) (EN 13016) (CAS 64741-55-5)
Vapour pressure at 50°C : Data not available (on mixture/mixture components)
Density : 720 – 780 kg/m³ (EN ISO 12185) (CAS 6471-55-5)
Relative Density : Data not available (on mixture/mixture components)

Relative vapor density at 20°C : Unavailable Particle characteristics : Not applicable

9.2. Other information

9.2.1. Information regarding physical hazard classes

No further information available

9.2.2. Other safety characteristics

Relative evaporation rate (butylacetate=1) : Data not available (on mixture/mixture components)

Further information : Data not available

SECTION 10: Stability and Reactivity

10.1. Reactivity

The mixture does not present any additional reactivity hazards compareted to the following subheadings.

10.2. Chemical Stability

Stable product based on its intrinsic properties.

10.3. Potential of dangerous reactions

No hazardous reactions are foreseeable (under normal storage and handling conditions). Contact with strong oxidants (such as peroxides and chromates) can cause a fire hazard. Sensitivity to heat, friction and shock cannot be assessed in advance.

10.4. Conditions to be avoided

Keep away from open flames, hot surfaces and ignition sources. Avoid the accumulation of electrostatic charges. Do not smoke.

10.5. Incompatible Materials

Oxidizing agents.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, no dangerous decomposition products should be created. Thermal decomposition generates: Toxic fumes.

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Acute toxicity (oral)

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

SECTION 11: Toxicological information

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, ,	Not classified (Based on available data, the classification criteria are not met)	
	Not classified (Based on available data, the classification criteria are not met)	
Further information :	(depending on composition)	
Gasoline (Low Boiling Point Naphtha - Unspe	cified) (Benzene > 0.1% w) (86290-81-5)	
DL50 oral rat	> 5000 mg/kg (OECD 401)	
DL50 Skin Rabbit	> 2000 mg/kg (OECD 402)	
CL50 Inhalation - Rat	> 5.16 mg/l (OECD 403)	
tert-butylmethyl ether; MTBE; 2-methoxy-2-methylpropane (1634-04-4)		
DL50 oral rat	≈ 4000 mg/kg (OECD 401)	
DL50 Dermal Rat	> 2000 mg/kg (OECD 402)	
DL50 Dermal Rabbit	> 10000 (OECD 402)	
CL50 Inhalation - Rat	85 mg/l/4h (OECD 403)	
Ethyl T-Butyl Ether (637-92-3)		
DL50 oral rat	> 2000 mg/kg (OECD 401)	
DL50 Dermal Rabbit	> 2000 (OECD 402)	
CL50 Inhalation - Rat	> 5.88 mg/l/4h (OECD 403)	
2-methyl-2-methoxybutane; Terz-amyl methyl ether (994-05-8)		
DL50 oral rat	1602 – 2417 mg/kg body weight	
DL50 Dermal Rabbit	> 2000 mg/kg body weight (OECD 402)	
·	> 5.4 mg/l air (OECD 403)	

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

DL50 oral rat 6200 – 15000 mg/kg body weight (equivalent to OECD Method 401) DL50 Dermal Rabbit 20 g/kg CL50 Inhalation - Rat 0,05 mg/l/4h (equivalent to OECD Method 403) Toluene (108-88-3)

Totalistic (vice as a)	
DL50 oral rat	5580 mg/kg body weight
DL50 Dermal Rabbit	> 5000 mg/kg body weight
CL50 Inhalation - Rat	28.1 mg/l/4h
benzene (71-43-2)	
DL50 oral rat	> 2000 mg/kg body weight (OECD 401)

CL50 Inhalation - Rat	43,767 mg/l air, Animal: rat, Animal sex: female, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), 95% CL: 41690 - 45939
n-Hexane (110-54-3)	
DL50 oral rat	24 ml/kg OECD 401
DL50 Skin Rabbit	> 2000 mg/kg OECD 402
CL50 Inhalation - Rat [ppm]	> 5 ppm OECD 403

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Skin corrosion/irritation : Causes skin irritation.

Further information :	pH: Not applicable. (depending on the composition)			
Gasoline (Low Boiling Point Naphtha - Unspe				
ph	Not applicable.			
tert-butylmethyl ether: MTBE: 2-methoxy-2-m	tert-butylmethyl ether; MTBE; 2-methoxy-2-methylpropane (1634-04-4)			
ph	Not applicable			
Ethyl T-Butyl Ether (637-92-3)				
ph	Not applicable			
<u> </u>	Not classified (Based on the available data, the classification criteria are not met)			
Further information :	pH: Not applicable. (depending on composition)			
Gasoline (Low Boiling Point Naphtha - Unspe				
ph	Not applicable.			
tert-butylmethyl ether; MTBE; 2-methoxy-2-m	ethylpropane (1634-04-4)			
ph	Not applicable			
Ethyl T-Butyl Ether (637-92-3)				
ph	Not applicable			
Further information : Germ cell mutagenicity : Further information : Carcinogenicity :	Not classified (Based on the available data, the classification criteria are not met) (depending on composition) It can cause genetic defects. (depending on the composition) According to EU criteria, the presence of benzene in a concentration greater than 0.1 % by weight classifies this product as Mutagen Category 1b, H340 May cause cancer. (depending on composition)The product is to be considered carcinogenic due to the presence of benzene; In addition, other chemical compounds potentially present in the product may have harmful effects in the event of prolonged exposure. Therefore, exposure should be limited. Benzene has been classified by the EU as a Carcinogen Category 1 and declared carcinogenic by the IARC. In fact, epidemiological studies have confirmed an increased incidence of leukemia in individuals exposed to this chemical compared to those			
	not exposed.			
Gasoline (Low Boiling Point Naphtha - Unspe	cified) (Benzene > 0,1% w) (86290-81-5)			
NOAEL (chronic, oral, animal/male, 2 years)	50 μl/day No - Observed Adverse Effect Level			
tert-butylmethyl ether; MTBE; 2-methoxy-2-m	ethylpropane (1634-04-4)			
NOAEL (chronic,oral,animal/female,2 years)	330 mg/kg body weight (OECD 451)			
Ethyl T-Butyl Ether (637-92-3)				
NOAEL (chronic,oral,animal/female,2 years)	542 – 560 mg/kg body weight (Japan Bioassay Research Center 2010a)			
2-methyl-2-methoxybutane; Terz-amyl methyl	2-methyl-2-methoxybutane; Terz-amyl methyl ether (994-05-8)			
NOAEL (chronic, oral, animal/male, 2 years)	> 330 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD TG 451 (Carcinogenicity studies)			
NOAEL (chronic,oral,animal/female,2 years)	> 1042 mg/kg body weight Animal: rat, Animal sex: female, Guideline: OECD Guideline 451 (Carcinogenicity studies)			
Reproductive toxicity :	Suspected of damaging fertility. Suspected of damaging the unborn child.			

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Further information	: (depending on composition)Estimate based on components. In accordance with EU criteria the presence of toluene at concentration greater than 3% by weight classifies this product classified as Repr. 2, H 361d. The substance n-Hexane is classified as Repr. 2 (CLP), as it has shown adverse effects on the reproductive system in animal studies (rats). The actual relevance to humans has not been established.
Ethyl T-Butyl Ether (637-92-3)	
NOAEL (Animal/Male, F0/P)	300 – 1000 mg/kg body weight
Specific Target Organ Toxicity (STOT) — single	: May cause drowsiness or dizziness.
exposure Further information	: (depending on composition) The product is highly volatile, even at room temperature. Exposure to high concentrations of vapours, especially in closed or poorly ventilated areas, may cause respiratory irritation, nausea, discomfort, and dizziness, potentially leading to unconsciousness.
Gasoline (Low Boiling Point Naphtha - Uns	pecified) (Benzene > 0,1% w) (86290-81-5)
Specific Target Organ Toxicity (STOT) — single exposure	It can cause drowsiness or dizziness.
tert-butylmethyl ether; MTBE; 2-methoxy-2-	methylpropane (1634-04-4)
NOAEC (inhalation, rat, vapour)	800 ppmv/6h/day
Ethyl T-Butyl Ether (637-92-3)	
NOAEC (inhalation, rat, vapour)	800 ppmv/6h/day
Specific Target Organ Toxicity (STOT) — single exposure	It can cause drowsiness or dizziness.
2-methyl-2-methoxybutane; Terz-amyl meth	yl ether (994-05-8)
Specific Target Organ Toxicity (STOT) — single exposure	It can cause drowsiness or dizziness.
Toluene (108-88-3)	
Specific Target Organ Toxicity (STOT) — single exposure	It can cause drowsiness or dizziness.
n-Hexane (110-54-3)	
Specific Target Organ Toxicity (STOT) — single exposure	It can cause drowsiness or dizziness.
Specific Target Organ Toxicity (STOT) — repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
Further information	: (depending on composition)
Gasoline (Low Boiling Point Naphtha - Unsp	pecified) (Benzene > 0,1% w) (86290-81-5)
NOAEL (subacute, oral, animal/male, 28 days)	< 500 mg/kg body weight
NOAEC (inhalation,rat,vapour,90 days)	10000 mg/m³ OECD 413.
tert-butylmethyl ether; MTBE; 2-methoxy-2-	methylpropane (1634-04-4)
LOAEL (oral,rat,90 days)	200 – 357 mg/kg body weight/day
NOAEL (oral,rat,90 days)	209 – 300 mg/kg body weight/day
NOAEC (inhalation,rat,vapour,90 days)	500 – 800 mg/m³
Ethyl T-Butyl Ether (637-92-3)	
LOAEL (oral,rat,90 days)	28 – 46 mg/kg body weight/day (Japan Bioassay Research Center 2010a, OECD 453)
NOAEL (oral,rat,90 days)	120 – 170 mg/kg body weight/day (Japan Bioassay Research Center 2010a, OECD 453)
NOAEC (inhalation,rat,vapour,90 days)	500 – 2100 mg/m³ (Japan Bioassay Research Center 2010b, OECD 453)

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2-methyl-2-methoxybutane; Terz-amyl methyl	ether (994-05-8)
NOAEL (oral,rat,28 days)	125 mg/kg body weight/day
NOAEC (inhalation,rat,gas,28 days)	250 ppmv/6h/day
NOAEL (oral,rat,90 days)	125 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 407 (28-day repeated dose oral toxicity study in rodents)
Toluene (108-88-3)	
LOAEL (oral,rat,90 days)	1250 mg/kg body weight
NOAEL (oral,rat,90 days)	625 mg/kg body weight
NOAEC (inhalation,rat,vapour,90 days)	2,355 mg/l air
Specific Target Organ Toxicity (STOT) — repeated exposure	May cause damage to organs through prolonged or repeated exposure.
benzene (71-43-2)	
NOAEL (oral,rat,90 days)	100 mg/kg body weight Animal: rat, animal sex: male, Guideline: OECD TG 408 (90-day repeated dose oral toxicity study in rodents)
Specific Target Organ Toxicity (STOT) — repeated exposure	May cause damage to organs through prolonged or repeated exposure.
n-Hexane (110-54-3)	
Specific Target Organ Toxicity (STOT) — repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Further information :	May be fatal if swallowed and enters airways. (depending on composition) For all petroleum products with a viscosity of less than 20,5 mm2/s at 40 °C, a specific risk is associated with the aspiration of liquid into the lungs, which may occur directly after ingestion, or subsequently if vomiting occurs, either spontaneously or if induced. In this case, chemical pneumonia may develop, a condition requiring medical treatment and which can be fatal. Aspiration into the lungs may cause chemical pneumonitis.
Gasoline (all types)	
Viscosity, kinematics	< 1 mm²/s (40 °C) (ASTM D 445)
Gasoline (Low Boiling Point Naphtha - Unspe	cified) (Benzene > 0.1% w) (86290-81-5)
Viscosity, kinematics	< 1 mm²/s (37,8 °C, (ASTM D 445)
tert-butylmethyl ether; MTBE; 2-methoxy-2-meth	ethylpropane (1634-04-4)
Viscosity, kinematics	0,464 mm²/s (20°C)
Ethyl T-Butyl Ether (637-92-3)	
Viscosity, kinematics	0,47 mm ² /s (40°C)
110000119; 11111011101100	<u> </u>
2-methyl-2-methoxybutane; Terz-amyl methyl	ether (994-05-8)
	ether (994-05-8) 0,494 – 0.6 mm²/s
2-methyl-2-methoxybutane; Terz-amyl methyl	
2-methyl-2-methoxybutane; Terz-amyl methyl Viscosity, kinematics	
2-methyl-2-methoxybutane; Terz-amyl methyl Viscosity, kinematics ethanol, ethyl alcohol (64-17-5)	0,494 - 0.6 mm²/s

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11.2. Information on other hazards

11.2.1. Endocrine Disrupting Properties

Adverse health effects caused by endocrinedisrupting properties

: None. The mixture does not contain any substance(s) included in the list established in accordance with Article 59(1) of the REACH Regulation for having endocrine disrupting properties, or any substance(s) identified as having endocrine disrupting properties according to 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

Possible harmful effects on humans and possible symptoms

: May cause cancer. May cause genetic defects. Suspected of damaging fertility. Suspected of damaging the unborn child. Irritating to the skin. Repeated and prolonged contact may cause skin redness, irritation and contact dermatitis due to its defatting effect. Eye contact may cause temporary redness and irritation. High vapor concentrations may cause: migraine, nausea, dizziness. High concentrations may cause damage to the digestive system, kidneys and central nervous system.

Other information None

SECTION 12: Ecological Information

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Ecology - general

: Toxic to aquatic organisms, may cause long-term negative effects for the aquatic environment. Dispersion into the environment can lead to the contamination of environmental compartments (air, soil, subsoil, surface water and groundwater). Use according to good working practice, avoiding release of the product into the environment. Inform authorities if the product is discharged into the sewage system or public waters.

Ecology - air

: Due to the characteristics of the components, part of the product evaporates quickly, dispersing into the air: this phenomenon may contribute to the formation of photochemical smog. Use vapor recovery systems if necessary.

Ecology - water

Toxic to aquatic organisms.

Hazardous to the aquatic environment, short-term (acute)

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

Hazardous to the aquatic environment, long-term

: Toxic to aquatic organisms with long-lasting effects.

(chronic)			
Gasoline (Low Boiling Point Naphtha - Unspecified) (Benzene > 0.1% w) (86290-81-5)			
CL50 - Fish [1]	5,4 mg/l 48 h		
CL50 - Fish [2]	8,2 mg/l LL50, 96 h		
EC50 - Crustaceans [1]	4,5 mg/l EL50, 48 h		
EC50 - Other aquatic organisms [1]	3,1 mg/l EL50, 72 h (Selenastrum capricornutum)		
EC50 - Other aquatic organisms [2]	15,4 mg/l EC50, 48 h (Tetrahymena Pyriformis)		
NOEC (chronic)	2,6 mg/l NOELR, 21 d (Pimephales promelas)		
tert-butylmethyl ether; MTBE; 2-methoxy-2-methylpropane (1634-04-4)			
CL50 - Fish [1]	672 – 980 mg/l (Pimephales promelas - ASTM E1241-92 - WAF, US EPA, OECD)		

tert-butylmethyl ether; MTBE; 2-methoxy-2-methylpropane (1634-04-4)			
CL50 - Fish [1]	672 – 980 mg/l (Pimephales promelas - ASTM E1241-92 - WAF, US EPA, OECD)		
CL50 - Fish [2]	574 mg/l (Menidia berylline - OECD Guideline 203)		
EC50 - Crustaceans [1]	472 mg/l (Daphnia Magna - EPA OPPTS 850.1010)		
EC50 - Other aquatic organisms [1]	187 mg/l (Americamysis bahia - EPA OPPTS 850.1035)		
CE50 72h - Algae [1]	> 908.7 mg/l (Desmodesmus subspicatus, OECD 201)		
CE50 96h - Algae [1]	184 mg/l (Pseudokirchneriella subcapitata, US EPA, WAF)		
LOEC (chronic)	50 mg/l Americamysis bahia - EPA OPPTS 850.1350		
NOEC (chronic)	26 mg/l Americamysis bahia - EPA OPPTS 850.1350		
NOEC Chronic Fish	450 mg/l (31d, Pimephales promelas, ASTM E1241-92)		

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tert-butylmethyl ether; MTBE; 2-methoxy-2-m	ethylpropane (1634-04-4)
NOEC chronic crustaceans	51 mg/l (21d, EPA OPPTS 850.1300)
Ethyl T-Butyl Ether (637-92-3)	
CL50 - Fish [1]	> 974,1 mg/l (Poecilia reticulata - Slovnaft VÚRUP,a.s. (2005b)) (OECD 203)
CL50 - Fish [2]	574 mg/l (Menidia berylline - BenKinney MT, Barbieri JF, Gross JS & Naro PA (1994)) (OECD 203)
EC50 - Crustaceans [1]	110 mg/l (Daphnia Magna - SafePharm Laboratories (2003a)) (OECD 202)
EC50 - Other aquatic organisms [1]	37 mg/l (Americamysis bahia - T.R. Wilbury Laboratories, Inc. (1994)) (EPA OTS 797.1930)
CE50 72h - Algae [1]	1100 mg/l (Selenastrum capricornutum - Safe Pharm Laboratories (2003b)) (OECD 201)
CE50 72h - Algae [2]	380,68 mg/l (Desmodesmus subspicatus - Slovnaft VÚRUP, a.s. (2005d) (OECD 201)
LOEC (chronic)	50 mg/l Americamysis bahia - EPA OPPTS 850.1350
NOEC (chronic)	26 mg/l Americamysis bahia - EPA OPPTS 850.1350
NOEC Chronic Fish	64 mg/l (5d, Danio rerio, OECD 212)
NOEC chronic crustaceans	51 mg/l (21d, Wildlife International Ltd. (1999)) (EPA OPPTS 850.1300)
2-methyl-2-methoxybutane; Terz-amyl methyl	ether (994-05-8)
CL50 - Fish [1]	580 mg/l (Oncorhynchus mykiss)
EC50 - Crustaceans [1]	100 mg/l (Daphnia magna)
CE50 72h - Algae [1]	230 mg/l (Raphidocelis subcapitata)
CE50 72h - Algae [2]	780 mg/l (Raphidocelis subcapitata)
NOEC (chronic)	3.39 mg/l (Americamysis bahia, 28d)
NOEC Chronic Fish	299 – 450 mg/l (31d)
NOEC chronic crustaceans	51 mg/l (21d)
ethanol, ethyl alcohol (64-17-5)	
CL50 - Fish [1]	14.2 – 15,4 g/l (Pimephales promelas)
CL50 - Fish [2]	13 g/l (Psalm gairdneri)
EC50 - Crustaceans [1]	12,34 g/l (Daphnia Magna)
EC50 - Crustaceans [2]	5,012 g/l (Cériodaphnia dubia)
EC50 - Other aquatic organisms [1]	23,9 g/l (Artemia salina) (24h)
EC50 - Other aquatic organisms [2]	857 mg/l (Artemia salina nauplii) (48 hours)
CE50 72h - Algae [1]	275 mg/l (Chlorella vulgaris)
CE50 72h - Algae [2]	12900 mg/l (Selenastrum capricornutum)
CE50 96h - Algae [1]	675 – 22000 mg/l
ErC50 algae	275 mg/l (Chlorella vulgaris)
NOEC chronic crustaceans	> 10 mg/l Daphnia (21 days)
NOEC chronic algae	3,24 g/l (Skeletonema costatum) (5 days)
Toluene (108-88-3)	
CL50 - Fish [1]	5,5 mg/l
LOEC (chronic)	2,76 mg/l
NOEC (chronic)	0,74 mg/l

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Toluene (108-88-3)		
NOEC Chronic Fish	1,39 mg/l	
benzene (71-43-2)		
CL50 - Fish [1]	5,3 mg/l (Oncorhynchus mykiss)	
CE50 72h - Algae [1]	32 mg/l (Raphidocelis subcapitata)	
CE50 72h - Algae [2]	100 mg/l (Raphidocelis subcapitata)	
NOEC Chronic Fish	0,8 mg/l (Pimephales promelas, 32d)	
n-Hexane (110-54-3)		
CL50 - Fish [1]	> 1000 mg/l 48 h	
EC50 - Crustaceans [1]	21,85 mg/l	
CE50 72h - Algae [1]	9,28 mg/l	

12.2. Persistence and degradability

12.2. Persistence and degradability			
Gasoline (all types)			
Persistence and degradability	The main constituents of the product are to be considered "inherently" biodegradable, but not "readily" biodegradable: therefore they may be moderately persistent, particularly in anaerobic conditions.		
Gasoline (Low Boiling Point Naphtha - Unspe	cified) (Benzene > 0,1% w) (86290-81-5)		
Persistence and degradability	From an environmental point of view, the product should be considered as "non-persistent", according to the criteria of the REACH reg., Annex XIII (point 1.1).		
Biodegradation	The test methods for this endpoint are not applicable to UVCB substances		
tert-butylmethyl ether; MTBE; 2-methoxy-2-m	ethylpropane (1634-04-4)		
Persistence and degradability	Half-life: 3 - 6 days, Readily biodegradable.		
Biodegradation	100 % after 30 hours		
Ethyl T-Butyl Ether (637-92-3)			
Persistence and degradability	Half-life: 5 - 6 days, Readily biodegradable.		
Biodegradation	100 % (30h,OECD Guideline 301 D)		
2-methyl-2-methoxybutane; Terz-amyl methyl ether (994-05-8)			
Persistence and degradability	Rapidly degradable		
ethanol, ethyl alcohol (64-17-5)			
Persistence and degradability	Rapidly degradable		
Toluene (108-88-3)			
Persistence and degradability	Rapidly degradable		
benzene (71-43-2)			
Persistence and degradability	Rapidly degradable		
n-Hexane (110-54-3)	n-Hexane (110-54-3)		
Persistence and degradability	Rapidly degradable		

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12.3. Bioaccumulation potential

Gasoline (all types)			
Partition coefficient n-octanol/water (Log Pow)	Not applicable for mixtures		
Partition coefficient n-octanol/water (Log Kow)	Not applicable for mixtures		
Bioaccumulation potential	Due to the characteristics of the components, the product has a low biodegradability under anaerobic conditions, and may be persistent. Some of the compounds present in the product have a bioaccumulation potential and are harmful to aquatic organisms.		
Gasoline (Low Boiling Point Naphtha - Unspec	cified) (Benzene > 0,1% w) (86290-81-5)		
Bioaccumulation potential	Test methods for this endpoint are not applicable to UVCB substances.		
tert-butylmethyl ether; MTBE; 2-methoxy-2-meth	ethylpropane (1634-04-4)		
BCF - Fish [1]	1.4 – 1.5 28 days (Cyprinus carpio)		
Partition coefficient n-octanol/water (Log Pow)	1.06 (20°C)		
Bioaccumulation potential	Low bioaccumulation potential.		
Ethyl T-Butyl Ether (637-92-3)			
Partition coefficient n-octanol/water (Log Pow)	1,48 (25°C)		
Partition coefficient n-octanol/water (Log Kow)	> 3		
Bioaccumulation potential	Low bioaccumulation potential.		
2-methyl-2-methoxybutane; Terz-amyl methyl ether (994-05-8)			
Partition coefficient n-octanol/water (Log Pow)	1.55 (20 °C)		
ethanol, ethyl alcohol (64-17-5)			
Partition coefficient n-octanol/water (Log Kow)	-0,31		
Toluene (108-88-3)			
Bioconcentration factor (FCB REACH)	90		
Partition coefficient n-octanol/water (Log Kow)	2,73		

12.4. Mobility in soil

Gasoline (all types)		
Ecology - soil	Due to the characteristics of the components, part of the product evaporates quickly, dispersing into the air: this phenomenon contributes to the formation of photochemical smog. The remaining part has a low biodegradability under anaerobic conditions, and may be persistent. Some of the hydrocarbons potentially present have bioaccumulation potential and are harmful to aquatic organisms.	
Gasoline (Low Boiling Point Naphtha - Unspecified) (Benzene > 0.1% w) (86290-81-5)		
Mobility in soil	Not applicable (UVCB)	
Ecology - soil	Data not available.	
tert-butylmethyl ether; MTBE; 2-methoxy-2-methylpropane (1634-04-4)		
Normalized absorption coefficient of organic carbon (Log Koc)	0,95	
Ecology - soil	The product is highly volatile.	
Ethyl T-Butyl Ether (637-92-3)		
Ecology - soil	The product is highly volatile.	

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12.5. Results of the PBT and vPvB assessment

Gasoline (all types)		
This substance/mixture does not meet the PBT criteria of the REACH Regulation, Annex XIII		
This substance/mixture does not meet the vPvB criteri	a of the REACH Regulation, Annex XIII	
Component		
Substance(s) not meeting the PBT criteria of the REACH Regulation, in accordance with Annex XIII	Gasoline (low boiling point naphtha - unspecified) (benzene > 0.1 % w) (86290-81-5), tert-butylmethyl ether; MTBE; 2-methoxy-2-methylpropane (1634-04-4), Ethyl t-butyl ether (637-92-3)	
Substance(s) not meeting the vPvB criteria of REACH, in accordance with Annex XIII	Gasoline (low boiling point naphtha - unspecified) (benzene > 0.1 % w) (86290-81-5), tert-butylmethyl ether; MTBE; 2-methoxy-2-methylpropane (1634-04-4), Ethyl t-butyl ether (637-92-3)	

12.6. Endocrine Disrupting Properties

Adverse effects on the environment due to endocrine-disrupting properties

: None is known. The mixture does not contain any substance(s) included in the list established in accordance with Article 59(1) of REACH as having endocrine-disrupting properties, or any substance(s) identified as having endocrine-disrupting properties according to 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

Other adverse effects : None.

asoline (all types)			
Other information	This product does not have specific bacterial culture inhibition properties. In any case, water contaminated by the product must be treated in wastewater treatment plants suitable for this purpose.		
Gasoline (Low Boiling Point Naphtha - Unspecified) (Benzene > 0,1% w) (86290-81-5)			
Other information	This product does not have specific bacterial culture inhibition properties. In any case, water contaminated by the product must be treated in wastewater treatment plants suitable for this purpose.		
tert-butylmethyl ether; MTBE; 2-methoxy-2-methylpropane (1634-04-4)			
Other information	No other effects are known		
Ethyl T-Butyl Ether (637-92-3)	3utyl Ether (637-92-3)		
Other information	No other effects are known		

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Waste treatment methods :	:	Do not discharge the product, whether new or used, into sewers, tunnels or waterways.
		Collect and deliver to authorized collectors (Legislative Decree 152/2006 and related
		regulations).

- Recommendations for disposal in sewers

 : Do not distribute sludge generated by industrial water treatment on natural soils. Sludge generated from industrial water treatment must be incinerated, kept in containment, or treated.
- Advice for the disposal of the Product/Packaging

 : European Waste Catalogue code(s) (Decision 2001/118/EC): 13 07 02* ("Gasoline"). The EWC code indicated is only a general indication, based on the original composition of the product and its intended use. The user has the final responsibility for selecting the most appropriate EWC code, based on the actual use of the product, and any alterations or contamination.

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Additional information

Do not puncture, cut, grind, weld, braze, burn, or incinerate empty containers or drums that have not been decontaminated. Empty containers may contain flammable product residues. Dispose of empty containers that have not been decontaminated safely, in accordance with Italian Legislative Decree 152/2006 and subsequent amendments.

About Green Waste The product as such does not contain halogenated compounds.

European List of Wastes (LoW, EC 2150/2002) 13 07 02* - Gasoline

SECTION 14: Transportation Information

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

ADR	IMDG	IATA	DNA	RID	
14.1. UN number or ID n	umber				
UN 1203	UN 1203	UN 1203	UN 1203	UN 1203	
14.2. UN proper shippin	g name				
GASOLINE	GASOLINE	Gasoline	GASOLINE	GASOLINE	
Transport document descr	iption				
A 1203 GASOLINE, 3, II, (D/E), HAZARDOUS TO THE ENVIRONMENT	A 1203 GASOLINE, 3, II, MARINE POLLUTANT/ENVIRONME NTALLY HAZARDOUS	UN 1203 Gasoline, 3, II, ENVIRONMENTALLY HAZARDOUS	A 1203 GASOLINE, 3, II, HAZARDOUS TO THE ENVIRONMENT	A 1203 GASOLINE, 3, II, HAZARDOUS TO THE ENVIRONMENT	
14.3. Transport hazard o	classes				
3	3	3	3	3	
33	3	3	3	**************************************	
14.4. Packaging group					
II	II	II	II	II	
14.5. Environmental haz	zards				
Environmental hazardous: Yes	Environmental hazardous: Yes Marine pollutant: Yes EmS No. (Fire): F-E EmS No.: S-E	Environmental hazardous: Yes	Environmental hazardous: Yes	Environmental hazardous Yes	

14.6. Special precautions for users

Ground transport

Transport Regulations (ADR) : Subject to the provisions

: F1 Classification Code (ADR)

Special Provisions (ADR) 243, 534, 664

Limited quantities (ADR) 11 Exempt quantities (ADR) E2 Transport category (ADR) 2

Hazard identification number (n°. Kemler)

33 Orange panel

Tunnel Restriction Code (ADR) : D/E

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Sea transport

Transport Regulations (IMDG) : Subject to the provisions

Special Provisions (IMDG): 243Limited quantities (IMDG): 1 LExempt quantities (IMDG): E2IBC Packaging Instructions (IMDG): IBC02Stowage category (IMDG): E

Properties and Observations (IMDG) : Immiscible with water.

Air transport

Transport Regulations (IATA) : Subject to the provisions

Air passenger and cargo exempt quantities (IATA) : E2 Max. net quantity of limited air passenger and cargo : 1L

quantities (IATA)

Max. net quantities per passenger and cargo : 5L

aircraft (IATA)

Net quantity max. for passenger and cargo aircraft : 60L

(IATA)

Special Provisions (IATA) : A100 ERG Code (IATA) : 3H

River transport

Transport Regulations (ADN) : Subject to the provisions

Classification Code (ADN) : F1
Limited quantities (ADN) : 1 L
Exempt quantities (ADN) : E2
Required Equipment (ADN) : PP, EX, A
Ventilation (ADN) : VE01

Transport by rail

Transport Regulations (RID) : Subject to the provisions

Classification Code (RID): F1Special Provisions (RID): 243, 534Limited quantities (RID): 1LExempt quantities (RID): E2Transport category (RID): 2Hazard Identification Number (RID): 33

14.7. Bulk shipping in accordance with IMO acts

IBC Code : Not applicable (refer to MARPOL Annex I).

SECTION 15: Regulatory Information

15.1. Health, safety and environmental laws and regulations specific to the substance or mixture

15.1.1. EU Regulations

Additional Rules, Restrictions and Legal Requirements

: Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 on the registration, evaluation, authorisation and restriction of chemical substances (REACH). (et sequens). Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16 December 2008 on the classification, labelling and packaging of substances and mixtures amending and repealing Directives 67/548/EEC and 1999/45/EC and amending the Regulation (EC) No. 1907/2006 (et sequens). Substances that deplete the ozone layer (1005/2009) – substances listed in Annex I (ODP). POP (2019/1021) - Persistent organic pollutants. Regulation EU (649/2012) - Export and Import of Hazardous Chemicals (PIC). Commission Delegated Regulation (EU) 2017/2100. Commission Regulation (EU) 2018/605.

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REACH Annex XVII (List of Restrictions)

U Restriction List (Annex XVII of REACH)			
Reference code	Applicable to	Title or description	
5.	benzene	Benzene	
28.	Gasoline (low boiling point naphtha - unspecified) (benzene > 0,1 % p)	Substances classified as carcinogenic, category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and listed in Appendix 1 or 2, respectively.	
	Gasoline (low boiling point naphtha - unspecified) (benzene > 0,1 % p)	Substances classified as germ cell mutagenic, category 1A or 1B in Part 3 of Annex VI to Regulation (EC) No 1272/2008 and listed in Appendix 3 or 4 respectively.	
	Gasoline (all types); Gasoline (low boiling point naphtha - unspecified) (benzene > 0,1 % p); tert- butylmethyl ether; MTBE; 2-methoxy-2- methylpropane; Ethyl t- butyl ether; 2-methyl-2- methoxybutane; tert-amyl methyl ether; ethanol, ethyl alcohol; Toluene; benzene; n-Hexane	Substances or mixtures that meet the criteria for one or more of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 Types A to F	
	Gasoline (all types); Gasoline (low boiling point naphtha - unspecified) (benzene > 0,1 % p); tert- butylmethyl ether; MTBE; 2-methoxy-2- methylpropane; Ethyl t- butyl ether; 2-methyl-2- methoxybutane; tert-amyl methyl ether; Toluene; benzene; n-Hexane	Substances or mixtures that meet the criteria for one or more of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or development, 3.8 effects other than narcotic effects, 3.9 and 3.10	
, ,	Gasoline (all types); Gasoline (low boiling point naphtha - unspecified) (benzene > 0,1 % p); Toluene; n-Hexane	Substances or mixtures that meet the criteria for one or more of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1	
	Gasoline (all types); GAsoline (low boiling point naphtha - unspecified) (benzene > 0,1 % p); tert-butylmethyl ether; MTBE; 2-methoxy- 2-methylpropane; Ethyl t- butyl ether; 2-methyl-2-	Substances classified as flammable gases of category 1 or 2, flammable liquids of category 1, 2, or 3, flammable solids of category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases of category 1, 2, or 3, pyrophoric liquids of category 1, or pyrophoric solids of category 1, even if they are not listed in Annex VI, Part 3, of Regulation (EC) No. 1272/2008.	
	methoxybutane; tert-amyl methyl ether; ethanol, ethyl alcohol; Toluene; benzene; n-Hexane		

Annex XIV REACH (Authorization List)

Does not contain any substances listed in Annex XIV of REACH (Authorization List)

List of substances included in the "Candidate List" of the REACH Regulation (SVHC)

Does not contain any substances listed in the REACH Candidate List

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PIC Regulation (Prior Informed Consent)

Contains one or more substances listed in the PIC list (EU Regulation 649/2012 concerning the export and import of hazardous chemicals): Benzene (71-43-2).

POP Regulation (Persistent Organic Pollutants)

Does not contain any substances listed in the POP list (EU Regulation 2019/1021 on persistent organic pollutants).

Ozone Regulation (2024/590)

Does not contain any substances listed in the ozone depletion list (Regulation EU 2024/590 on substances that deplete the ozone layer).

Council Regulation (EC) on the control of dual-use items

Does not contain any substances subject to the COUNCIL REGULATION (EC) on the control of dual-use items.

Seveso Directive (disaster risk reduction)

Seveso Further information : Seveso Category: P5a

Explosives Precursors Regulation (2019/1148)

It does not contain any substances listed in the Explosives Precursors Regulation list (Regulation EU 2019/1148 on the marketing and use of explosives precursors).

Drug Precursors Regulation (273/2004)

Contains one or more substances listed in the Drug Precursors Regulation list (Regulation (EC) 273/2004 on the manufacture and placing on the market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

Name	CN designation	CAS Number	CN Code	Category Subcategory	Threshold	Annex
Toluene		108-88-3	2902 30 00	Category 3		Annex I

15.1.2. National Regulations

Legislative Decree n. 81/2008, on "Implementation of art. 1 of the law 3 August 2007, regarding health protection and safety in the workplace" Legislative Decree n. 105/2015 (adoption of Directive 2012/18/EC on the control of major-accident hazards involving certain dangerous substances) Legislative Decree n. 152/06 "Norms in environmental matters", and successive modifications and integrations

Legislative Decree n. 151/2001 (T.U. of the legislative provisions on the protection and support of maternity and paternity)

France

Occupational diseases					
Code	Description				
RG 4	Hemopathies caused by benzene and all products containing it				
RG 4 BIS	Gastrointestinal diseases caused by benzene, toluene, xylenes and all products containing them				
RG 59	Occupational poisoning from hexane				
RG 84	Conditions caused by liquid organic solvents for professional use: saturated or unsaturated or cyclic aliphatic liquid hydrocarbons and mixtures thereof; halogenated liquid hydrocarbons; nitrate derivatives of aliphatic hydrocarbons; alcohols; glycols, glycols ethers; ketones; aldehydes; aliphatic and cyclic ethers, including tetrahydrofuran; esters; dimethylformamide and dimethylacetamide; acetonitrile and propionitrile; pyridine; dimethyl sulfone and dimethyl sulfoxide				

Germany

Restrictions on use

: Employment bans or restrictions for the protection of young people in the workplace pursuant to § 22 JArbSchG in the case of the formation of dangerous substances must be observed.

The prohibitions and restrictions pursuant to § 4 and §5 MuSchArbV must be observed.

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National Laws and Recommendations

: TRGS 400: Risk assessment for activities involving hazardous substances.

TRGS 401: Risks arising from skin contact - identification, assessment, measures.

TRGS 402: Identification and assessment of risks from inhalation exposure during activities with hazardous substances.

TRGS 500: Protective measures.

TRGS 510: Storage of hazardous substances in non-fixed tanks.

TRGS 555: Work instructions and information for workers.

TRGS 720 / TRBS 2152: Explosive atmospheres - general.

TRGS 727: Prevention of ignition hazards due to electrostatic charges.

TRGS 751 / TRBS 3151: Prevention of fire, explosion and pressure hazards at service stations and gas refueling systems for land vehicles.

TRGS 800: Fire protection measures.

TRGS 900: Occupational exposure limits.

TRGS 903: Biological limit values.

TRGS 905: List of mutagenic, carcinogenic or teratogenic substances.

TRGS 910: Measures of the related risk concept for activities involving hazardous

carcinogenic substances.

WGK 3, Highly hazardous to water (classification according to AwSV, Annex 1).

The classification is based on the Ordinance on Facilities for the Handling Substances Hazardous to Water (Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV)) of 18 April 2017 (BGBI 2017, Teil I, Nr. 22, Seite 905).

LGK 3 - Flammable liquids.

Storage class (LGK, TRGS 510)

Water hazard class (WGK) (D)

Joint Storage Table

WGK note

:	LGK 1	LGK 2A	LGK 2B	LGK 3	LGK 4.1A
	LGK 4.1B	LGK 4.2	LGK 4.3	LGK 5.1A	LGK 5.1B
	LGK 5.1C	LGK 5.2	LGK 6.1A	LGK 6.1B	LGK 6.1C
	LGK 6.1D	LGK 6.2	LGK 7	LGK 8A	LGK 8B
	LGK 10	LGK 11	LGK 12	LGK 13	LGK 10-13

Joint storage permitted for : LGK 1, LGK 2A, LGK 4.1A, LGK 4.1B, LGK 4.2, LGK 4.3, LGK 5.1A, LGK 5.1C, LGK 5.2, LGK 6.1B, LGK 6.2, LGK 7.

Restricted joint storage permitted for : LGK 5.1B, LGK 6.1D, LGK 11, LGK 10-13.

Joint storage permitted for

Chemical Prohibition Ordinance (ChemVerbotsV)

: LGK 2B, LGK 3, LGK 6.1A, LGK 6.1C, LGK 8A, LGK 8B, LGK 10, LGK 12, LGK 13.

This product is subject to Annex 2 of ChemVerbotsV, entry 1. The following requirements must be observed: authorization requirement (according to § 6 paragraph 1 sentence 1), basic requirements for delivery (according to § 8 paragraphs 1, 3 and 4), identification and documentation (according to § 9 paragraphs 1 to 3) and exclusion from shipping route (according to § 10).

Hazardous Incident Ordinance (12. BImSchV) : Not subject to the Hazardous Incident Ordinance (12. BImSchV)

Holland

ABM Category

Z(2) - biodegradable substances with hazardous properties for humans and the environment (carcinogenicity/mutagenicity/reproductive toxicity/bioaccumulation potential or toxicity)

SZW-lijst van kankerverwekkende stoffen

The following substances are listed: Gasoline (low boiling point naphtha - not specified) (benzene > 0.1 % w), ethanol, ethyl alcohol, benzene

SZW-lijst van mutagene stoffen

The following substances are listed: Gasoline (low boiling point naphtha - not specified) (benzene > 0.1 % w), benzene

SZW-lijst van reprotoxische stoffen - Borstvoeding

The following substances are listed: ethanol, ethyl alcohol

SZW-lijst van reprotoxische stoffen -

The following substances are listed: Ethanol, Ethyl Alcohol, N-Hexane

Vruchtbaarheid

03/06/2025 (Revision Date)

: ethanol, ethyl alcohol, Toluene are listed

SZW-lijst van reprotoxische stoffen - Ontwikkeling

Denmark

: Class I-1 Fire hazard class Storage unit 1 liter

F+ <Flam. Liq. 1>; For the storage of flammable liquids, follow the guidelines for emergency Classification remarks

Danish National Regulations Pregnant/breastfeeding women working with the product must not come into direct contact

The requirements of the Danish Authority for Occupational Safety regarding work with carcinogenic substances must be followed during use and disposal.

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Switzerland

Storage class (LK) : LK 3 - Flammable liquids

Chemicals Ordinance (ChemO, SR 813.11) : Group 1

15.2. Chemical Safety Assessment

No chemical safety assessment has been carried out for this mixture

A chemical safety assessment has been carried out for the following substances in this mixture:

Gasoline (low boiling point naphtha - unspecified) (benzene > 0,1 % p)

tert-butylmethyl ether; MTBE; 2-methoxy-2-methylpropane

Ethyl t-butyl ether

2-methyl-2-methoxybutane; Tert-amyl methyl ether

ethanol, ethyl alcohol

SECTION 16: Other Information

Indications of changes:

EU SDS format according to COMMISSION REGULATION (EU) 2020/878. All sections.

Abbreviations and ac	ronyms:	
	Full text of the H sentences referenced in this safety data sheet. These statements are for information only and may not correspond to the actual classification of the product.	
	N/D = not available	
	N/A = not applicable	
ADN	European Agreement on the International Carriage of Dangerous Goods by Inland Waterways	
ADR	European Agreement on the International Carriage of Dangerous Goods by Road	
STA	Acute toxicity estimate	
BCF	Bioconcentration factor	
CAS Number	Chemical Abstract Service (CAS) Number	
CLP	Classification, Labelling and Packaging Regulation (EC) No 1272/2008	
DMEL	Derived Minimal Effect Level	
DNEL	Derived No-Effect Level	
EC number	European Community Number	
EC50	Effective concentration for 50% of the tested population (median effective concentration)	
ED	Endocrine Disruptor	
IARC	International Agency for Research on Cancer	
IATA	International Air Transport Association	
IMDG	International Maritime Dangerous Goods Code	
IOELV	Indicative Occupational Exposure Limit Value	
LC50	Lethal concentration for 50% of the tested population (median lethal concentration)	
LD50	Lethal dose resulting in the death of 50% of the tested population (median lethal dose)	
LOAEC	Lowest Observed Adverse Effect Concentration	
LOAEL	Lowest Observed Adverse Effect Level	
NOAEC	No Observed Adverse Effect Concentration	
NOAEL	No Observed Adverse Effect Level	
NOEC	No Observed Effect Concentration	

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Abbreviations and acronyms:			
N.A.S.	Not otherwise specified		
OECD	Organisation for Economic Co-operation and Development		
OEL	Occupational Exposure Limit		
PBT	Persistent, bioaccumulative and toxic		
PNEC	Predicted No-Effect Concentration		
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals, Regulation (EC) No 1907/2006			
RID	Regulation on the International Carriage of Dangerous Goods by Rail		
SDS	Safety Data Sheet		
STP	Sewage Treatment Plant		
TRGS	Technical Rules for Hazardous Substances		
VOC	Volatile organic compounds		
vPvB	Very persistent and very bioaccumulative		
WGK	Water Hazard Class		

Data	Sou	rces

: This Safety Data Sheet is based on the characteristics of the components/additives, according to the information provided by the original suppliers. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (et sequens). Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Training advice

Other information

- Provide adequate training to professional operators on the use of Personal Protective Equipment (PPE), based on the information contained in this Safety Data Sheet.
- Do not use the product for purpose not specified by the manufacturer. If hydrogen sulfide (H2S) inhalation is suspected, rescuers must wear suitable respiratory equipmentharnesses, and safety ropes, and follow established emergency procedures. Transfer the injured person to a hospital immediately. Immediately begin artificial respiration if breathing has stopped. Administer oxygen if necessary. This warning is particularly relevant for operations involving direct exposure to vapors inside tanks or other confined spaces.

Full text of hazard statements H and EUH:		
Acute Tox. 4 (orally) Acute toxicity (oral), category 4		
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic hazard, category 2	
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic hazard, category 3	
Asp. Tox. 1	Aspiration hazard, category 1	
Carc. 1A	c. 1A Carcinogenicity, category 1A	
Carc. 1B Carcinogenicity, category 1B		
Eye Irrit. 2 Serious eye damage/eye irritation, category 2		
Flam. Liq. 1	am. Liq. 1 Flammable liquids, category 1	
Flam. Liq. 2 Flammable liquids, category 2		
Muta 1B Germ cell mutagenicity, category 1B		
Repr. 2 Reproductive toxicity, category 2		
Skin Irrit. 2	Skin corrosion/irritation, category 2	
STOT RE 1 Specific target organ toxicity – repeated exposure, category 1		

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Full text of hazard statements H and EUH:			
STOT RE 2	Specific Target Organ Toxicity – Repeated Exposure, Category 2		
STOT SE 3	Specific Target Organ Toxicity – Single Exposure, Category 3 – Narcosis		
H224	Highly flammable liquid and vapors.		
H225	Easily flammable liquid and vapours.		
H302	Harmful if swallowed.		
H304	May be fatal if swallowed and enters airways.		
H315	Causes skin irritation.		
H319	It causes severe eye irritation.		
H336	May cause drowsiness or dizziness.		
H340	May cause genetic defects.		
H350	May cause cancer.		
H361d	Suspected of damaging the unborn child.		
H361f	Suspected of damaging fertility.		
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.		
H372	It causes organ damage with prolonged or repeated exposure.		
H373	May cause damage to organs through prolonged or repeated exposure.		
H411	Toxic to aquatic organisms with long-lasting effects.		
H412 Harmful to aquatic organisms with long-lasting effects.			

Full text of usage descriptors:				
ERC1 Manufacture of the substance				
ERC2	Formulation of mixtures			
ERC3	Formulation in solid matrix			
ERC4	Industrial use of non-reactive processing aids (not included inside or on the surface of the article)			
ERC5	Industrial use resulting in inclusion inside or on the surface of an article			
ERC6a	Use of intermediates			
ERC6b	Industrial use of reactive processing aids (without inclusion inside or on the surface of the article)			
ERC6c	Industrial use of monomers in polymerization processes (with or without inclusion inside or on the surface of the article)			
ERC6d	Industrial use of reaction process regulators in polymerization (with or without inclusion in or on the surface of an article)			
ERC7	Industrial use of functional fluids			
ERC9a	General use of functional fluids (indoor use)			
ERC9b	General use of functional fluids (outdoor use)			
ESVOC SPERC 1.1b.v1	Distribution: Industrial (SU3)			
ESVOC SPERC 2.2.v1	Formulation and packaging of preparations and mixtures: industrial (SU10)			
ESVOC SPERC 4.3a.v1	Uses in coatings: industrial (SU3)			
ESVOC SPERC 4.4a.v1 Use in Cleaning Agents: Industrial (SU3)				
ESVOC SPERC 4.7a.v1	Metal working fluids and rolling oils: Industrial (SU3)			
ESVOC SPERC 7.12a.v1	Use as fuel: industrial (SU3)			

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Full text of usage descriptors:				
ESVOC SPERC 9.12b.v1 Use as fuel: Professional (SU22)				
ESVOC SPERC 9.12c.v1	Use as fuel: Consumer (SU21)			
PC13	Fuels			
PROC1	Chemical production or refining in closed process without likelihood of exposure or processes with equivalent containment conditions			
PROC15	Laboratory reagents use			
PROC16	Use of fuels			
PROC2	Chemical production or refining in a closed continuous process with occasional controlled exposure or processes with equivalent containment conditions			
PROC3	Manufacture or formulation of chemical substances in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions			
PROC8a	Transfer of substance or preparation (filling/emptying) at non-dedicated facilities			
PROC8b	Transfer of substance or mixture (filling/emptying) at dedicated facilities			
PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)			
SU10	Formulation [mixing] of preparations and/or repackaging (except alloys)			
SU11	Manufacture of rubber products			
SU21	Consumer uses: households (= general public = consumers)			
SU22	Professional uses: public domain (administration, education, entertainment, services, crafts)			
SU3	Industrial uses: use of substances as such or in preparations at industrial sites			

Classification and procedures used to determine the classification of mixtures pursuant to Regulation (EC) 1272/2008 [CLP]:				
Flam. Liq. 1 H224 Based on experimental data: Weight of evidence		Based on experimental data: Weight of evidence		
Skin Irrit. 2	H315	Calculation method		
Muta. 1B	H340	Concentration limits		
Carc. 1A	H350	Concentration limits		
Repr. 2	H361fd	Concentration limits		
STOT SE 3	H336	Calculation method		
Asp. Tox. 1	H304	Calculation method		
Aquatic Chronic 2 H411 Calculation method		Calculation method		

Safety Data Sheet (SDS), EU

The information and recommendations contained herein are, to the best of JENERGY's knowledge, accurate and reliable as of the date of publication. JENERGY can be contacted to ensure that this document is the most up-to-date version available from JENERGY. The information and recommendations are offered for the user's consideration and evaluation, and it is the user's responsibility to determine whether the product is appropriate for their specific use. All information provided should be considered as a guide for safe handling, use, processing, storage, transportation, disposal, and release, and should not be considered as a warranty or quality specification of the product. The information refers only to the specific material designated and may not be valid for the same material when used in combination with any other materials or in any other process, unless specified otherwise. This safety data sheet contains only information relevant to health, safety, and environmental requirements and is not a replacement for any product information or specification. If the buyer repackages this product, they must ensure that appropriate health and safety information is included in the container. Appropriate labeling and safe handling procedures must be made available to the carrier and the user. Alterations to this document are strictly prohibited.

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ANNEX

EXPOSURE SCENARIOS Related to the components GASOLINE (all types), ETBE, MTBE, **TAME** and Ethanol



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Identified use name	Sector	Area of use SU	Process Categories PROC	Environmental Release Categories ERC	Specific environmental release categories SpERC
01a- Distribution of the substance (GEST1A_I) Industrial (G26)	Industrial	3	1, 2, 3., 8a, 8b, 15	1,2,3,4,5,6a,6b,6c,6d,7	ESVOC SpERC 1.1b.v1
02- Formulation and (re)packaging of substances and mixtures (GEST2_I) Industrial (G26)	Industrial	3,10	1, 2, 3., 8a, 8b, 15	2	ESVOC SpERC 2.2.v1
03a-Use in coatings (GEST3_I) Industrial (G26)	Industrial	3	1, 2, 3., 8a, 8b, 15	4	ESVOC SpERC 4.3a.v1
04a-Use in cleaning products (GEST4_I) Industrial (G26)	Industrial	3	1, 2, 3., 8a, 8b.	4	ESVOC SpERC 4.4a.v1
12a- Use as fuel (GEST12_I): Industrial (G26)	Industrial	3	1, 2, 3., 8a, 8b, 16	7	ESVOC SpERC 7.12a.v1
12b- Use as fuel (GEST12_I) Professional (G27)	Professional	22	1, 2, 3., 8a, 8b, 16	9a,9b	ESVOC SpERC 9.12b.v1
12c- Use as fuel (GEST12_I) Consumer (G28)	Consumer	21	13	9a,9b	ESVOC SpERC 9.12c.v1
19- Rubber manufacturing and processing (GEST19_I) Industrial (G26)	Industrial	3,10.11	1,2,3,8b,9,15	1 ,4,6d	ESVOC SpERC4.19.v1



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Index

GA:	Containing between 0% and 1% benzene)	Δ
1.	Distribution of the substance	
<u>-</u> . 2.	Formulation and (re)packaging of substances and mixtures	
 3.	Use in coatings	
4.	Use in cleaning products	
5.	Use as fuel – Industrial sector	
6.	Use as fuel - Professional sector	
7.	Fuel use - Consumers	23
8.	Rubber manufacturing and processing	26
ETE	BE	29
1.	Formulation of ETBE	29
2.	Distribution of ETBE	32
3.	Use of ETBE in fuels - Industrial sector	35
4.	Use of ETBE in fuels – Professional sector	37
5.	Use of ETBE in fuels – Consumers	39
MT	BE	
1.	Formulation of MTBE	
2.	Use of MTBE as intermediate - Industrial	
3.	Use of MTBE as a Process Solvent and Extraction Agent - Industrial	
4.	Transport and Distribution of MTBE - Industrial	
5.	Use of MTBE in Fuels - Industrial	
6.	Use of MTBE in Fuels - Professional	
7.	Use of MTBE in fuels - Consumers	
	ME	
1.	Formulation of TAME	
2.	Transport and Distribution of TAME	
3.	Use in fuels - Industrial	
4.	Use in fuels - Professional	
5.	Use in fuels - Consumers	
	IANOL	
1.	Industrial distribution of Ethanol	
2.	Industrial formulation and re-packaging of Ethanol and its mixtures	
3.	Use of Ethanol as automotive fuel by consumers	79

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GASOLINE (Low boiling point naphtha classified as R45 and/or R46 and/or R62 and/or R63 (containing between 0% and 1% benzene)

1. Distribution of the substance

Section 1 Exposure scenario titled: L	ow boiling	point naphtha containing between 0% and 1% benzene		
Title				
Distribution of the substance				
Use Descriptor				
Sector of use		3		
Process Categories		1, 2, 3, 8a, 8b, 15		
Environmental Release Categories		1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7		
Specific Environment Release Categ	ories	ESVOC SpERC 1.1b.v1		
Processes, tasks, activities covered		•		
	s/barges,	ank trucks/railcars, and IBCs) in closed or contained systems,		
		, storage, unloading, maintenance, and associated laboratory		
activities (CGES1A_I).	_			
Assessment Method				
See section 3.				
Section 2 Operating Conditions and	Risk Mana	gement Measures		
Section 2.1 Control of worker exposu	ıre			
Product Characteristics				
Physical state of product	Liquid, v	apor pressure > 10 kPa under standard conditions (OC5).		
Concentration of substance in	Covers a	percentage of substance in the product up to 100% (unless		
product	otherwis	e stated) (G13).		
Quantity used	Not app	icable.		
Frequency and duration of	Covers of	vers daily exposure of up to 8 hours (unless otherwise specified) (G2).		
use/exposure				
Human factors not influenced by	Not app	icable		
risk management				
Other operational conditions		s use of the product at a temperature not exceeding 20 °C above		
affecting exposure	ambient temperature, unless otherwise specified (G15). Assumes the			
		on of an adequate basic standard of hygiene in the workplace		
	(G1).			
Scenario characteristics Specific measures for risk management and operational conditions				
General Measures (Skin Irritants)		rect contact with the skin. Identify potential areas of indirect skin		
(G19)		Wear protective gloves (tested according to EN374) if skin contact		
	is likely. Eliminate contamination/spills as soon as they occur.			
	Immediately remove any contamination from the skin. Provide basic			
	training to personnel aimed at preventing/limiting exposure and report the			
Constal massacras (saveine dens)	_	any dermatological problems (E3).		
General measures (carcinogens) (G18)		r technical advances and process upgrades (including automation)		
(018)	to eliminate spills. Limit exposure by adopting measures such as closed systems, dedicated systems and and appropriate general/local exhaust			
	ventilation systems. Drain systems and clean transfer lines before			
	discontinuing containment. Clean/purge equipment, where possible before			
	maintenance. Where there is a possibility of exposure: restrict access to			
	authorized personnel only, provide operators with specific training on the			
	activities and operations to be performed in order to minimize the risk of			
		exposure, wear gloves and protective suits to prevent skin contamination,		
	-	piratory protection when required for certain exposure scenarios,		
		ately eliminate any spills, and dispose of waste safely. Ensure the		
		of safe work systems or equivalent solutions for risk		
		ment. Inspect, check, and regularly maintain all control devices		
	and mea	• • • • • • • • •		



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	Consider the need for a risk-based health surv	
General exposures (closed	Handle the substance in a closed system (E47).	
systems) (CS15) + sampling (CS56)	Sampling using a closed circuit or a system do (E8).	esigned to prevent exposure
	Wear protective gloves compliant with standa	
General exposures (closed systems) (CS15) + Outdoors (OC9)	Handle the substance in a closed system (E47	7).
Sampling during the process (CS2)	Sampling using a closed circuit or a system do (E8).	esigned to prevent exposure
Laboratory activities (CS36)	Handle only under a fume hood or use equiva exposure risks (E12).	lent methods to minimize
Bulk closed loading and unloading (CS501).	Ensure material transfers are under contain (E66).	nment or extract ventilation
Equipment Cleaning and Maintenance (CS39) Drain down and flush system prior to equipment break-in or maintena (E55). Store drains in sealed containers pending disposal or subsequent recycling (ENVT4). Remove spills immediately (C&H13). Wear chemical-resistant gloves (compliant with EN374 standard), together with basic training (PPE16).		posal or subsequent
Storage (CS67) Ensure the operation is carried out outdoors (E69). Store the substance within a closed system (E84).		
Section 2.2 Environmental Exposure		
Product characteristics		
Substance is complex UVCB (PrC3). F	Predominantly hydrophobic (PrC4a)	
Amounts used		
Fraction of EU tonnage used in region	n (A1)	0.1
Regional tonnage (tonnes/year) (A2)	` '	1.87e7
Fraction of regional tonnage used loc		0.002
Annual site tonnage (tonnes/year) (A5)		3.75e4
Maximum Daily Site Tonnage (kg/day) (A4)		1.2e5
Frequency and duration of use	J / (/	1 =
Continuous release (FD2)		
		300
Environmental factors not influenced	by risk management	1
Local freshwater dilution factor (EF1)		10
Local marine water dilution factor (EF2) 100		100



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Other operational conditions affecting environmental exposure	
Fraction released into the air from process (initial release before risk management	0.001
measures are applied) (00C4)	
Fraction released into waste water from process (initial release before risk management	0.00001
measures are applied) (OOC5)	
Fraction released into soil from process (initial release before risk management	0.00001
measures are applied) (00C6)	
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used (To	CS1)
Technical onsite conditions and measures to reduce or limit discharges, air emissions and	d releases to soil
Environmental risk is related to indirect exposure of humans via ingestion (TCR1k).	
In case of discharge to an urban wastewater treatment plant, no treatment is required (To	CR9).
Treat emissions in such a way as to ensure a typical removal efficiency of (%) (TCR7).	90
Treat wastewater on site (before discharge) to ensure the required removal efficiency ≥	12
(%)	
In case of discharge to an urban wastewater treatment plant, ensure the required	0
removal efficiency on site ≥ (%)	
Organizational measures to prevent/limit release from the site (1286)	
Do not spread sludge generated from industrial water treatment on natural land (OMS2).	
Sludge generated from industrial water treatment must be incinerated, kept under contain	nment. or treated
(OMS3)	,
Conditions and measures related to municipal sewage treatment plant (1273)	
. , ,	
Estimated removal of the substance in wastewater by a municipal wastewater treatme	nt 95.5
plant (%) (STP3)	
Total removal efficiency from wastewater after applying on-site and off-site RMM	/ls 95.5
(municipal wastewater treatment) (%) (STP4)	
Maximum safe site tonnage (MSafe) based on release after total wastewater removal	1.1e6
treatment (kg/day) (STP6)	
Assumed flow rate of the municipal wastewater treatment plant (m³/day) (STP5)	2000
Conditions and measures related to external treatment of waste for disposal (1272)	
This substance is consumed during use and no waste related to the substance is genera	ated, to be disposed of
(ETW5).	atou, to be unopered of
Conditions and measures related to external recovery of waste (1271)	
External waste collection and recycling must comply with applicable local and/or nationa	Llegislation (FRW1).
Section 3 Exposure Estimation	rogiolation (Ertviz).
3.1 Health	
For the purpose of assessing workplace exposure levels, where not explicitly specified, the	FCFTOC TRA method
was used (G21).	Louison IIIA IIICIIIOG
3.2 Environment	
The Hydrocarbon Block Method (HBM) was used to calculate environmental exposure with	the Petrorisk model
(EE2).	i alo i caolist illoudi
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Section 4

4.1 Health

Exposures are not expected to exceed the DN(M)EL when the Risk Management Measures (RMMs) and Operational Conditions (OCs) described in Section 3 are applied (G22).

Where different Risk Management Measures/Operating Conditions are in place, users are required to ensure that risks are managed at least at an equivalent level (G23).

Available hazard data do not support the derivation of a DNEL for skin irritation effects (G32).

Available hazard data do not support the need to establish a DNEL for other health effects (G36).

Risk Management Measures are based on the qualitative characterization of risk (G37).

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 [DSU1].

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2].

Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3].

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reachfor-industrieslibraries.html) [DSU4].

Complies with Regulation (EU) No. 2020/878 as amended.

2. Formulation and (re)packaging of substances and mixtures

	ntitled Low	boiling point naphthenes containing between 0% and 1% benzene	
Title			
Formulation and (re)packaging of si	ubstances a	and mixtures	
Use Descriptor			
Sector of use		3, 10	
Process Categories		1, 2, 3, 8a, 8b, 15	
Environmental Release Categories		2	
Specific Environment Release Cates	gories	ESVOC SpERC 2.2.v1	
Processes, tasks, activities covered			
		in continuous and batch operations within closed systems or	
		sure during storage, material transfer, mixing, maintenance,	
sampling, and associated laboratory	y activities	(E14).	
Assessment Method			
See section 3.	al alala maam	adam and management	
Section 2 Operational conditions an	a risk man	agement measures	
Section 2.1 Control of worker expos	ilire		
Product Characteristics			
Physical state of product	Liguid. v	apor pressure > 10 kPa under standard conditions (OC5).	
Concentration of substance in		percentage substance in the product up to 100 %	
product		stated differently) (G13).	
Quantity used	Not app	*, \ ,	
Frequency and duration of		laily exposure of up to 8 hours (unless otherwise specified) (G2).	
use/exposure		, , , , , , , , , , , , , , , , , , , ,	
Human factors not influenced by	Not app	licable.	
risk management			
Other operational conditions	Assumes use of the product at a temperature not exceeding 20°C above		
affecting exposure	ambient	temperature, unless otherwise specified (G15). Assumes the	
		ion of an adequate basic standard of hygiene in the workplace	
	(G1).		
Scenario characteristics		risk management measures and operational conditions	
General Measures (Skin Irritants)		rect contact with the skin. Identify potential areas of indirect skin	
(G19)		Wear protective gloves (tested according to EN374) if skin contact	
	_	Eliminate contamination/spills as soon as they occur.	
		ately remove any contamination from the skin. Provide basic	
		to personnel aimed at preventing/limiting exposure and report the	
Conord magaures (savainagens)		any dermatological problems (E3).	
General measures (carcinogens) (G18)		r technical advances and process upgrades (including automation nate spills. Limit exposure by adopting measures such as closed	
(G18)		, dedicated systems and and appropriate general/local exhaust	
		on systems. Drain systems and clean transfer lines before	
		nuing containment. Clean/purge equipment, where possiblebefor	
		ance. Where there is a possibility of exposure: restrict access to	
		ed personnel only, provide operators with specific training on the	
		s and operations to be performed in order to minimize the risk of	
		e, wear gloves and protective suits to prevent skin contamination	
		iratory protection when required for certain exposure scenarios,	
	-	ately eliminate any spills, and dispose of waste safely. Ensure the	
	adoption	n of safe work systems or equivalent solutions for risk	
	manage	ment. Inspect, check, and regularly maintain all control devices	
	and mea	asures.	
		r the need for a risk-based health surveillance system (G20).	
General Exposures (Closed		he substance in a closed system (E47).	
Systems) (CS15) + sampling	-	g using a closed circuit or a system designed to prevent exposure	
(CS56)	(E8).		



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	Wear protective gloves compliant with standard EN	27 <i>1</i> (DDF15)		
Canaral Expansion (Classed		1374 (FFE19).		
General Exposures (Closed Systems) (CS15) + Outdoors (OC9)	ns) (CS15) + Outdoors (OC9)			
Sampling during the process (CS2)	Sampling using a closed circuit or a system designed to prevent exposure (E8).			
Laboratory activities (CS36)	Handle only under a fume hood or use equivalent nexposure risks (E12).	nethods to minimize		
Bulk product transfer (CS14)	Ensure material transfers are under containment (E66).	t or extract ventilation		
Drum/batch transfers (CS8)	Ensure material transfers are under containment (E66).	t or extract ventilation		
Equipment Cleaning and Maintenance (CS39)				
Section 2.2 Environmental Exposure	Control			
Product characteristics				
Substance is complex UVCB (PrC3). F	Predominantly hydrophobic (PrC4a)			
Amounts used				
Fraction of EU tonnage used in region	n (A1)	0.1		
Regional tonnage (tonnes/year) (A2)		1.65e7		
Fraction of regional tonnage used loo		0.0018		
Annual site tonnage (tonnes/year) (A		3.0e4		
Maximum Daily Site Tonnage (kg/day) (A4) 1.0e5				
Frequency and duration of use	77.			
Continuous release (FD2)				
Emission days (days/year) (FD4) 300				
Environmental factors not influenced by risk management				
Local freshwater dilution factor (EF1) 10				
Local marine water dilution factor (EF2) 100				
Other given operational conditions affecting environmental exposure				
	(initial release prior to risk management measures) ((0004)		
		0.025		
, , ,				
measures) (00C5) Release fraction to soil from process (initial release prior to risk management measures) 0.002				
` '	(00C6) Fraction released into soil from process (initial release before risk management 0.0001			
	Technical conditions and measures at process level (source) to prevent release			
Common practices vary across sites thus conservative process release estimates used (TCS1)				
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil				
	ubstances or recover them from wastewater (TRC14)			
Environmental risk is related to indire	ect exposure of humans via ingestion (TCR1k).			
In case of discharge to an urban wastewater treatment plant, no treatment is required (TCR9). Treat emissions in such a way as to ensure a typical removal efficiency of (%) (TCR7). 56.5				
Treat wastewater on site (before discharge) to ensure the required removal efficiency ≥ 95.594.7				
(%)				
In case of discharge to an urban wastewater treatment plant, ensure the required removal efficiency on site ≥ (%)				
Organizational measures to prevent/limit release from the site (1286)				
Do not spread sludge generated from industrial water treatment on natural land (OMS2). Sludge generated from industrial water treatment must be incinerated, kept under containment, or treated (OMS3).				
Conditions and measures related to	municipal sewage treatment plant (1273)			
· · · · · · · · · · · · · · · · · · ·	<u> </u>			



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Complies with Regulation (EU) No. 2020/878 as amended.

Estimated removal of the substance in wastewater by a municipal wastewater treatment	95.5
plant (%) (STP3).	
Total removal efficiency from wastewater after applying on-site and off-site RMMs	95.5
(municipal wastewater treatment) (%) (STP4).	
Maximum safe site tonnage (MSafe) based on release after total wastewater removal	1.0e5
treatment (kg/day) (STP6).	
Assumed flow rate of the municipal wastewater treatment plant (m³/day) (STP5).	2000

Conditions and measures related to external treatment of waste for disposal (1272)

External waste treatment and disposal must comply with applicable local and/or national legislation (ETW3).

Conditions and measures relating to external waste recovery (1271)

External waste collection and recycling must comply with applicable local and/or national legislation (ERW1).

Section 3 Exposure Estimation

3.1 Health

For the purpose of assessing workplace exposure levels, where not explicitly specified, the ECETOC TRA method was used (G21).

3.2 Environment

The Hydrocarbon Block Method (HBM) was used to calculate environmental exposure with the Petrorisk model (EE2).

Section 4

4.1 Health

Exposures are not expected to exceed the DN(M)EL when the Risk Management Measures (RMMs) and Operational Conditions (OCs) described in Section 3 are applied (G22).

Where different Risk Management Measures/Operating Conditions are in place, users are required to ensure that risks are managed at least at an equivalent level (G23).

Available hazard data do not support the derivation of a DNEL for skin irritation effects (G32).

Available hazard data do not support the need to establish a DNEL for other health effects (G36).

Risk Management Measures are based on the qualitative characterization of risk (G37).

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 [DSU1].

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2].

Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3].

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industrieslibraries.html) [DSU4].

Complies with Regulation (EU) No. 2020/878 as amended.

3. Use in coatings

Title	ng point naphtha containing between 0% and 1% benzene
Use in coatings	
Use Descriptor	
Sector of use	3
Process Categories	1, 2, 3, 8a, 8b, 15
Environmental Release Categories	4
Specific Environment Release Categories	ESVOC SpERC 4.3a.v1
Processes, tasks, activities covered	·
	ives, etc.) within closed systems or under containment, including

Covers use in coatings (paints, inks, adhesives, etc.) within closed systems or under containment, including accidental exposure during use (receipt of material, storage, preparation and transfer of bulk or semi-bulk products, application and film formation activities), equipment cleaning, maintenance, and associated laboratory activities (CGES3_I).

Assessment Method

See section 3.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker expos	ure
Product Characteristics:	••••
Physical state of product	Liquid, vapor pressure > 10 kPa under standard conditions (OC5).
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) (G13).
Quantity used	Not applicable.
Frequency and duration of use/exposure	Covers daily exposure of up to 8 hours (unless otherwise specified) (G2).
Human factors not influenced by risk management	Not applicable.
Other operational conditions affecting exposure	Assumes use of the product at a temperature not exceeding 20 °C above ambient temperature, unless otherwise specified (G15). Assumes the application of an adequate basic standard of hygiene in the workplace (G1).
Scenario characteristics	Specific measures for risk management and operational conditions
General Measures (Skin Irritants) (G19)	Avoid direct contact with the skin. Identify potential areas of indirect skin contact. Wear protective gloves (tested according to EN374) if skin contact is likely. Eliminate contamination/spills as soon as they occur. Immediately remove any contamination from the skin. Provide basic training to personnel aimed at preventing/limiting exposure and report the onset of any dermatological problems (E3).
General measures (carcinogens) (G18)	Consider technical advances and process upgrades (including automation) to eliminate spills. Limit exposure by adopting measures such as closed systems, dedicated systems and and appropriate general/local exhaust ventilation systems. Drain systems and clean transfer lines before discontinuing containment. Clean/purge equipment, where possiblebefore maintenance. Where there is a possibility of exposure: restrict access to authorized personnel only, provide operators with specific training on the activities and operations to be performed in order to minimize the risk of exposure, wear gloves and protective suits to prevent skin contamination, use respiratory protection when required for certain exposure scenarios, immediately eliminate any spills, and dispose of waste safely. Ensure the adoption of safe work systems or equivalent solutions for risk management. Inspect, check, and regularly maintain all control devices and measures. Consider the need for a risk-based health surveillance system (G20).
Film formation -	Handle the substance in a closed system (E47).
force drying, stoving	(=)-



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occurs through doors, windows, etc. In controlled ventilation environments, air is introduced or removed by an electric extractor (£1). General Exposures (Closed Systems) (CS15) Handle the substance in a closed system (£47). Ensure an adequate standard of general ventilation. Natural ventilation occurs through doors, windows, etc. in controlled ventilation environments, air is introduced or removed by an electric extractor (£1). Froduct transfers (C3) Ensure material transfers are under containment or extract ventilation (£66). Laboratory activities (CS36) Handle only under a fume hood or use equivalent methods to minimize exposure risks (£12). Equipment Cleaning and Drain down and flush system prior to equipment break-in or maintenance (£55). Store drains in sealed containers pending disposal or subsequent recycling (£6VT4). Remove spills immediately (C&H13). Wear chemical-resistant gloves (compliant with EN374 standard), together with basic training (PPE16). Storage (CS67) Store the substance within a closed system (£84). Section 2.2 Control of environmental exposure Product characteristics Substance is complex UVC8 (PrC3). Predominantly hydrophobic (PrC4a) Amounts used Fraction of EU tonnage used in region (A1) Regional tonnage (tonnes/year) (A2) G.2e3 Fraction of EU tonnage used locally (A3) Annual site tonnage (tonnes/year) (A5) Regional tonnage (tonnes/year) (A5) Regional tonnage (tonnes/year) (A5) Remission days (days/year) (FD4) Environmental factors not influenced by risk management Coal freshwater dilution factor (EF1) Local marine water dilution factor (EF2) 100 Other given operational conditions affecting environmental exposure Release fraction to air from process (initial release prior to risk management measures) O(DC6) Release fraction to soll from process (initial release prior to risk management measures) O(DC6) Release fraction to soll from process (initial release prior to risk management measures) O(DC6) Release fraction to soll from process (initial release				
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Do not spread sludge generated from industrial water treatment on natural land (OMS2). Sludge generated from industrial water treatment must be incinerated, kept under containment, or treated (OMS3)		m h h 4000		
Sludge generated from industrial water treatment must be incinerated, kept under containment, or treated (OMS3)				
(OMS3)				August - d
Conditions and measures related to municipal sewage treatment plant (1273)	(OMS3)		nment, or	treated
, ,	Conditions and measures related to	municipal sewage treatment plant (1273)		



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Complies with Regulation (EU) No. 2020/878 as amended.

Estimated removal of the substance from wastewater via urban sewage treatment (%) (STP3).	95.5
Total removal efficiency from wastewater after applying on-site and off-site RMMs (municipal wastewater treatment) (%) (STP4).	95.5
Maximum safe site tonnage (MSafe) based on release after total wastewater removal treatment (kg/day) (STP6).	2.1e4
Assumed flow rate for the urban wastewater treatment plant (m3/d) (STP5)	2000

Conditions and measures related to external treatment of waste for disposal (1272)

External waste treatment and disposal must comply with applicable local and/or national legislation (ETW3).

Conditions and measures relating to external waste recovery (1271)

External waste collection and recycling must comply with applicable local and/or national legislation (ERW1).

Section 3 Exposure Estimation

3.1 Health

For the purpose of assessing workplace exposure levels, where not explicitly specified, the ECETOC TRA method was used (G21).

3.2 Environment

The Hydrocarbon Block Method (HBM) was used to calculate environmental exposure with the Petrorisk model (EE2).

Section 4

4.1 Health

Exposures are not expected to exceed the DN(M)EL when the Risk Management Measures (RMMs) and Operational Conditions (OCs) described in Section 3 are applied (G22).

Where different Risk Management Measures/Operating Conditions are in place, users are required to ensure that risks are managed at least at an equivalent level (G23).

Available hazard data do not support the derivation of a DNEL for skin irritation effects (G32).

Available hazard data do not support the need to establish a DNEL for other health effects (G36).

Risk Management Measures are based on the qualitative characterization of risk (G37).

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 [DSU1].

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2].

Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3].

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reachfor-industrieslibraries.html) [DSU4].

Complies with Regulation (EU) No. 2020/878 as amended.

4. Use in cleaning products

	g Point Na	afte Scenario Containing Between 0% and 1% Benzene
Title		
Use in cleaning products (GEST4_I)		
Use Descriptor		
Sector of use		3
Process Categories		1, 2, 3, 8a, 8b
Environmental Release Categories		4
Specific Environment Release Category	ories	ESVOC SpERC 4.4a.v1
Processes, tasks, activities covered		
		oducts within closed systems or under containment, including age, mixing/dilution in the preparatory phase and during cleaning
activities, as well as cleaning and ma	aintenanc	e of equipment (CGES4_I).
Assessment Method		
See section 3.		
Section 2 Operational conditions and	l risk man	agement measures
Section 2.4 Control of worker expens		
Section 2.1 Control of worker exposured Product Characteristics:	II C	
	liannial .	anner arressore > 10 laBe and arrest and and distinct (005)
Physical state of product		apor pressure > 10 kPa under standard conditions (0C5).
Concentration of t substance in		percentage of substance in the product up to 100% (unless
product		se stated) (G13).
Quantity used	Not app	
Frequency and duration of use/exposure		a daily exposure of up to 8 hours (unless otherwise specified) (G2).
Human factors not influenced by risk management	Not app	
Other operating conditions	It assumes that the product is used at a temperature not exceeding 20°	
affecting exposure	C above	the ambient temperature, unless otherwise specified (G15).
		pposes the application of an appropriate basic standard for
		in the workplace (G1).
Scenario characteristics		risk management measures and operating conditions
General Measures (Skin Irritants) (G19)	contact. is likel Immedia training onset of	rect contact with the skin. Identify potential areas of indirect skin Wear protective gloves (tested according to EN374) if skin contact y. Eliminate contamination/spills as soon as they occur. ately remove any contamination from the skin. Provide basic to personnel aimed at preventing/limiting exposure and report the any dermatological problems (E3).
General measures (carcinogens) (G18)	to eliminal systems ventilati disconti mainten authoriz activities exposur use respirated adoption manage and mea Conside	r the need for a risk-based health surveillance system (G20).
Bulk product transfer (CS14)		naterial transfers are under containment or extract on (E66).



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Use in contained systems (020)	Honella substance within a classed system (F47)		
Use in contained systems (C38),	Handle substance within a closed system (E47).	274 (DDE4E)	
Automated process with (semi)	Wear protective gloves compliant with standard EN	374 (PPE15).	
closed systems. (CS93).			
Filling/preparation of equipment			
from drums or containers (CS45).	ventilation (E66).		
Equipment Cleaning and	Drain down and flush system prior to equipment br	eak-in or maintenance	
Maintenance (CS39)	(E55).	av aubaaauant	
	Store drains in sealed containers pending disposal recycling (ENVT4).	or subsequent	
	Remove spills immediately (C&H13).		
	Wear chemical-resistant gloves (compliant with EN	374 standard),	
	together with basic training (PPE16).		
Storage (CS67)	Store the substance within a closed system (E84).		
Section 2.2 Control of environmental	exposure		
Product characteristics			
Substance is complex UVCB (PrC3). F	Predominantly hydrophobic (PrC4a)		
Quantities used			
Fraction of EU tonnage used in region	0.1		
Regional tonnage (tonnes/year) (A2)		5.12e2	
Fraction of regional tonnage used locally (A3)		0.2	
Annual site tonnage (tonnes/year) (A5)		1.0e2	
Maximum Daily Site Tonnage (kg/da	5.0e3		
Frequency and duration of use			
Continuous release (FD2)			
Emission days (days/year) (FD4) 20			
Environmental factors not influenced	l by risk management		
Local freshwater dilution factor (EF1)		10	
Local marine water dilution factor (EF2)		100	
Other operational conditions affecting environmental exposure			
Fraction released into the air from process (initial release before risk management 1.0			
measures are applied) (00C4)			
Fraction released into waste water from process (initial release before risk management		0.00003	
measures are applied) (00C5)			
Fraction released into soil from p	0		
measures are applied) (00C6)			



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Complies with Regulation (EU) No. 2020/878 as amended.

Technical	conditions and measures at process level (source) to prevent release
Common	practices vary across sites thus conservative process release estimates used (TCS1)
Technical	onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil
Drovent t	he release of undisselved substances or recover them from wastewater (TPC14)

Prevent the release of undissolved substances or recover them from wastewater (TRC14).

Environmental risk is related to indirect exposure of humans via ingestion (TCR1k).

In case of discharge to an urban wastewater treatment plant, no treatment is required (TCR9).

Treat emissions in such a way as to ensure a typical removal efficiency of (%) (TCR7). 70

Treat wastewater on site (before discharge) to ensure the required removal efficiency ≥ 4.4
(%)

In case of discharge to an urban wastewater treatment plant, ensure the required removal efficiency on site \geq (%)

Organizational measures to prevent/limit release from the site (1286)

Do not spread sludge generated from industrial water treatment on natural land (OMS2).

Sludge generated from industrial water treatment must be incinerated, kept under containment, or treated (OMS3).

Conditions and measures related to municipal sewage treatment plant (1273)

Estimated substance removal from wastewater via urban treatment plant (%) (STP3).	95.5
Total efficiency of removal from wastewater after onsite and	95.5
offsite (urban treatment plant) RMMs (%) (STP4)	
Maximum allowable tonnage for the site (MSafe) based on release after total	2.9e4
wastewater removal treatment (kg/d) (STP6).	
Assumed flow rate for the urban wastewater treatment plant (m3/d) (STP5)	2000

Conditions and measures relating to the external treatment of waste for disposal (1272)

External waste treatment and disposal must comply with applicable local and/or national legislation (ETW3).

Conditions and measures relating to external waste recovery (1271)

External waste collection and recycling must comply with applicable local and/or national legislation (ERW1).

Section 3 Exposure Estimation

3.1 Health

For the purpose of assessing workplace exposure levels, where not explicitly specified, the ECETOC TRA method was used (G21).

3.2 Environment

The Hydrocarbon Block Method (HBM) was used to calculate environmental exposure with the Petrorisk model (EE2).

Section 4

4.1 Health

Exposures are not expected to exceed the DN(M)EL when the Risk Management Measures (RMMs) and Operational Conditions (OCs) described in Section 3 are applied (G22).

Where different Risk Management Measures/Operating Conditions are in place, users are required to ensure that risks are managed at least at an equivalent level (G23).

Available hazard data do not support the derivation of a DNEL for skin irritation effects (G32).

Available hazard data do not support the need to establish a DNEL for other health effects (G36).

Risk Management Measures are based on the qualitative characterization of risk (G37).

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 [DSU1].

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2].

Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3].

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reachfor-industrieslibraries.html) [DSU4].

Complies with Regulation (EU) No. 2020/878 as amended.

5. Use as fuel - Industrial sector

•	ng Point Na	afte Scenario Containing Between 0% and 1% Benzene
Title		
Use as Fuel		
Use Descriptor		3
Sector of use		
Category Processing		1, 2, 3, 8a, 8b, 16
Environmental Release Categories	·	7 FCV00 C=FD0 7.40c v4
Specific Environment Release Category	ories	ESVOC SpERC 7.12a.v1
Processes, tasks, activities covered	and additive component) within closed systems or under containment,	
including accidental exposure during	g activities	associated with transfer, use, equipment maintenance, and
waste product handling (CGES12_I).		
Assessment Method		
See section 3.		
Section 2 Operational conditions an	d risk man	agement measures
Section 2.1 Control of worker expos	ure	
Product Characteristics		
Physical state of product		rapor pressure > 10 kPa under standard conditions (OC5).
Concentration of substance in	Covers p	percentage substance in the product up to 100% (unless stated
product	differen	tly) (G13).
Quantity used	Not app	licable.
Frequency and duration of	Covers a	a daily exposure of up to 8 hours (unless otherwise specified) (G2).
use/exposure		
Human factors not influenced by risk management	Not app	licable.
Other operational conditions	Assume	s use of the product at a temperature not exceeding 20°C above
affecting exposure	ambient	temperature, unless otherwise specified (G15). Assumes the
	applicat (G1).	ion of an adequate basic standard of hygiene in the workplace
Scenario characteristics	Specific	risk management measures and operational conditions
General Measures (Skin Irritants) (G19)	Avoid di contact. is likely. Immedia training	rect contact with the skin. Identify potential areas of indirect skin Wear protective gloves (tested according to EN374) if skin contact Eliminate contamination/spills as soon as they occur. ately remove any contamination from the skin. Provide basic to personnel aimed at preventing/limiting exposure and report the any dermatological problems (E3).
General measures (carcinogens) (G18)	to elimin systems ventilati disconti mainten authoriz activities exposur use respimmedia adoption manage and mea	r technical advances and process upgrades (including automation nate spills. Limit exposure by adopting measures such as closed is, dedicated systems and and appropriate general/local exhaust on systems. Drain systems and clean transfer lines before nuing containment. Clean/purge equipment, where possiblebefore nance. Where there is a possibility of exposure: restrict access to red personnel only, provide operators with specific training on the s and operations to be performed in order to minimize the risk of re, wear gloves and protective suits to prevent skin contamination, piratory protection when required for certain exposure scenarios, ately eliminate any spills, and dispose of waste safely. Ensure the n of safe work systems or equivalent solutions for risk rement. Inspect, check, and regularly maintain all control devices assures.
Closed discharge of bulk products (CS502)		material transfers are under containment or extract ventilation



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Drum/batch transfers (CS8)	Ensure material transfers are under containment (E66).	or extract ventilation	
Refueling (CS 507)	Ensure material transfers are under containment (E66).	or extract ventilation	
Aircraft Refueling (CS508)	Ensure material transfers are under containment (E66).	or extract ventilation	
General Exposures (Closed	Handle the substance in a closed system (E47).		
Systems) (CS15)	Ensure an adequate standard of general ventilati	on. Natural ventilation	
	occurs through doors, windows, etc. In controlled ve		
	air is introduced or removed by an electric extracto	r (E1).	
Use as fuel (Handle the substance in a closed system (E47).		
GEST12_I), (closed systems) (CS107)			
Equipment Cleaning and	Drain down system prior to equipment break-in or I		
Maintenance (CS39)	Store drains in sealed containers pending disposal or subsequent		
	recycling (ENVT4).		
	Remove spills immediately (C&H13).		
	Ensure an adequate standard of general ventilation		
	occurs through doors, windows, etc. In controlled ve		
	environments, air is introduced or removed by an e		
	Wear chemical-resistant gloves (compliant with EN3 with basic training (PPE16).	or4 Standard), together	
Storage (CS67)	Store the substance within a closed system (E84).		
Storage (CSC1)	Ensure an adequate standard of general ventilati	on Natural ventilation	
	occurs through doors, windows, etc. In controlled ve		
	air is introduced or removed by an electric extracto		
Section 2.2 Control of environmen		` '	
Product characteristics	•		
Substance is complex UVCB (PrC3). Predominantly hydrophobic (PrC4a)		
Quantities used			
Fraction of EU tonnage used in reg	gion (A1)	0.1	
Regional tonnage (tonnes/year) (A	A2)	1.4e6	
Fraction of regional tonnage used		1	
Annual site tonnage (tonnes/year		1.4e6	
Maximum Daily Site Tonnage (kg/	'day) (A4)	4.6e6	
Frequency and duration of use			
Continuous release (FD2)			
Emission days (days/year) (FD4)		300	
Environmental factors not influen			
Local freshwater dilution factor (E	,	10	
Local marine water dilution factor		100	
Other given operational conditions	s affecting environmental exposure		
Release fraction to air from proce (00C4)	ss (initial release prior to risk management measures)	0.0025	
	om process (initial release prior to risk management	0.00001	
Release fraction to soil from proce	ess (initial release prior to risk management measures)	0	
(0006)			
	es at process level (source) to prevent release		
	es thus conservative process release estimates used [To	_	
	neasures to reduce or limit discharges, air emissions and	releases to soil	
	direct exposure of humans via ingestion (TCR1k).	3DO)	
	vastewater treatment plant, no treatment is required (TO	1	
	to ensure a typical removal efficiency of (%) (TCR7).	99.4	
(%)	discharge) to ensure the required removal efficiency ≥	76.9	
(70)			



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Complies with Regulation (EU) No. 2020/878 as amended.

In case of discharge to an urban wastewater treatment plant, ensure the required	0
removal efficiency on site ≥ (%)	
Organizational magazines to provent (limit release from the site (4.996)	

Organizational measures to prevent/limit release from the site (1286)

Do not spread sludge generated from industrial water treatment on natural land (OMS2).

Sludge generated from industrial water treatment must be incinerated, kept under containment, or treated (OMS3)

Conditions and measures related to municipal sewage treatment plant (1273)				
Estimated substance removal from wastewater via urban treatment plant (%) (STP3).	95.5			
Total efficiency of removal from wastewater after onsite and	95.5			
offsite (urban treatment plant) RMMs (%) (STP4)				
Maximum allowable tonnage for the site (MSafe) based on release after total	4.6e6			
wastewater removal treatment (kg/d) (STP6).				
Assumed flow rate for the urban wastewater treatment plant (m3/d) (STP5)	2000			

Conditions and measures related to external treatment of waste for disposal (1272)

Combustion emissions limited by required exhaust emission controls (ETW1).

Combustion emissions considered in regional exposure assessment (ETW2).

Conditions and measures relating to external waste recovery (1271)

External treatment and disposal of waste should comply with applicable local and/or national legislation (ERW3).

Section 3 Exposure Estimation

3.1 Health

For the purpose of assessing workplace exposure levels, where not explicitly specified, the ECETOC TRA method was used (G21).

3.2 Environment

The Hydrocarbon Block Method (HBM) was used to calculate environmental exposure with the Petrorisk model (EE2).

Section 4

4.1 Health

Exposures are not expected to exceed the DN(M)EL when the Risk Management Measures (RMMs) and Operational Conditions (OCs) described in Section 3 are applied (G22).

Where different Risk Management Measures/Operating Conditions are in place, users are required to ensure that risks are managed at least at an equivalent level (G23).

Available hazard data do not support the derivation of a DNEL for skin irritation effects (G32).

Available hazard data do not support the need to establish a DNEL for other health effects (G36).

Risk Management Measures are based on the qualitative characterization of risk (G37).

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 [DSU1].

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2].

Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3].

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industrieslibraries.html) [DSU4].

Complies with Regulation (EU) No. 2020/878 as amended.

6. Use as fuel - Professional sector

Section 1 Exposure to the Low Boilin Title	ng Point Na	afte Scenario Containing Between 0% and 1% Benzene		
Use as Fuel				
Use Descriptor				
Sector of use		22		
Process Categories				
		1, 2, 3, 8a, 8b, 16		
Environmental Release Categories		9a, 9b		
Specific Environment Release Categ	gories	ESVOC SpERC 9.12.v1		
Processes, tasks, activities covered		in a common and hardeline alone of another and an another and		
including accidental exposure during	g activities	ive component) within closed systems or under containment, associated with transfer, use, equipment maintenance, and		
waste product handling (CGES12_I). Valuation method	1			
See section 3.				
Section 2 Operational conditions an	a risk mar	agement measures		
Section 2.1 Control of worker expos	ure			
Product Characteristics				
Physical state of product		rapor pressure > 10 kPa under standard conditions (OC5).		
Concentration of substance in		percentage substance in the product up to 100% (unless stated		
product	differen	tly) (G13).		
Quantity used	Not app	licable.		
Frequency and duration of use/exposure	Covers a	a daily exposure of up to 8 hours (unless otherwise specified) (G2)		
	Not ann	licable		
Human factors not influenced by risk management	Not app			
Other operational conditions		s use of the product at a temperature not exceeding 20°C above		
affecting exposure		t temperature, unless otherwise specified (G15). Assumes the		
	applicat (G1).	ion of an adequate basic standard of hygiene in the workplace		
Scenario characteristics	Specific	risk management measures and operating conditions		
General Measures (Skin Irritants) (G19)	contact. is likely. Immedi training	rect contact with the skin. Identify potential areas of indirect skin Wear protective gloves (tested according to EN374) if skin contact Eliminate contamination/spills as soon as they occur. ately remove any contamination from the skin. Provide basic to personnel aimed at preventing/limiting exposure and report the any dermatological problems (E3).		
General measures (carcinogens) (G18)	to elimin systems ventilati disconti mainter authoriz activitie exposur use respimmedia adoption manage and mea Conside	r the need for a risk-based health surveillance system (G20).		
General Exposures (Closed		the substance in a closed system (E47).		
Systems) (CS15), Outdoor (OC9)				



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Closed discharge of bulk products (CS502)	Ensure material transfers are under containment (E66).	or extract ventilation
Drum/batch transfers (CS8)	Ensure material transfers are under containment (E66).	or extract ventilation
Refueling (CS 507)	Ensure material transfers are under containment (E66).	or extract ventilation
Aircraft Refueling (CS508)	Ensure material transfers are under containment (E66).	or extract ventilation
Use as fuel (GEST12_I), (closed systems) (CS107)	Handle the substance in a closed system (E47).	
Equipment Maintenance (CS5)	Drain down system prior to equipment break-in or restore drains in sealed containers pending disposal recycling (ENVT4). Remove spills immediately (C&H13). Ensure an adequate standard of general ventilation occurs through doors, windows, etc. In controlled ventilation with ENS with basic training (PPE16). Ensure that operational personnel are properly transferred to personnel are properly transferred to the personnel are pers	n. Natural ventilation entilation lectric extractor (E1). 374 standard), together
Storage (CS67)	potential exposure (EI19). Store the substance within a closed system (E84). Ensure an adequate standard of general ventilation via doors, windows, etc. In controlled ventilation roo eliminated by an electric exhaust fan (E1).	
Section 2.2 Control of environmenta		
Product characteristics		
Substance is complex UVCB (PrC3).	Predominantly hydrophobic (PrC4a)	
Quantities used		
Fraction of EU tonnage used in regio	n (A1)	0.1
Regional tonnage (tonnes/year) (A2)		1.19e6
Fraction of regional tonnage used lo		0.0005
Annual site tonnage (tonnes/year) (A	N5)	5.9e2
Maximum Daily Site Tonnage (kg/da	ну) (А4)	1.6e3
Frequency and duration of use		
Continuous release (FD2)		
Emission days (days/year) (FD4)		365
Environmental factors not influence	d by risk management	
Local freshwater dilution factor (EF1		10
Local marine water dilution factor (E	F2)	100
	ffecting environmental exposure (initial release prior to risk management measures)	0.01
	n process (initial release prior to risk management	0.00001
measures) (00C5) Release fraction to soil from process (00C6)	(initial release prior to risk management measures)	0.00001
` '	at process level (source) to prevent release	<u> </u>
	thus conservative process release estimates used [To	CS11.
	sures to reduce or limit discharges, air emissions and	
Environmental risk is related to indir	ect exposure of humans via ingestion (TCR1k). stewater treatment plant, no treatment is required (TC	
	ensure a typical removal efficiency of (%) (TCR7).	N/A
	charge) to ensure the required removal efficiency ≥	3.4
	wastewater treatment plant, ensure the required	0



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Complies with Regulation (EU) No. 2020/878 as amended.

Organizational measures to prevent/limit release from the site (1286)

Do not spread sludge generated from industrial water treatment on natural land (OMS2).

Sludge generated from industrial water treatment must be incinerated, kept under containment, or treated (OMS3)

Conditions and measures related to municipal sewage treatment plant (1273)

Estimated substance removal from wastewater via urban treatment plant (%) (STP3).	95.5
Total efficiency of removal from wastewater after onsite and	95.5
offsite (urban treatment plant) RMMs (%) (STP4)	
Maximum allowable tonnage for the site (MSafe) based on release after total	1.5e4
wastewater removal treatment (kg/d) (STP6).	
Assumed flow rate for the urban wastewater treatment plant (m3/d) (STP5)	2000

Conditions and measures related to external treatment of waste for disposal (1272)

Combustion emissions limited by required exhaust emission controls (ETW1).

Combustion emissions considered in regional exposure assessment (ETW2).

Conditions and measures relating to external waste recovery (1271)

External treatment and disposal of waste should comply with applicable local and/or national legislation (ERW3).

Section 3 Exposure Estimation

3.1 Health

For the purpose of assessing workplace exposure levels, where not explicitly specified, the ECETOC TRA method was used (G21).

3.2 Environment

The Hydrocarbon Block Method (HBM) was used to calculate environmental exposure with the Petrorisk model (EE2).

Section 4

4.1 Health

Exposures are not expected to exceed the DN(M)EL when the Risk Management Measures (RMMs) and Operational Conditions (OCs) described in Section 3 are applied (G22).

Where different Risk Management Measures/Operating Conditions are in place, users are required to ensure that risks are managed at least at an equivalent level (G23).

Available hazard data do not support the derivation of a DNEL for skin irritation effects (G32).

Available hazard data do not support the need to establish a DNEL for other health effects (G36).

Risk Management Measures are based on the qualitative characterization of risk (G37).

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 [DSU1].

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2].

Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination IDSU3].

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reachfor-industrieslibraries.html) [DSU4].

Complies with Regulation (EU) No. 2020/878 as amended.

7. Fuel use - Consumers

Section 1 Exposure to the Low Boilin	g Point Na	fte Scenario Containing Between 0% and 1% Benzene	
Title		-	
Use as Fuel			
Use Descriptor			
Sector of use		21	
Category Processing		13	
Environmental Release Categories		9a, 9b	
Specific Environment Release Categ	gories ESVOC SpERC 9.12c.v1		
Processes, tasks, activities covered			
Covers consumer use as a liquid fuel	(GES12_C		
Assessment Method			
See section 3.			
Section 2 Operational conditions and	l risk man	agement measures	
Section 2.1 Control of worker exposu	ıre		
Product Characteristics	1		
Physical state of product		apor pressure > 10 kPa under standard conditions (OC5).	
Concentration of substance in	Unless o	therwise specified, covers concentrations up to 100% (ConsOC1).	
product			
Quantity used		therwise specified, covers consumption up to 37,500 grams	
		2); covers a skin contact area up to 420 cm² (ConsOC5).	
Frequency and duration of		therwise specified, covers frequencies of use up to 0.413 times	
use/exposure		(ConsOC4); covers exposures up to 2 hours for each event	
Human fastara nat influenced by	(ConsOC	,	
Human factors not influenced by		therwise specified, use is assumed to occur at ambient	
risk management		ture (ConsOC15); it is assumed to take place in a 20 m ³ room 11); it is assumed to occur under typical ventilation conditions	
	(ConsOC		
Soonario characteristics		,	
	Specific	rick management measures and operational conditions	
Scenario characteristics Fuel - liquid - subcategory added:		risk management measures and operational conditions Unless otherwise specified includes concentrations up to 1%	
Fuel – liquid – subcategory added:	OC OC	Unless otherwise specified, includes concentrations up to 1%	
		Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes	
Fuel – liquid – subcategory added:		Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin	
Fuel – liquid – subcategory added:		Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use,	
Fuel – liquid – subcategory added:		Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes	
Fuel – liquid – subcategory added:		Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room	
Fuel – liquid – subcategory added:		Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes	
Fuel – liquid – subcategory added:		Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours	
Fuel – liquid – subcategory added: refueling of motor vehicles (PC13)	ос	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs.	
Fuel – liquid – subcategory added: refueling of motor vehicles (PC13) Fuel – liquid –added subcategory:	OC RMM	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14).	
Fuel – liquid – subcategory added: refueling of motor vehicles (PC13)	OC RMM	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1%	
Fuel – liquid – subcategory added: refueling of motor vehicles (PC13) Fuel – liquid –added subcategory:	OC RMM	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes	
Fuel – liquid – subcategory added: refueling of motor vehicles (PC13) Fuel – liquid –added subcategory:	OC RMM	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use,	
Fuel – liquid – subcategory added: refueling of motor vehicles (PC13) Fuel – liquid –added subcategory:	OC RMM	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use, includes consumption up to 37500 grams (ConsOC2); includes	
Fuel – liquid – subcategory added: refueling of motor vehicles (PC13) Fuel – liquid –added subcategory:	OC RMM	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room	
Fuel – liquid – subcategory added: refueling of motor vehicles (PC13) Fuel – liquid –added subcategory:	OC RMM	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours	
Fuel – liquid – subcategory added: refueling of motor vehicles (PC13) Fuel – liquid –added subcategory:	RMM OC	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14).	
Fuel – liquid – subcategory added: refueling of motor vehicles (PC13) Fuel – liquid –added subcategory: scooters refuelling (PC13)	RMM OC	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs.	
Fuel - liquid - subcategory added: refueling of motor vehicles (PC13) Fuel - liquid -added subcategory: scooters refuelling (PC13) Fuel - liquid -subcategory added:	RMM OC	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1%	
Fuel - liquid - subcategory added: refueling of motor vehicles (PC13) Fuel - liquid -added subcategory: scooters refuelling (PC13) Fuel - liquid -subcategory added:	RMM OC	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes	
Fuel - liquid - subcategory added: refueling of motor vehicles (PC13) Fuel - liquid -added subcategory: scooters refuelling (PC13) Fuel - liquid -subcategory added:	RMM OC	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use,	
Fuel - liquid - subcategory added: refueling of motor vehicles (PC13) Fuel - liquid -added subcategory: scooters refuelling (PC13) Fuel - liquid -subcategory added:	RMM OC	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours	
Fuel - liquid - subcategory added: refueling of motor vehicles (PC13) Fuel - liquid -added subcategory: scooters refuelling (PC13) Fuel - liquid -subcategory added:	RMM OC	Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); includes a skin contact area up to 210.00 cm² (ConsOC5); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room (ConsOC11); for each use, includes exposure up to 0.04 hours per event (ConsOC14). No specific RMM value developed beyond the reported OCs. Unless otherwise specified, includes concentrations up to 1% (ConsOC1); includes use up to 52 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use, includes consumption up to 37500 grams (ConsOC2); includes outdoor use (ConsOC12); assumes use in a 100 m3 room	



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Complies with Regulation (EU) No. 2020/878 as amended.

Fuel - liquid - subcategory added: garden equipment - refueling (PC13)	ос	Unless otherwise specified, includes con (ConsOC1); includes use up to 52 days/ye frequencies of use up to once per day (Consocate area up to 210.00 cm² (Conincludes consumption up to 37500 granuse in a car garage (34 m³) under typica (ConsOC10); assumes use in a 100 m³ each use, includes exposure up to (ConsOC14).	ear (ConsOC3); includes nsOC4); includes a skin nsOC5); for each use, ns (ConsOC2); includes all ventilation conditions room (ConsOC11); for
	RMM	No specific RMM value developed beyon	d the reported OCs.
Section 2.2 Control of environmental			
Product characteristics	одробито		
Substance is complex UVCB (PrC3). F	redomina	ntly hydrophobic (PrC4a)	
Quantities used	10001111110	may nyarophosis (i. i.e. ia)	
Fraction of EU tonnage used in region	(Δ1)		0.1
Regional tonnage (tonnes/year) (A2)			1.39e7
Fraction of regional tonnage used locally (A3)			0.0005
Annual site tonnage (tonnes/year) (A			7.0e3
Maximum Daily Site Tonnage (kg/da			1.9e4
Frequency and duration of use	y) (A 4)		1.364
Continuous release (FD2)			
Emission days (days/year) (FD4)			365
	by riols no	anadamant	300
Environmental factors not influenced		anagement	10
Local freshwater dilution factor (EF1) Local marine water dilution factor (EI			100
,		viran magnital avmanus	100
Other given operational conditions af			0.04
(OOC4)	initiai reie	ase prior to risk management measures)	0.01
` '	process	(initial release prior to risk management	0.00001
, , ,	(initial rele	ease prior to risk management measures)	0.00001
Conditions and measures relating to	the munic	inal recovery plan	
Environmental risk is related to indire			
		r via urban treatment plant (%) (STP3).	95.5
Maximum allowable tonnage for the		•	1.8e5
wastewater removal treatment (kg/d	•	of bassa sir release arter total	2.000
Assumed flow rate for the urban was		eatment plant (m3/d) (STP5)	2000
Conditions and measures related to e			1
Combustion emissions limited by req			
Combustion emissions considered in			
Conditions and measures relating to		, , ,	
		ld comply with applicable local and/or nati	ional legislation
(ERW3).		сор.у аррисано госон оттоу от тог	
Section 3 Exposure Estimation			
3.1 Health			
	ce exposi	ire levels, where not explicitly specified, the	e ECETOC TRA method
3.2 Environment			
The Hydrocarbon Block Method (HBM	l) was use	d to calculate environmental exposure with	n the Petrorisk model
(EE2).			
Section 4			
4.1 Health			
No exposure assessment has been p	resented f	or human health (G39).	
Where different Diele Management M	00011800//	Ingrational Conditions are adopted users	and he will be a second

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Where different Risk Management Measures/Operational Conditions are adopted, users are required to ensure

that risks are managed to at least an equivalent level (G23).

4.2 Environment



ANNEX TO THE SDS - GASOLINE

Complies with Regulation (EU) No. 2020/878 as amended.

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 [DSU1].

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reachfor-industrieslibraries.html) [DSU4].



Complies with Regulation (EU) No. 2020/878 as amended.

8. Rubber manufacturing and processing

Section 1 Exposure scenario titled:	Low boiling point naphtha containing between 0% and 1% benzene
Title	
Rubber production and processing	
Use Descriptor	3, 10, 11
Sector of use	1, 2, 3, 8a, 8b, 9, 210
Process Categories	1, 4, 6D
Environmental Release Categories	
Processes, tasks, activities covered	•
exposure during the processing of	ubber products in closed or contained systems, including potential accidental from (unprocessed) rubber, handling and mixing of rubber additives from finishing, and maintenance (CGES19_I).
Assessment Method	
See section 3.	
Section 2 Operational conditions an	d risk management measures
Section 2.1 Control of worker expos	ure
Product Characteristics:	
Physical state of product	
Concentration of t substance in	Covers a percentage of substance in the product up to 100% (unless
product	otherwise stated) (G13).
Quantity used	Not applicable.
Frequency and duration of	Covers a daily exposure of up to 8 hours (unless otherwise specified) (G2
use/exposure	
Human factors not influenced by	Not applicable.
risk management	
Scenario characteristics	Specific measures for risk management and operational conditions
General Measures (Skin Irritants) (G19)	Avoid direct contact with the skin. Identify potential areas of indirect skir contact. Wear protective gloves (tested according to EN374) if skin contact is likely. Eliminate contamination/spills as soon as they occur. Immediately remove any contamination from the skin. Provide basic training to personnel aimed at preventing/limiting exposure and report the onset of any dermatological problems (E3).
General measures (carcinogens) (G18)	Consider technical advances and process upgrades (including automation to eliminate spills. Limit exposure by adopting measures such as closed systems, dedicated systems and and appropriate general/local exhaust ventilation systems. Drain systems and clean transfer lines before discontinuing containment. Clean/purge equipment, where possiblebefor maintenance. Where there is a possibility of exposure: restrict access to authorized personnel only, provide operators with specific training on the activities and operations to be performed in order to minimize the risk of exposure, wear gloves and protective suits to prevent skin contamination use respiratory protection when required for certain exposure scenarios, immediately eliminate any spills, and dispose of waste safely. Ensure the adoption of safe work systems or equivalent solutions for risk management. Inspect, check, and regularly maintain all control devices and measures. Consider the need for a risk-based health surveillance system (G20).
Product transfers (CS3)	Store the substance within a closed system (E84).
(closed systems) (CS107)	Ensure material transfers are under containment or extract ventilatio (E66).
General Exposures (Closed	Handle the substance in a closed system (E47).
Systems) (CS15)	
Product transfers (CS3)	Ensure material transfers are under containment or extract ventilatio (E66).
Weighing of bulk products (CS91)	Handle the substance in a closed system (E47).



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	Wear protective gloves that comply with the EN374	(PPE15) standard.			
Laboratory activities (CS36)	Handle only under a fume hood or use equivalent methods to minin				
, ,	exposure risks (E12).				
Equipment Maintenance (CS5)	Drain down system prior to equipment break-in or r	naintenance (E65).			
	Store drains in sealed containers pending disposal	or subsequent			
	recycling (ENVT4).				
	Remove spills immediately (C&H13). Ensure an adequate standard of general ventilation. Natural ventilation occurs through doors, windows, etc. In controlled ventilation				
	environments, air is introduced or removed by an e	ectric extractor (E1).			
Section 2.2 Control of environmenta	al exposure				
Product characteristics					
Substance is complex UVCB (PrC3).	Predominantly hydrophobic (PrC4a)				
Quantities used					
Fraction of EU tonnage used in region	0.1				
Regional tonnage (tonnes/year) (A2	94				
Fraction of regional tonnage used lo	1				
Annual site tonnage (tonnes/year) (94				
Maximum Daily Site Tonnage (kg/d	ay) (A4)	4.7e3			
Frequency and duration of use					
Continuous release (FD2)					
Emission days (days/year) (FD4)		20			
Environmental factors not influence	d by risk management				
Local freshwater dilution factor (EF:		10			
Local marine water dilution factor (I	,	100			
Other given operational conditions a					
other given operational containing	arrotang onvironmontal expectato				
Release fraction to air from process	(initial release prior to risk management measures)	0.003			
(00C4)	(milital release prior to risk management measures)	0.000			
` '	m process (initial release prior to risk management	0.01			
measures) (00C5)	in process (initial release prior to risk management	0.01			
	s (initial release prior to risk management measures)	0.0001			
(0006)	(initial release prior to fisk management measures)	0.0001			
	at process level (source) to prevent release				
	thus conservative process release estimates used [To	CS11			
	asures to reduce or limit discharges, air emissions and				
	substances or recover them from wastewater (TRC14).				
	rect exposure of humans via ingestion (TCR1k).	•			
	stewater treatment plant, no treatment is required (TO	`PQ\			
	ensure a typical removal efficiency of (%) (TCR7).	0			
· · · · · · · · · · · · · · · · · · ·	arting the discharge operation) to ensure the required	23.9			
removal effectiveness ≥ (%):	atting the discharge operation) to ensure the required	23.9			
, ,	Stewater treatment plant, ensure the required on site	0			
In case of discharge to an urban way	In case of discharge to an urban wastewater treatment plant, ensure the required on-site				
	stowator troutment plant, endure the required on site	· ·			
removal effectiveness ≥ (%)					
removal effectiveness ≥ (%) Organizational measures to prevent	/limit release from the site (1286)				
removal effectiveness ≥ (%) Organizational measures to prevent Do not spread sludge generated fro	//limit release from the site (1286) m industrial water treatment on natural land (OMS2).				
removal effectiveness ≥ (%) Organizational measures to prevent Do not spread sludge generated fro Sludge generated from industrial wa	/limit release from the site (1286)				
removal effectiveness ≥ (%) Organizational measures to prevent Do not spread sludge generated fro Sludge generated from industrial wa (OMS3)	:/limit release from the site (1286) m industrial water treatment on natural land (OMS2). ater treatment must be incinerated, kept under contai				
removal effectiveness ≥ (%) Organizational measures to prevent Do not spread sludge generated fro Sludge generated from industrial wa (OMS3) Conditions and measures relating to	//limit release from the site (1286) m industrial water treatment on natural land (0MS2). ater treatment must be incinerated, kept under contain the municipal waste water treatment plant (1273)	nment, or treated			
removal effectiveness ≥ (%) Organizational measures to prevent Do not spread sludge generated fro Sludge generated from industrial wa (OMS3) Conditions and measures relating to	:/limit release from the site (1286) m industrial water treatment on natural land (OMS2). ater treatment must be incinerated, kept under contai				
removal effectiveness ≥ (%) Organizational measures to prevent Do not spread sludge generated fro Sludge generated from industrial wa (OMS3) Conditions and measures relating to Estimated removal of wastewater s (STP3).	//limit release from the site (1286) m industrial water treatment on natural land (0MS2). ater treatment must be incinerated, kept under contain the municipal waste water treatment plant (1273)	nment, or treated			
removal effectiveness ≥ (%) Organizational measures to prevent Do not spread sludge generated fro Sludge generated from industrial wa (OMS3) Conditions and measures relating to Estimated removal of wastewater s (STP3).	//limit release from the site (1286) m industrial water treatment on natural land (OMS2). ater treatment must be incinerated, kept under contain the municipal waste water treatment plant (1273) ubstance by means of an urban treatment plant (%) removal, after the adoption of on-site and offsite	nment, or treated			
removal effectiveness ≥ (%) Organizational measures to prevent Do not spread sludge generated fro Sludge generated from industrial wa (OMS3) Conditions and measures relating to Estimated removal of wastewater s (STP3). Total effectiveness of wastewater (urban-type treatment plant) RMMs	//limit release from the site (1286) m industrial water treatment on natural land (OMS2). ater treatment must be incinerated, kept under contain the municipal waste water treatment plant (1273) ubstance by means of an urban treatment plant (%) removal, after the adoption of on-site and offsite	nment, or treated			
removal effectiveness ≥ (%) Organizational measures to prevent Do not spread sludge generated fro Sludge generated from industrial wa (OMS3) Conditions and measures relating to Estimated removal of wastewater s (STP3). Total effectiveness of wastewater (urban-type treatment plant) RMMs	industrial water treatment on natural land (OMS2). The mindustrial water treatment on natural land (OMS2). The municipal waste water treatment plant (1273) The municipal waste water treatment plant (%) The municipal waste water treatment plant (1273) The municipal waste water treatment plant (%) T	nment, or treated 95.5 95.5			
removal effectiveness ≥ (%) Organizational measures to prevent Do not spread sludge generated fro Sludge generated from industrial way (OMS3) Conditions and measures relating to Estimated removal of wastewater s (STP3). Total effectiveness of wastewater (urban-type treatment plant) RMMs Maximum allowable tonnage for the wastewater removal treatment (kg/	industrial water treatment on natural land (OMS2). The mindustrial water treatment on natural land (OMS2). The municipal waste water treatment plant (1273) The municipal waste water treatment plant (%) The municipal waste water treatment plant (1273) The municipal waste water treatment plant (%) T	95.5 95.5			
removal effectiveness ≥ (%) Organizational measures to prevent Do not spread sludge generated fro Sludge generated from industrial wat (OMS3) Conditions and measures relating to Estimated removal of wastewater s (STP3). Total effectiveness of wastewater (urban-type treatment plant) RMMs Maximum allowable tonnage for the wastewater removal treatment (kg/	c/limit release from the site (1286) m industrial water treatment on natural land (OMS2). ater treatment must be incinerated, kept under contain the municipal waste water treatment plant (1273) substance by means of an urban treatment plant (%) removal, after the adoption of on-site and offsite (%) (STP4) e site (MSafe) based on release after total (d) (STP6).	95.5 95.5 4.2e4			



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Conditions and measures relating to external waste recovery (1271)

External waste collection and recycling must comply with applicable local and/or national legislation (ERW1).

Section 3 Exposure Estimation

3.1 Health

For the purpose of assessing workplace exposure levels, where not explicitly specified, the ECETOC TRA method was used (G21).

3.2 Environment

The Hydrocarbon Block Method (HBM) was used to calculate environmental exposure with the Petrorisk model (EE2).

Section 4

4.1 Health

Exposures are not expected to exceed the DN(M)EL when the Risk Management Measures (RMMs) and Operational Conditions (OCs) described in Section 3 are applied (G22).

Where different Risk Management Measures/Operating Conditions are in place, users are required to ensure that risks are managed at least at an equivalent level (G23).

Available hazard data do not support the derivation of a DNEL for skin irritation effects (G32).

Available hazard data do not support the need to establish a DNEL for other health effects (G36).

Risk Management Measures are based on the qualitative characterization of risk (G37).

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 [DSU1].

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination [DSU2].

Required removal efficiency for air can be achieved using onsite technologies, either alone or in combination [DSU3].

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reachfor-industrieslibraries.html) [DSU4].

Complies with Regulation (EU) No. 2020/878 as amended.

ETBE

1. Formulation of ETBE		
Section 1		
Title		
Formulation of ETBE; CAS NR 637-92-	3	
Use Descriptor		
Sector of use	Industrial (SU3)	
Process categories	PROC1, PROC2, PROC3, PROC4, PROC5, PROC8A, PROC8B, PROC9, PROC15	
Environmental release categories	ERC2	
Processes, tasks, activities covered		
	ging of the substance and its mixtures in batch or continuous operations, nixing, large and small-scale packaging, maintenance, and associated	
Section 2 Operational conditions and risk management measures		
Section 2.1 Control of worker exposure		
Product Characteristics:		
Physical state of product	Liquid, vapor pressure > 10 kPa under standard conditions (OC5).	

Section 2.1 Control of worker exposu	ıre	
Product Characteristics:		
Physical state of product	Liquid, vapor pressure > 10 kPa under standard conditions (OC5).	
Concentration of substance in	Covers percentage substance in the product up to 100 %	
product	(unless stated differently) (G13).	
Quantity used	Not applicable.	
Frequency and duration of use/exposure	Covers daily exposure of up to 8 hours (unless otherwise specified) (G2).	
Human factors not influenced by risk management	Not applicable.	
Other operational conditions affecting exposure	Assumes use of the product at a temperature not exceeding 20°C above ambient temperature, unless otherwise specified (G15). Assumes the application of an adequate basic standard of hygiene in the workplace	
	(G1).	
Exposure scenarios	Specific measures for risk management and operational conditions	
General Exposures (Closed Systems) (CS15)	No specific measures have been identified (EI18)	
General exposures (closed	Ensure that the operation is carried out outdoors (E69).	
systems) (CS15); sampling (CS56).	Do not carry out activities involving potential exposure for more than 4 hours (OC28) or (G9).	
	Wear a respirator conforming to EN140 with Type A filter or better (PPE22).	
General exposure (closed systems) (CS15); Use in batch processes under containment (CS37); with sampling (CS56).	Provide extract ventilation to points where emissions occur (E54).	
General exposures (open systems) (CS16). Batch process (CS55). With sampling (CS56). Filling/preparation of equipment from drums or containers (CS45).	Provide extract ventilation to points where emissions occur (E54).	



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	T		
General exposures (closed systems) (CS15); Batch processes at elevated temperatures (CS136); with sampling (CS56); Operation is carried out at high temperatures (>20°C above ambient temperature) (OC7).	Formulate substances in closed or ventilated mixing Provide extract ventilation to points where emission to point to	ons occur (E54).	
In-process sampling (CS2)	Provide extract ventilation to points where emissions occur (E54).		
Mixing operations (open systems) (CS30); Batch process (CS55).	Provide extract ventilation to points where emissic Do not carry out activities involving potential exphours (OC28) or (G9). Wear a respirator conforming to EN140 with Type A	posure for more than 4	
Manual (CS34);	Ensure material transfers are under containment		
Transfer/pouring from containers	(E66).		
(CS22);	Do not carry out activities involving potential exp	osure for more than 4	
Non-dedicated facility (CS82).	hours (0C28) or (G9).		
	Wear a respirator conforming to EN140 with Type A	filter or better (PPE22).	
Drum/batch transfers (CS8);	Use drum pumps (E53);		
dedicated facility (CS81)	Minimise exposure by partial enclosure of the oper	ration or equipment	
	and provide extract ventilation at openings (E60).		
Drums and small containers filling	Fill containers/cans at dedicated fill points sup	plied with local extract	
(CS6); Dedicated facility (CS81).	ventilation. (E51).		
Cleaning and maintenance of	Drain down and flush system prior to equipment break-in or maintenance		
equipment (CS39); Non-dedicated facility (CS82).	(E55).	hility of aymaayya far a	
Non-dedicated facility (C582).	Do not carry out activities that involve the possi period of more than 1 hour (OC27).	bility of exposure for a	
		filter or hetter (PPF22)	
Section 2.2 Environmental Exposure	Wear a respirator conforming to EN140 with Type A filter or better (PPE22). Section 2.2 Environmental Exposure Control		
Product characteristics			
	L); Predominantly hydrophobic (PrC4a); Readily biod	egradable (PrC5a).	
Operational Conditions		- B. a.	
For external use (OOC1).			
Amounts used			
Regional tonnage (tonnes/year) (A2)		901,000	
Fraction of EU tonnage used in region (A3)		0.05	
Average daily site tonnage (kg/day)		150,167	
Annual site tonnage (tons/year)		45,050	
Frequency and duration of use			
Continuous release (FD2)			
Emission days (days/year) (FD4)		300	
Other given operational conditions affecting environmental exposure			
Use in closed systems, in dry or wet processes.			
Release fraction to air from process		1.00E-03	
Release fraction to wastewater from process		3.00E-04	
Release fraction to soil from process (only regional) 1.00E-04		1.00E-04	



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RMMs		
Technical conditions and measures at process level (source) to prevent release		
Common practices vary across sites thus conservative process release estimates used [TCS1].		
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil		
Air	No air emission control required; required removal efficiency is 0% (TCR5).	
Wastewater	In case of discharge to an urban wastewater treatment plant, no treatment is required (TCR9).	
Soil	Treat emissions in such a way as to ensure a typical removal efficiency of (%) (TCR7).	
Organizational measures to prevent/limit release from the site (1286)		
Prevent the release of undissolved substances or their recovery from wastewater (OMS1).		
Conditions and measures related to municipal sewage treatment plant (1273)		
It is assumed that the output flow rate from the industrial wastewater treatment plant is 2000 m3/day.		
Conditions and measures related to external treatment of waste for disposal (1272)		
Not applicable		
Conditions and measures relating to external waste recovery (1271)		
Not applicable		
Other environmental control measures in addition to the above (1287)		
None		

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Complies with Regulation (EU) No. 2020/878 as amended.

2. Distribution of ETBE

	2. Di	stribution of ETBE
Section 1		
Title		
Distribution of ETBE; CAS NR 637-92	!-3	
Use Descriptor		
Sector of use		Industrial (SU3)
Process Categories		PROC1, PROC2, PROC3, PROC4, PROC8A, PROC8B, PROC9, PROC15
Environmental Release Categories		ERC1, ERC2
Specific Environment Release Categ	ories	ESVOC3 SpERC
Processes, tasks, activities covered		
including accidental exposure during activities (CGES1A_I).	g samplir	, tank trucks/railcars, and IBCs) in closed or contained systems, ng, storage, unloading, maintenance, and associated laboratory
Section 2 Operating Conditions and	Risk Mana	gement Measures
Cashlan 0.4 Canhart Cash		
Section 2.1 Control of worker exposu	ıre	
Product Characteristics	I i acceled to	annous avecause > 4.0 L.De um deu atem deud aeu ditieure (0.05)
Physical state of product Concentration of substance in		rapor pressure > 10 kPa under standard conditions (0C5).
product		percentage of substance in the product up to 100% (unless se stated) (G13).
Quantity used	Not app	
Frequency and duration of		laily exposure of up to 8 hours (unless otherwise specified) (G2).
use/exposure	OOVC13 C	tally exposure of up to o flours (unless otherwise specifica) (a2).
Human factors not influenced by risk management	Not applicable	
Other operational conditions affecting exposure	Assumes use of the product at a temperature not exceeding 20 °C above ambient temperature, unless otherwise specified (G15). Assumes the application of an adequate basic standard of hygiene in the workplace (G1).	
Exposure scenarios	Specific risk management measures and operating conditions	
General Exposures (Closed Systems) (CS15)	No spec	ific measures have been identified (EI18)
General exposures (closed systems) (CS15); sampling (CS56).	Ensure that the operation is carried out outdoors (E69). Do not carry out activities involving potential exposure for more than 4 hours (OC28) or (G9). Wear a respirator conforming to EN140 with Type A filter or better (PPE22).	
General exposure (closed systems) (CS15); Use in batch processes under containment (CS37); with sampling (CS56).	Provide extract ventilation to points where emissions occur (E54).	
General exposures (open systems) (CS16). Discontinuous process (CS55). With sampling (CS56). Filling/preparation of equipment from drums or containers (CS45).	Provide extract ventilation to points where emissions occur (E54). Ensure that samples are collected under containment or extraction ventilation conditions (E76).	



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In-process sampling (CS2)	Do not carry out activities that involve the possib	ility of exposure for more				
	than 15 minutes (OC26). Wear a respirator conforming to EN140 with Type A filter or better					
	(PPE22).					
Laboratory activities 8CS36); Cleaning (CS47)	changes per hour) (E40).					
Bulk closed loading and unloading	Ensure that the operation is carried	out outdoors (E69);				
(CS501). Dedicated facility (CS81)	Do not carry out activities that involve the pos	sibility of exposure for a				
	period of more than 1 hour (OC27). Wear a respirator conforming to EN140 with Type A filter or better (PPE)					
Bulk opened loading and unloading	Ensure material transfers are under containment					
(CS503); non-dedicated facility (CS82).	(E66). Do not carry out activities involving potential e					
(0302).	hours (OC28) or (G9).	Aposule for filore than 4				
	Wear a respirator conforming to EN140 with Type	A filter or better (PPE22).				
Drums and small containers filling	Fill containers/cans at dedicated fill points su					
(CS6); Dedicated facility (CS81).	ventilation (E51).					
Cleaning and maintenance of equipment (CS39);	Drain down and flush system prior to equipment (E55).					
Non-dedicated facility (CS82).	Do not carry out activities that involve the pos	sibility of exposure for a				
	period of more than 1 hour (0C27).	A ("II. (DDE00)				
0 (0007) 0	Wear a respirator conforming to EN140 with Type					
Storage (CS67) General Exposures (Closed Systems) (CS15)	No specific measures have been identified (EI18					
Storage (CS67) General exposures	• •					
(closed systems) (CS15) with	substances in a matrix.	A filter or better (DDE22)				
sampling (CS56). Section 2.2 Environmental Exposure	Wear a respirator conforming to EN140 with Type	A filter of better (FFE22).				
Product characteristics	Control					
	1); Predominantly hydrophobic (PrC4a); Readily bio	degradable (PrC5a)				
Transport and distribution	<u> </u>	(
Operational Conditions						
For external use (OOC1).						
Amounts used						
Fraction of EU tonnage used in regio	n (A1)	1.00				
Regional tonnage (tonnes/year) (A2)		901,000				
Fraction of regional tonnage used lo	cally (A3)	0.02				
Average daily site tonnage (kg/day)		51,486				
Annual site tonnage (tons/year)		18,020				
Frequency and duration of use						
Continuous release (FD2)		10=0				
Emission days (days/year) (FD4) 350						
Other given operational conditions a						
Use in closed systems, in dry or wet	processes.	4.005.04				
Release fraction to air from process	nyoooo	1.00E-04				
Release fraction to wastewater from process 1.00E-05						
RMMs	Release fraction to soil from process (only regional) 1.00E-05					
	at process level (source) to prevent release					
	thus conservative process release estimates used	ITCS11.				
	sures to reduce or limit discharges, air emissions					
	No air emission control required; required removal efficiency is 0% (TCR5).					
	ter on-site (prior to discharge) to ensure the requir					
Soil Treat emissions in such a way as to ensure a typical removal efficiency of (%) (TCR7).						
Organizational measures to prevent		-, - (, ()-				
Prevent the release of undissolved s	ubstances or their recovery from wastewater (OMS	1).				



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It is assumed that	the output flow rate from the industrial wastewater trea	tment plant is 2000 m3/day.		
	easures related to external treatment of waste for dispos			
Not applicable	-			
Conditions and me	easures relating to external waste recovery (1271)			
Not applicable				
Other environmen	tal control measures in addition to the above (1287)			
None				
Storage				
Operational Condi	tions			
For external use (OOC1).			
Amounts used				
Fraction of EU ton	nage used in region (A1)	1.00		
	(tonnes/year) (A2)	901,000		
Fraction of regions	al tonnage used locally (A3)	1		
Average daily site	tonnage (kg/day)	2,468,493		
Annual site tonna	ge (tons/year)	901,000		
Frequency and du	ration of use	•		
Continuous releas	e (FD2)			
Emission days (da	ys/year) (FD4)	365		
Other given opera	tional conditions affecting environmental exposure	·		
Use in closed syst	ems, in dry or wet processes.			
Release from process waste water (Kg/day) 8.4				
RMMs				
Technical condition	ns and measures at process level (source) to prevent rele	ease		
Common practice	s vary across sites thus conservative process release esti	mates used [TCS1].		
Technical onsite c	onditions and measures to reduce or limit discharges, ai	r emissions and releases to soil		
Air	Emission controls are not applicable, as no direct rel	ease into the air is recorded (TCR2).		
Wastewater	Treat wastewater on-site (prior to discharge) to ensure >97% (TCR8).	re the required removal efficiency		
Soil	Soil emission controls are not applicable as there is	no direct release to soil (TCR4).		
Organizational measures to prevent/limit release from the site (1286)				
	se of undissolved substances or their recovery from waste	ewater (OMS1).		
	easures related to municipal sewage treatment plant (12			
	the output flow rate from the industrial wastewater trea			
	easures related to external treatment of waste for dispos			
Not applicable				
	easures relating to external waste recovery (1271)			
Not applicable				
	tal control measures in addition to the above (1287)			
None				



Complies with Regulation (EU) No. 2020/878 as amended.

3. Use of ETBE in fuels - Industrial sector

Section 1					
Title					
Use of ETBE in fuels; CAS NR 637-92-3					
Use Descriptor	•				
Sector of use		Industrial (SU3)			
Process categories		PROC1, PROC2, PROC3, PROC8A, PROC8B, PROC16			
Specific environmental release categories	ories	ESVOC3 SpERC			
Processes, tasks, activities covered	501103	ESTOGO OPERO			
	includir	ng activities associated with transfer, use, equipment maintenance			
and disposal of waste (GES12_I).	, includii	is activities associated with transfer, use, equipment maintenance			
Section 2 Operational conditions and	l riek ma	nagement measures			
occion 2 operational conditions and	i iisk iiid	nagoment measures			
Section 2.1 Control of worker exposu	re				
Product Characteristics					
Physical state of product	Liquid	vapor pressure > 10 kPa under standard conditions (OC5).			
Concentration of substance in		up to 15% of the substance in the product.			
product	COVEIS	up to 10% of the substance in the product.			
Quantity used	Not app	nlicable			
Frequency and duration of		daily exposure of up to 8 hours (unless otherwise specified) (G2).			
use/exposure					
Human factors not influenced by risk management	Not app	blicable.			
Other operational conditions	Assume	es the application of an adequate basic standard of hygiene in the			
affecting exposure		ace (G1).			
Exposure scenarios		pecific measures for risk management and operational conditions			
Bulk product transfer (CS14);		andle the substance within a predominantly closed system			
Batch process (CS55);		quipped with extraction ventilation (E49).			
with sampling (CS56);		o not carry out activities involving potential exposure for more			
Filling/preparation of equipment from		nan 4 hours (OC28).			
drums or containers (CS45).		/ear a respirator conforming to EN140 with Type A filter or better			
		PPE22).			
Drum/batch transfers (CS8);	Ù	se drum pumps (E53).			
Filling/preparation of equipment from					
drums or containers (CS45).					
Bulk product transfer (CS14);					
dedicated facility (CS81).					
General Exposures (Closed Systems)	N	o specific measures have been identified (EI18).			
(CS15)					
General exposures (closed systems)	E	nsure an extraction ventilation system at the material transfer			
(CS15); with sampling (CS56).		oints and other openings (E82).			
General exposures (closed systems)	P	rovide extract ventilation to points where emissions occur (E54).			
(CS15); Use in batch processes under					
containment (CS37); with sampling					
(CS56).					
` /		o specific measures have been identified (EI18).			
consumption.		, ,			
Equipment Cleaning and Maintenance		rain down system prior to equipment break-in or maintenance			
		E65).			
		o not carry out activities involving potential exposure for more			
, , , , , , , , , , , , , , , , , , ,		nan 4 hours (OC28).			
Stayona (OSS7):		o specific measures have been identified (EI18).			
Storage (CS67);		o specific measures have been identified (£118).			
General Exposures (Closed Systems) (CS15)					
Storage (CS67);		nsure that the operation is carried out outdoors (E69).			



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	sures (closed systems)			
(CS15); with sar				
	ironmental Exposure Control			
Product charact		1: (D.04.) D. III 1: 1 (D.05.)		
	unique structure(PrC1); Predominantly hydropho	bic (PrC4a); Readily biodegradable (PrC5a).		
Transport and d				
Operational Cor				
For external use	e (OOC1).			
Amounts used				
	ge (tonnes/year) (A2)	901,000		
	onal tonnage used locally (A3)	0.02		
	te tonnage (kg/day)	51,486		
	nage (tons/year)	18,020		
Frequency and				
Continuous rele	,			
	days/year) (FD4)	350		
	rational conditions affecting environmental expo	osure		
•	stems, in dry or wet processes.			
	n to air from process	1.00E-04		
Release fraction	to wastewater from process	1.00E-05		
Release fraction	n to soil from process (only regional)	1.00E-05		
RMMs				
Technical condi	tions and measures at process level (source) to	prevent release		
Common practi	ces vary across sites thus conservative process r	elease estimates used [TCS1].		
Technical onsite	conditions and measures to reduce or limit disc	charges, air emissions and releases to soil		
Air No air emission control required; required removal efficiency is 0% (TCR5).				
Wastewater Treat wastewater on-site (prior to discharge) to ensure the required removal efficiency >95% (TCR8).				
Soil				
Organizational measures to prevent/limit release from the site (1286)				
Prevent the release of undissolved substances or their recovery from wastewater (OMS1).				
	measures related to municipal sewage treatmen			
It is assumed th	at the output flow rate from the industrial waste	ewater treatment plant is 2000 m3/day.		
	measures related to external treatment of waste	e for disposal (1272)		
Not applicable				
Conditions and	measures relating to external waste recovery (1	271)		
Not applicable				
Other environmental control measures in addition to the above (1287)				
None				



4. Use of ETBE in fuels - Professional sector

Section 1			
Title			
Use of ETBE in fuels; CAS NR 637-92-3			
Use Descriptor			
Sector of use		Professional (SU22)	
Process categories		PROC1, PROC2, PROC3, PROC8A, PROC8B, PROC9, PROC16	
Specific environmental release categ	gories	ESVOC30 SpERC	
Processes, tasks, activities covered	,		
). including	g activities associated with transfer, use, equipment maintenance	
and disposal of waste (GES12_I).	,,	, , , ,	
Section 2 Operational conditions and	i risk man	agement measures	
-			
Section 2.1 Control of worker exposu	ıre		
Product Characteristics			
Physical state of product	Liquid, v	apor pressure > 10 kPa under standard conditions (0C5).	
Concentration of substance in		up to 15% of the substance in the product.	
product		·	
Quantity used	Not app	licable	
Frequency and duration of		laily exposure of up to 8 hours (unless otherwise specified) (G2).	
use/exposure			
Human factors not influenced by	Not app	licable.	
risk management			
Other operational conditions	Assume	s the application of an adequate basic standard of hygiene in the	
affecting exposure	workpla	ce (G1).	
Exposure scenarios	Specific	measures for risk management and operational conditions	
Bulk product transfer (CS14);		hat the operation is carried out outdoors (E69).	
Batch process (CS55);	Do not carry out activities involving potential exposure for more than 4		
Filling/preparation of equipment	hours (OC28).		
from drums or containers (CS45).	Wear a respirator conforming to EN140 with Type A filter or better (PPE22).		
Drum/batch transfers (CS8);		hat the operation is carried out outdoors (E69).	
Filling/preparation of equipment	Ensure material transfers are under containment or extract ventilation		
from drums or containers (CS45);	(E66).		
Bulk product transfer (CS14);			
dedicated facility (CS81).			
Refueling (CS507)	Ensure an adequate standard of controlled ventilation (10 to 15 air		
		s per hour) (E40).	
		arry out activities involving potential exposure for more than 1 hour	
	(0C27).	vacnivator conforming to EN140 with Time A filter or better	
	(PPE22)	respirator conforming to EN140 with Type A filter or better	
General exposures (closed		arry out activities involving potential exposure for more than 4	
systems) (CS15); with sampling	hours (0		
(CS56).	,	respirator conforming to EN140 with Type A filter or better	
(555).	(PPE22)		
General exposures (closed		an adequate standard of controlled ventilation (10 to 15 air	
systems) (CS15); Use in batch		s per hour) (E40).	
processes under containment	changes per hear) (ETO).		
(CS37); with sampling (CS56).			
Filling drums and small containers	Use drur	m pumps or take particular care when pouring from containers	
(CS6);	(E64).		
Dedicated facility (CS81)		arry out activities involving potential exposure for more than 4	
,	hours (0		
		respirator conforming to EN140 with Type A filter or better (Wear	
	a respira	ator conforming to EN140 with Type A filter or better (PPE22).).	



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(closed systems) (CS107); fuel	Ensure that the operation is carried out out	doors (E69) or (G9).			
usage.	Ensure an adequate standard of controlled ventilation (10 to 15 air changes per hour) (E40).				
Equipment Cleaning and					
Maintenance (CS39).					
non-dedicated facility (CS82) e.g.					
repair of fuel pumps inside	hours (OC28) or (G9).				
buildings.	Wear a respirator conforming to EN140 with (PPE22).	h Type A filter or better			
Equipment Cleaning and	Drain down and flush system prior to equip	ment break-in or maintenance			
Maintenance (CS39).	(E55).				
non-dedicated facility (CS82) e.g.	Do not carry out activities involving potentia	al exposure for more than 4			
repair of fuel pumps outside	hours (OC28) or (G9).				
buildings.	Wear a respirator conforming to EN140 with (PPE22).				
Storage (CS67);	No specific measures have been identified ((EI18).			
General Exposures (Closed Systems) (CS15)					
Section 2.2 Environmental Exposure	Control				
Product characteristics					
Substance is a unique structure(PrC	1); Predominantly hydrophobic (PrC4a); Readi	ly biodegradable (PrC5a).			
Operational Conditions		,			
For external use (OOC1).					
Amounts used					
Average daily consumption for a dis	persive use type (kg/day)	4.94			
Frequency and duration of use					
Dispersive use (FD3)					
Emission days (days/year) (FD4)					
Other operability conditions affecting environmental exposure					
Use in open systems					
Release fraction to air from highly dispersive use (regional only) (OOC7) 1.00e-2					
Release fraction to wastewater from	Release fraction to wastewater from highly dispersive use (OOC8) 1.00E-05				
Release fraction to water surface from	om highly dispersive use (regional only)	1.00E-04			
Release fraction to soil from highly dispersive use (regional only) (OOC9) 1.00E-05					
RMMs					
Technical conditions and measures	at process level (source) to prevent release				
	thus conservative process release estimates				
	asures to reduce or limit discharges, air emiss				
Air No air emission	on control required; required removal efficiency	y is 0% (TCR5).			
Wastewater Treat wastews >95% (TCR8).	Treat wastewater on-site (prior to discharge) to ensure the required removal efficiency				
Treat emissions in such a way as to ensure a typical removal efficiency of (%) (TCR7).					
Organizational measures to prevent/limit release from the site (1286)					
	substances or their recovery from wastewater ((OMS1).			
Conditions and measures related to	municipal sewage treatment plant (1273)				
It is assumed that the output flow ra	ate from the industrial wastewater treatment p	plant is 2000 m3/day.			
Conditions and measures related to	external treatment of waste for disposal (127	'2)			
Not applicable					
Conditions and measures relating to	external waste recovery (1271)				
Not applicable					
Other environmental control measu	res in addition to the above (1287)				
None					



Complies with Regulation (EU) No. 2020/878 as amended.

5. Use of ETBE in fuels - Consumers

Section 1				
Section 1				
Title Use of ETBE in fuels; CAS NR 637-92-3				
USE OF ETBE IN TUEIS;	CAS NR 637-92-	-3		
Sector of use		Consumers (SU21)		
Use Descriptor		PC13		
Environmental release	se categories		ERC8d	
Specific environment		ories	ESVOC30 SpERC	
Processes, tasks, act		01103	LOVOCCO OPENO	
Use of fuel for refuel		nd 4-strok	re engines.	
Section 2 Operationa				
Section 2.1 Control of	of worker exposu	re		
Product features	•			
Physical state of pro-	duct	Liquid, v	apor pressure > 10 kPa under standard c	onditions (OC5).
Vapor pressure			a at 25°C	
Concentration of sub	stance in		uel, containing < 15% of the substance	
product			, 6	
Quantity used		Up to 60	litres for refuelling	
Frequency and durat	ion of		times a week	
use/exposure				
Other operating cond	ditions	Unless o	therwise specified, use is assumed to occ	ur at ambient
affecting exposure			ture (ConsOC15).	
Exposure scenarios			risk management measures and operatir	ng conditions
PC13: Fuel		OC	Unless otherwise specified, includes con-	centrations up to 15%
			(ConsOC1); includes use up to 150 days/	/year (ConsOC3);
			includes frequencies of use up to once p	er day (ConsOC4); for
			each use, it includes exposures up to 15	minutes per event
			(ConsOC14).	
	RMM No specific RMM value developed beyond the reported OCs.			
Section 2.2 Environmental Exposure Control				
Product characteristics				
Substance is a unique structure(PrC1); Predominantly hydrophobic (PrC4a); Readily biodegradable (PrC5a).			legradable (PrC5a).	
Operating Conditions				
For indoor/outdoor u	se (00C3).			
Amounts used				
Average daily consur		ersive use	e type (kg/day)	4.94
Frequency and durat				
Dispersive use (FD3)				T
Emission days (days/year) (FD4)			365	
	Other operability conditions affecting environmental exposure			
Use in open systems				
Release fraction to air from highly dispersive use (regional only) (OOC7) 1.00E-02				
Release fraction to wastewater from highly disper				1.00E-05
Release fraction to water surface from highly dispe				1.00E-04
Release fraction to soil from highly dispersive use (regional only) (00C9) 1.00E-05				
RMMs				
Technical conditions and measures at process level (source) to prevent release				
Common practices vary across sites thus conservative process release estimates used [TCS1].				
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil				
Air				
Wastewater	Treat wastewater on-site (prior to discharge) to ensure the required removal efficiency			
Call	>95% (TCR8).			ion out of (0/) (TODE)
Soil	Treat emissions in such a way as to ensure a typical removal efficiency of (%) (TCR7).			



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Organizational measures to prevent/limit release from the site (1286)

Prevent the release of undissolved substances or their recovery from wastewater (OMS1).

Conditions and measures related to municipal sewage treatment plant (1273)

It is assumed that the output flow rate from the industrial wastewater treatment plant is 2000 m3/day.

Conditions and measures related to external treatment of waste for disposal (1272)

Not applicable

Conditions and measures relating to external waste recovery (1271)

Not applicable

Other environmental control measures in addition to the above (1287)

None

(CS37); with sampling (CS56).

EXPOSURE SCENARIOS

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MTBE

1. Formulation of MTBE

Section 1			
Title			
Formulation of MTBE; CAS NR 1634-04-4			
Use Descriptor	VT-T		
Sector of use	Industrial (SU3)		
Process categories	PROC1, PROC2, PROC3, PROC4, PROC5, PROC8A, PROC8B,		
	PROC9, PROC15		
Environmental release categories	ERC2		
Processes, tasks, activities covered			
including storage, material transfer, laboratory activities.	aging of the substance and its mixtures in batch or continuous operations, mixing, large and small-scale packaging, maintenance, and associated		
Section 2 Operational conditions and	l risk management measures		
Section 2.1 Control of worker exposu	ire		
Product Characteristics:	1		
Physical state of product	Liquid, vapor pressure > 10 kPa under standard conditions (OC5).		
Concentration of substance in	Covers percentage substance in the product up to 100 %		
product	(unless stated differently) (G13).		
Quantity used	Not applicable.		
Frequency and duration of	Covers daily exposure of up to 8 hours (unless otherwise specified) (G2).		
use/exposure			
Human factors not influenced by	Not applicable.		
risk management			
Other operational conditions	Assumes use of the product at a temperature not exceeding 20°C above		
affecting exposure	ambient temperature, unless otherwise specified (G15). Assumes the		
	application of an adequate basic standard of hygiene in the workplace		
Fymanya anamasina	(G1).		
Exposure scenarios	Specific risk management measures and operating conditions		
General Measures (Skin Irritants)	Avoid direct contact with the skin. Identify potential areas of indirect skin		
(G19)	contact. Wear protective gloves (tested according to EN374) if skin contact		
	is likely. Eliminate contamination/spills as soon as they occur. Immediately remove any contamination from the skin. Provide basic		
	training to personnel aimed at preventing/limiting exposure and report the		
General Exposures (Closed	onset of any dermatological problems (E3).		
Systems) (CS15)	No specific measures have been identified (El18).		
General exposures (closed	Ensure an adequate standard of controlled ventilation (10 to 15 air		
systems) (CS15); with sampling	changes per hour) (E40).		
(CS56).	Changes per nour) (LTO).		
General exposures (closed	Provide extract ventilation to points where emissions occur (E54).		
systems) (CS15); Use in batch	1 Total Oxidati folialidin to points where chilosonis occur (EST).		
processes under containment			



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General exposures (open systems) (CS16). Batch process (CS55). With sampling (CS56). Filling/preparation of equipment from drums or containers (CS45).	Provide extract ventilation to points where emissions occur (E54).				
General exposures (closed systems) (CS15); Batch processes at high temperatures (CS136); with sampling (CS56);	Formulate substances in closed or ventilated mixing containers (E46). Provide extract ventilation to points where emissions occur (E54).				
In-process sampling (CS2)	Provide extract ventilation to points where emissi	ons occur (E54).			
Laboratory activities (CS36). Cleaning (CS47)	Handle in a fume cupboard or under extract venti	lation (E83).			
Bulk closed loading and unloading (CS501). Dedicated facility (CS81)	Ensure material transfers are under containment (E82).	or extract ventilation.			
Mixing operations (open systems) (CS30); Batch process (CS55).	Provide extract ventilation to points where emissi	ons occur (E54).			
Manual (CS34); Transfer/pouring from containers (CS22);	Ensure material transfers are under containme (E66).	nt or extract ventilation			
non-dedicated facility (CS82).					
Drum/batch transfers (CS8); Dedicated facility (CS81)	Use drum pumps (E53); Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings (E60).				
Drums and small containers filling (CS6); Dedicated facility (CS81)					
Equipment Cleaning and					
Maintenance (CS39);	(E55).				
non-dedicated facility (CS82).	Do not carry out activities involving potential exposure for more than 4 hours (OC28). Wear a respirator conforming to EN140 with Type A filter or better (PPE22).				
Storage (CSG7)	No specific measures have been identified (El18).				
rorage (CS67). No specific measures have been identified (El18). Peneral Exposures (Closed vstems) (CS15)		•			
Storage (CS67). General exposures (closed systems)	age (CS67). Do not carry out activities involving potential exposure for more than 4				
(CS15). With sampling (CS56).	Wear a respirator conforming to EN140 with Type	A filter or better (PPE22).			
Section 2.2 Environmental Exposure	Control				
Product characteristics					
	.); Predominantly hydrophobic (PrC4a); Readily biod	degradable (PrC5a).			
•	Operational Conditions				
For external use (OOC1). Amounts used					
Fraction of EU tonnage used in region) (A1)	0.57			
Regional tonnage (tonnes/year) (A2)	· (∩♣/	659,000			
Fraction of regional tonnage used loc	ally (A3)	0.05			
Average daily site tonnage (kg/day)		109,833			
Annual site tonnage (tons/year) 32,950					
Frequency and duration of use					
Continuous release (FD2)					
Emission days (days/year) (FD4) 300					
Other given operational conditions affecting environmental exposure					
Use in closed systems, in dry or wet processes.					
Release fraction to air from process		1.00E-03			
Release fraction to wastewater from	•	3.00E-04			
Release fraction to soil from process (only regional) 1.00E-04					
RMMs					



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Technical conditi	ions and measures at process level (source) to prevent release
	es vary across sites thus conservative process release estimates used [TCS1].
Technical onsite	conditions and measures to reduce or limit discharges, air emissions and releases to soil
Air	No air emission control required; required removal efficiency is 0% (TCR5).
Wastewater	Treat wastewater on-site (prior to discharge) to ensure the required removal efficiency >99% (TCR8).
Soil	Treat emissions in such a way as to ensure a typical removal efficiency of (%) (TCR7).
Organizational m	neasures to prevent/limit release from the site (1286)
Prevent the relea	ase of undissolved substances or their recovery from wastewater (OMS1).
Conditions and n	neasures related to municipal sewage treatment plant (1273)
It is assumed that	at the output flow rate from the industrial wastewater treatment plant is 2000 m3/day.
Conditions and n	neasures related to external treatment of waste for disposal (1272)
Not applicable	
Conditions and n	neasures relating to external waste recovery (1271)
Not applicable	·
Other environme	ental control measures in addition to the above (1287)
None	

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Complies with Regulation (EU) No. 2020/878 as amended.

2. Use of MTBE as intermediate - Industrial

Section 1				
Title				
Use of MTBE as an intermediate; CAS NR 1634-04-4				
Use Descriptor	J 1111 100 1	V1 1		
Sector of use		Industrial (SU3)		
Process categories		PROC1, PROC2, PROC3, PROC4, PROC8A, PROC8B, PROC15		
Environmental release categories		ERC6a		
Processes, tasks, activities covered		LNCOd		
	cludes rec	ycling/ recovery, material transfers, storage, sampling,		
		and loading (including marine vessel/barge, road/rail car and		
bulk container)	itolianoo t	and loading (morading marine vessel) sarge, ready rail our and		
Section 2 Operating Conditions and I	Risk Mana	gement Measures		
Cootion 2 operating contactions and	Mon mana	Bonnone mododioo		
Section 2.1 Control of worker exposu	ıre			
Product Characteristics	110			
Physical state of product	Liquid v	apor pressure > 10 kPa under standard conditions (OC5).		
Concentration of substance in		percentage of substance in the product up to 100% (unless		
product		e stated) (G13).		
Quantity used	Not appl			
Frequency and duration of		aily exposure of up to 8 hours (unless otherwise specified) (G2).		
use/exposure	0010.00	any expectate of up to a neuro (unicos and mos apasinau) (u.z.).		
Human factors not influenced by	Not applicable			
risk management	The approach			
Other operational conditions	Assumes use of the product at a temperature not exceeding 20 °C above			
affecting exposure	ambient temperature, unless otherwise specified (G15). Assumes the			
5 1		on of an adequate basic standard of hygiene in the workplace		
	(G1).	,		
Exposure scenarios	Specific	measures for risk management and operational conditions		
General Measures (Skin Irritants)		ect contact with the skin. Identify potential areas of indirect skin		
(G19)		Wear protective gloves (tested according to EN374) if skin contact		
	is likely.	Eliminate contamination/spills as soon as they occur.		
		tely remove any contamination from the skin. Provide basic		
		to personnel aimed at preventing/limiting exposure and report the		
	onset of any dermatological problems (E3).			
General Exposures (Closed	No specific measures have been identified (EI18).			
Systems) (CS15)				
General exposures (closed	Ensure t	hat the operation is carried out outdoors (E69).		
systems) (CS15); with sampling				
(CS56).				
General exposures (closed	Provide	extract ventilation to points where emissions occur (E54).		
systems) (CS15); Use in batch				
processes under containment				
(CS37); with sampling (CS56).				



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	1	
General exposures (open systems)	Ensure material transfers are under containing	nent or extract ventilation
(CS16). Batch process (CS55).	(E66).	
With sampling (CS56).		
Filling/preparation of equipment		
from drums or containers (CS45).		(== 1)
In-process sampling (CS2); Dedicated facility (CS81)	Provide extract ventilation to points where emis	ssions occur (E54).
Laboratory activities (CS36).	Handle in a fume cupboard or under extract ver	ntilation (E83).
Cleaning (CS47)		(===)
Bulk opened loading and unloading	Do not carry out activities involving potential ex	posure for more than 4
(CS503) non-dedicated facility	hours (0C28).	
(CS82).	Wear a respirator conforming to EN140 with Typ	
Bulk closed loading and unloading	Do not carry out activities involving potential ex	sposure for more than 4
(CS501). Dedicated facility (CS81)	hours (0C28).	
	Wear a respirator conforming to EN140 with Typ	
Equipment Cleaning and Maintenance (CS39);	Drain down and flush system prior to equipmer (E55).	nt break-in or maintenance
non-dedicated facility (CS82).	Do not carry out activities involving potential ex	vacura for mara than A
non-dedicated facility (CS62).	hours (OC28).	tposure for more than 4
	Wear a respirator conforming to EN140 with Typ	e A filter or better (PPE22).
Storage (CS67).	No specific measures have been identified (EI1	
General Exposures (Closed		,
Systems) (CS15)		
Storage (CS67).	Do not carry out activities involving potential ex	posure for more than 4
General exposures (closed systems)	hours (0C28).	•
(CS15). With sampling (CS56).	Wear a respirator conforming to EN140 with Typ	be A filter or better (PPE22).
Section 2.2 Environmental Exposure		
Product characteristics		
Substance is a unique structure(PrC	1); Predominantly hydrophobic (PrC4a); Readily b	iodegradable (PrC5a).
Operational Conditions		
For external use (OOC1).		
Amounts used		
Fraction of EU tonnage used in regio	n (A1)	0.01
Regional tonnage (tonnes/year) (A2)		8,030
Fraction of regional tonnage used lo	cally (A3)	1
Average daily site tonnage (kg/day)		26,767
Annual site tonnage (tons/year)		8,030
Frequency and duration of use		
Continuous release (FD2)		
Emission days (days/year) (FD4)		300
Other given operational conditions a	ffecting environmental exposure	
Use in closed systems, in dry or wet	processes.	
Release fraction to air from process		5.00E-02
Release fraction to wastewater from	process	8.00e-06
Release fraction to soil from process	s (only regional)	1.00E-04
RMMs		
Technical conditions and measures	at process level (source) to prevent release	
	thus conservative process release estimates use	d [TCS1].
	sures to reduce or limit discharges, air emissions	
	n control required; required removal efficiency is	
Wastewater Treat wastewa >90% (TCR8).	ter on-site (prior to discharge) to ensure the requ	ired removal efficiency
· · · · · · · · · · · · · · · · · · ·	on controls are required; the required removal eff	iciency is 0%
Organizational measures to prevent		icicity is 070
	ubstances or their recovery from wastewater (OM	(\$1)
	municipal sewage treatment plant (1273)	IJ± <i>)</i> .
	te from the industrial wastewater treatment plan	t is 2000 m3/day
		it is 2000 iiis/ uay.
Conditions and measures related to	external treatment of waste for disposal (1272)	



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Not applicable
Conditions and measures relating to external waste recovery (1271)
Not applicable
Other environmental control measures in addition to the above (1287)
None

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3. Use of MTBE as Process Solvent and Extraction Agent - Industrial

Section 1	
Title	
	extraction agent; CAS NR 1634-04-4
Usage descriptors	
Sector of use	Industrial (SU3, SU8, SU9)
Process categories	PROC1, PROC2, PROC3, PROC4, PROC8A, PROC8B, PROC15
Environmental release categories	ERC4
Processes, tasks, activities covered	
	nt and extraction agent. It includes recycling/recovery, material transfer,
	ies, maintenance and loading operations (on boats/barges, wheeled or rail
tank cars and bulk storage container	rs).
Section 2 Operational conditions and	I risk management measures
Section 2.1 Control of worker exposu	ire
Product Characteristics	Limit commence > 40 LP- and an about and thing (005)
Physical state of product	Liquid, vapor pressure > 10 kPa under standard conditions (OC5).
Concentration of substance in product	Covers percentage substance in the product up to 100% (unless stated differently) (G13).
Quantity used	Not applicable.
Frequency and duration of	Covers a daily exposure of up to 8 hours (unless otherwise specified) (G2).
use/exposure	
Human factors not influenced by	Not applicable.
risk management	
Other operational conditions	Assumes use of the product at a temperature not exceeding 20 °C above
affecting exposure	ambient temperature, unless otherwise specified (G15). Assumes the
	application of an adequate basic standard of hygiene in the workplace (G1).
Exposure scenarios	Specific risk management measures and operating conditions
General Measures (Skin Irritants)	Avoid direct contact with the skin. Identify potential areas of indirect skin
(G19)	contact. Wear protective gloves (tested according to EN374) if skin contact
	is likely. Eliminate contamination/spills as soon as they occur. Immediately remove any contamination from the skin. Provide basic
	training to necessary aimed at preventing /limiting exposure and report the
	training to personnel aimed at preventing/limiting exposure and report the onset of any dermatological problems (F3)
General Exposures (Closed	onset of any dermatological problems (E3).
General Exposures (Closed Systems) (CS15)	
Systems) (CS15)	onset of any dermatological problems (E3). No specific measures have been identified (EI18).
Systems) (CS15) General exposures (closed	onset of any dermatological problems (E3).
Systems) (CS15)	onset of any dermatological problems (E3). No specific measures have been identified (EI18).
Systems) (CS15) General exposures (closed systems) (CS15); with sampling	onset of any dermatological problems (E3). No specific measures have been identified (EI18).
Systems) (CS15) General exposures (closed systems) (CS15); with sampling (CS56).	onset of any dermatological problems (E3). No specific measures have been identified (EI18). Ensure that the operation is carried out outdoors (E69).
Systems) (CS15) General exposures (closed systems) (CS15); with sampling (CS56). General exposures (closed systems) (CS15); Use in batch processes under containment	onset of any dermatological problems (E3). No specific measures have been identified (EI18). Ensure that the operation is carried out outdoors (E69).
Systems) (CS15) General exposures (closed systems) (CS15); with sampling (CS56). General exposures (closed systems) (CS15); Use in batch processes under containment (CS37); with sampling (CS56).	onset of any dermatological problems (E3). No specific measures have been identified (EI18). Ensure that the operation is carried out outdoors (E69). Provide extract ventilation to points where emissions occur (E54).
Systems) (CS15) General exposures (closed systems) (CS15); with sampling (CS56). General exposures (closed systems) (CS15); Use in batch processes under containment (CS37); with sampling (CS56). General exposures (open systems)	onset of any dermatological problems (E3). No specific measures have been identified (EI18). Ensure that the operation is carried out outdoors (E69). Provide extract ventilation to points where emissions occur (E54). Ensure material transfers are under containment or extract ventilation
Systems) (CS15) General exposures (closed systems) (CS15); with sampling (CS56). General exposures (closed systems) (CS15); Use in batch processes under containment (CS37); with sampling (CS56). General exposures (open systems) (CS16). Batch process (CS55).	onset of any dermatological problems (E3). No specific measures have been identified (EI18). Ensure that the operation is carried out outdoors (E69). Provide extract ventilation to points where emissions occur (E54).
Systems) (CS15) General exposures (closed systems) (CS15); with sampling (CS56). General exposures (closed systems) (CS15); Use in batch processes under containment (CS37); with sampling (CS56). General exposures (open systems) (CS16). Batch process (CS55). With sampling (CS56).	onset of any dermatological problems (E3). No specific measures have been identified (EI18). Ensure that the operation is carried out outdoors (E69). Provide extract ventilation to points where emissions occur (E54). Ensure material transfers are under containment or extract ventilation
Systems) (CS15) General exposures (closed systems) (CS15); with sampling (CS56). General exposures (closed systems) (CS15); Use in batch processes under containment (CS37); with sampling (CS56). General exposures (open systems) (CS16). Batch process (CS55). With sampling (CS56). Filling/preparation of equipment	onset of any dermatological problems (E3). No specific measures have been identified (EI18). Ensure that the operation is carried out outdoors (E69). Provide extract ventilation to points where emissions occur (E54). Ensure material transfers are under containment or extract ventilation
Systems) (CS15) General exposures (closed systems) (CS15); with sampling (CS56). General exposures (closed systems) (CS15); Use in batch processes under containment (CS37); with sampling (CS56). General exposures (open systems) (CS16). Batch process (CS55). With sampling (CS56). Filling/preparation of equipment from drums or containers (CS45).	onset of any dermatological problems (E3). No specific measures have been identified (E118). Ensure that the operation is carried out outdoors (E69). Provide extract ventilation to points where emissions occur (E54). Ensure material transfers are under containment or extract ventilation (E66).
Systems) (CS15) General exposures (closed systems) (CS15); with sampling (CS56). General exposures (closed systems) (CS15); Use in batch processes under containment (CS37); with sampling (CS56). General exposures (open systems) (CS16). Batch process (CS55). With sampling (CS56). Filling/preparation of equipment from drums or containers (CS45). In-process sampling (CS2);	onset of any dermatological problems (E3). No specific measures have been identified (EI18). Ensure that the operation is carried out outdoors (E69). Provide extract ventilation to points where emissions occur (E54). Ensure material transfers are under containment or extract ventilation
Systems) (CS15) General exposures (closed systems) (CS15); with sampling (CS56). General exposures (closed systems) (CS15); Use in batch processes under containment (CS37); with sampling (CS56). General exposures (open systems) (CS16). Batch process (CS55). With sampling (CS56). Filling/preparation of equipment from drums or containers (CS45). In-process sampling (CS2); Dedicated facility (CS81)	onset of any dermatological problems (E3). No specific measures have been identified (E118). Ensure that the operation is carried out outdoors (E69). Provide extract ventilation to points where emissions occur (E54). Ensure material transfers are under containment or extract ventilation (E66). Provide extract ventilation to points where emissions occur (E54).
Systems) (CS15) General exposures (closed systems) (CS15); with sampling (CS56). General exposures (closed systems) (CS15); Use in batch processes under containment (CS37); with sampling (CS56). General exposures (open systems) (CS16). Batch process (CS55). With sampling (CS56). Filling/preparation of equipment from drums or containers (CS45). In-process sampling (CS2); Dedicated facility (CS81) Laboratory activities (CS36).	onset of any dermatological problems (E3). No specific measures have been identified (E118). Ensure that the operation is carried out outdoors (E69). Provide extract ventilation to points where emissions occur (E54). Ensure material transfers are under containment or extract ventilation (E66).
Systems) (CS15) General exposures (closed systems) (CS15); with sampling (CS56). General exposures (closed systems) (CS15); Use in batch processes under containment (CS37); with sampling (CS56). General exposures (open systems) (CS16). Batch process (CS55). With sampling (CS56). Filling/preparation of equipment from drums or containers (CS45). In-process sampling (CS2); Dedicated facility (CS81) Laboratory activities (CS36). Cleaning (CS47)	onset of any dermatological problems (E3). No specific measures have been identified (EI18). Ensure that the operation is carried out outdoors (E69). Provide extract ventilation to points where emissions occur (E54). Ensure material transfers are under containment or extract ventilation (E66). Provide extract ventilation to points where emissions occur (E54). Handle in a fume cupboard or under extract ventilation (E83).
Systems) (CS15) General exposures (closed systems) (CS15); with sampling (CS56). General exposures (closed systems) (CS15); Use in batch processes under containment (CS37); with sampling (CS56). General exposures (open systems) (CS16). Batch process (CS55). With sampling (CS56). Filling/preparation of equipment from drums or containers (CS45). In-process sampling (CS2); Dedicated facility (CS81) Laboratory activities (CS36).	onset of any dermatological problems (E3). No specific measures have been identified (E118). Ensure that the operation is carried out outdoors (E69). Provide extract ventilation to points where emissions occur (E54). Ensure material transfers are under containment or extract ventilation (E66). Provide extract ventilation to points where emissions occur (E54).



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Bulk closed loading and unloading	Do not carry out activities involving potential ex	posure for more than 4
(CS501). Dedicated facility (CS81)	hours (0C28).	
	Wear a respirator conforming to EN140 with Typ	
Equipment Cleaning and	Drain down and flush system prior to equipmer	nt break-in or maintenance
Maintenance (CS39);	(E55).	
non-dedicated facility (CS82).	Do not carry out activities involving potential ex	posure for more than 4
	hours (0C28).	A ("U
01 (0007)	Wear a respirator conforming to EN140 with Typ	
Storage (CS67).	No specific measures have been identified (EI1	8)
General Exposures (Closed		
Systems) (CS15)		
Storage (CS67).	Do not carry out activities involving potential ex	posure for more than 4
General exposures (closed systems)	hours (0C28).	A ("U
(CS15). With sampling (CS56).	Wear a respirator conforming to EN140 with Typ	be A filter or better (PPE22).
Section 2.2 Environmental Exposure	Control	
Product characteristics		
• • • • • • • • • • • • • • • • • • • •	L); Predominantly hydrophobic (PrC4a); Readily b	iodegradable (PrC5a).
Operational Conditions		
For external use (00C1).		
Amounts used		
Fraction of EU tonnage used in region		0.00
Regional tonnage (tonnes/year) (A2)		2,010
Fraction of regional tonnage used loc	cally (A3)	0.3
Average daily site tonnage (kg/day)		1,834
Annual site tonnage (tons/year)		603
Frequency and duration of use		
Continuous release (FD2)		
Emission days (days/year) (FD4)		120
Other given operational conditions at	ffecting environmental exposure	
Use in closed systems, in dry or wet p	processes.	
		1
Release fraction to air from process		2.50E-01
	process	2.50E-01 1.00E-01



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RMMs	
Technical conditions	s and measures at process level (source) to prevent release
Common practices	vary across sites thus conservative process release estimates used [TCS1].
Technical onsite cor	nditions and measures to reduce or limit discharges, air emissions and releases to soil
Air	No air emission control required; required removal efficiency is 0% (TCR5).
Wastewater	Treat wastewater on-site (prior to discharge) to ensure the required removal efficiency >99% (TCR8).
Soil	No soil emission controls are required; the required removal efficiency is 0%
Organizational mea	sures to prevent/limit release from the site (1286)
Prevent the release	of undissolved substances or their recovery from wastewater (OMS1).
Conditions and mea	asures related to municipal sewage treatment plant (1273)
It is assumed that t	he output flow rate from the industrial wastewater treatment plant is 2000 m3/day.
Conditions and mea	asures related to external treatment of waste for disposal (1272)
Not applicable	
Conditions and mea	asures relating to external waste recovery (1271)
Not applicable	
Other environmenta	al control measures in addition to the above (1287)
None	



4. Transport and Distribution of MTBE - Industrial

Section 1		
Title		
MTBE Transport & Distribution; CAS	NR 1634-0	<u>4-4</u>
Use Descriptor	1111 200 1 0	
Sector of use		Industrial (SU3)
Process categories		PROC1, PROC2, PROC3, PROC4, PROC8A, PROC8B, PROC9,
1 100033 categories		PROC15
Environmental release categories		ERC1, ERC2
Specific Environment Release Categories	ories	ESVOC3 SpERC
Processes, tasks, activities covered	01.00	10.000 op.1.0
Loading of substances (on ships/bar accidental exposure during samplin (CGES1A_I).	ng, storage	rucks/railcars, and IBCs) in closed or contained systems, including , unloading, maintenance, and associated laboratory activities
Section 2 Operational Conditions an	d Risk Man	agement Measures
Section 2.1 Control of worker exposi	ıre	
Product Characteristics		
Physical state of product		apor pressure > 10 kPa under standard conditions (OC5).
Concentration of substance in		percentage of substance in the product up to 100% (unless
product		e stated) (G13).
Quantity used	Not appli	
Frequency and duration of use/exposure	Covers a	daily exposure of up to 8 hours (unless otherwise specified) (G2).
Human factors not influenced by risk management	Not appli	cable.
Other operational conditions	Assumes	use of the product at a temperature not exceeding 20°C above
affecting exposure	application	temperature, unless otherwise specified (G15). Assumes the on of an adequate basic standard of hygiene in the workplace
Evnecure cooperies	(G1).	risk management measures and operating conditions
Exposure scenarios General Measures (Skin Irritants)		ect contact with the skin. Identify potential areas of indirect skin
(G19)	contact. I is likely. I Immedia training t	Wear protective gloves (tested according to EN374) if skin contact Eliminate contamination/spills as soon as they occur. tely remove any contamination from the skin. Provide basic o personnel aimed at preventing/limiting exposure and report the any dermatological problems (E3).
General Exposures (Closed Systems) (CS15)	No specif	fic measures have been identified (EI18).
General exposures (closed systems) (CS15); with sampling (CS56).	Ensure th	nat the operation is carried out outdoors (E69).
General exposures (closed systems) (CS15); Use in Batch	Do not ca	nat the operation is carried out outdoors (E69). earry out activities involving potential exposure for more than 4
processes under containment	hours (00	,
(CS37); with sampling (CS56). General exposures (open systems)		espirator conforming to EN140 with Type A filter or better (PPE22). extract ventilation to points where emissions occur (E54).
(CS16). Batch process (CS55). With sampling (CS56). Filling/preparation of equipment	Ensure th	extract ventilation to points where emissions occur (E54). nat samples are collected under containment or extraction on conditions (E76).
from drums or containers (CS45). In-process sampling (CS2)	minutes Wear a re	arry out activities involving potential exposure for more than 15 (OC26). espirator conforming to EN140 with Type A filter or better
	(PPE22).	



ANNEX TO THE SDS - GASOLINE

Cleaning (CS 47)	T	
Cleaning (CS47)	Engues that the operation is serviced and and and	:60/
Bulk closed loading and unloading	Ensure that the operation is carried out outdoors (E	
(CS501). Dedicated facility (CS81)	Do not carry out activities involving potential exposu	ire for more than 1 nour
	(0C27).	filter or better (DDEOO)
B. II. II	Wear a respirator conforming to EN140 with Type A	
Bulk opened loading and unloading	Ensure that material transfer is under conta	
(CS503); non-dedicated facility	ventilation conditions (E66) or (G9) Wear a respirato	or conforming to EN140
(CS82).	with Type A filter or better (PPE22).	
Drums and small containers filling	Fill containers/cans at dedicated fill points supp	olled with local extract
(CS6);	ventilation (E51).	
dedicated facility (CS81).		
Equipment Cleaning and	Drain down and flush system prior to equipment br	eak-in or maintenance
Maintenance (CS39);	(E55).	
non-dedicated facility (CS82).		
Storage (CS67) General Exposures	No specific measures have been identified (El18).	
(Closed Systems) (CS15)		
Storage (CS67) General exposures	Professional and domestic use of the product that	leads to immersing the
(closed systems) (CS15) with	substances in a matrix (0C27).	("II
sampling (CS56).	Wear a respirator conforming to EN140 with Type A	filter or better (PPE22).
Section 2.2 Environmental Exposure	Control	
Product characteristics		
	1); Predominantly hydrophobic (PrC4a); Readily biode	egradable (PrC5a).
Transport and distribution		
Operational Conditions		
For external use (OOC1).		
Amounts used		1
Fraction of EU tonnage used in regio		0.57
Regional tonnage (tonnes/year) (A2)		659,000
Fraction of regional tonnage used lo	cally (A3)	0.02
Average daily site tonnage (kg/day)		37,657
Annual site tonnage (tons/year)		13,180
Frequency and duration of use		
Continuous release (FD2)		
Emission days (days/year) (FD4)		350
Other given operational conditions a		
Use in closed systems, in dry or wet	processes.	
Release fraction to air from process		1.00E-04
Release fraction to wastewater from	process	1.00E-05
Release fraction to soil from process	s (only regional)	1.00E-05
RMMs		
Technical conditions and measures	at process level (source) to prevent release	
Common practices vary across sites	thus conservative process release estimates used [To	CS1].
Technical onsite conditions and mea	sures to reduce or limit discharges, air emissions an	d releases to soil
Air No air emissio	n control required; required removal efficiency is 0%	(TCR5).
Wastewater Treat wastewa	ter on-site (prior to discharge) to ensure the required	removal efficiency
>95% (TCR8).		
	on controls are required; the required removal efficient	ncy is 0%
Organizational measures to prevent	, ,	
	ubstances or their recovery from wastewater (OMS1)	•
	municipal sewage treatment plant (1273)	
	te from the industrial wastewater treatment plant is	2000 m3/day.
	external treatment of waste for disposal (1272)	
Not applicable		
Conditions and measures relating to	external waste recovery (1271)	
Not applicable		
Other environmental control measur	es in addition to the above (1287)	
None		



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Storage		
Operational Condition	ons	
For external use (OC	DC1).	
Amounts used		
Fraction of EU tonna	age used in region (A1)	0.57
Regional tonnage (t	onnes/year) (A2)	659,000
Fraction of regional	tonnage used locally (A3)	1
Average daily site to	onnage (kg/day) (A4)	1,805,479
Annual site tonnage	e (tons/year) (A5)	659,000
Frequency and dura	tion of use	·
Continuous release	(FD2)	
Emission days (days	s/year) (FD4)	365
Other given operation	onal conditions affecting environmental exposure	
Use in closed syster	ms, in dry or wet processes.	
Release from proce	ss waste water (Kg/day)	8.4
RMMs		
Technical conditions	s and measures at process level (source) to prevent releas	se
	vary across sites thus conservative process release estima	
Technical onsite cor	nditions and measures to reduce or limit discharges, air e	missions and releases to soil
Air	Emission controls are not applicable, as no direct release	
Wastewater	Treat wastewater on-site (prior to discharge) to ensure t >99% (TCR8).	the required removal efficiency
Soil	Soil emission controls are not applicable as there is no	direct release to soil (TCR4).
Organizational mea	sures to prevent/limit release from the site (1286)	
Prevent the release	of undissolved substances or their recovery from wastewa	ater (OMS1).
Prevent leakages ar	nd spillages to soil.	
Conditions and mea	sures related to municipal sewage treatment plant (1273	3)
It is assumed that the	he output flow rate from the industrial wastewater treatm	ent plant is 2000 m3/day.
Conditions and mea	sures related to external treatment of waste for disposal	(1272)
Not applicable		
Conditions and mea	sures relating to external waste recovery (1271)	
Not applicable		
Other environmenta	al control measures in addition to the above (1287)	
None	·	



Complies with Regulation (EU) No. 2020/878 as amended.

5. Use of MTBE in Fuels - Industrial

Section 1		
Title		
Use of MTBE in fuels; CAS NR 1634-0	<u> </u>	
Use Descriptor	J 	
Sector of use		Industrial (SU3)
Process categories		PROC1, PROC2, PROC3, PROC8A, PROC8B, PROC16
Specific environmental release categories	Torios	ESVOC3 SpERC
Processes, tasks, activities covered	501163	154003 3pEnc
· · ·	\ including	g activities associated with transfer, use, equipment maintenance
and disposal of waste (GES12_I).), including	g activities associated with transfer, use, equipment maintenance
Section 2 Operational conditions and	l risk man	agement measures
Section 2 Operational conditions and	a rion illuli	agomont mousures
Section 2.1 Control of worker exposu	ire	
Product Characteristics	410	
Physical state of product	Liquid v	apor pressure > 10 kPa under standard conditions (OC5).
Concentration of substance in		up to 15% of the substance in the product.
product	OUVEIS U	to 20% of the substance in the product.
Quantity used	Not app	licable
Frequency and duration of		laily exposure of up to 8 hours (unless otherwise specified) (G2).
use/exposure	OUVEIS	any exposure of up to o flours (unless otherwise specifica) (uz).
Human factors not influenced by	Not app	licable
risk management	ιτοι αρρι	icabic.
Other operational conditions	Assume	s the application of an adequate basic standard of hygiene in the
affecting exposure	workpla	
Exposure scenarios		risk management measures and operating conditions
General Measures (Skin Irritants)		rect contact with the skin. Identify potential areas of indirect skin
(G19)		Wear protective gloves (tested according to EN374) if skin contact
(3.2)		Eliminate contamination/spills as soon as they occur.
	_	ately remove any contamination from the skin. Provide basic
		to personnel aimed at preventing/limiting exposure and report the
		any dermatological problems (E3).
Bulk product transfer (CS14);	Ensure r	material transfers are under containment or extract ventilation
Batch process (CS55);	(E66).	
with sampling (CS56);		
Filling/preparation of equipment		
from drums or containers (CS45).		
Drum/batch transfers (CS8);	Use drur	m pumps (E53).
Filling/preparation of equipment		
from drums or containers (CS45);		
Bulk product transfer (CS14);		
dedicated facility (CS81).		
General Exposures (Closed	No spec	ific measures have been identified (EI18).
Systems) (CS15)	<u> </u>	
General exposures (closed	No spec	ific measures have been identified (EI18).
systems) (CS15); with sampling		
(CS56).		
General exposures (closed		arry out activities involving potential exposure for more than 4
systems) (CS15); Use in batch	hours (0	,
processes under containment	wear a r	espirator conforming to EN140 with Type A filter or better (PPE22).
(CS37); with sampling (CS56).	No see s	ific management have been identified (FIAO)
(closed systems) (CS107); fuel	No spec	ific measures have been identified (El18).
usage.	Da ::+ -	away and activities involving actautiel amazana for accus Alessa A
(closed systems) (CS107);		arry out activities involving potential exposure for more than 4
Discontinuous process (CS55).	hours (0	espirator conforming to EN140 with Type A filter or better (PPE22).
	I vvcai a i	espirator comorning to ENT40 with Type A filter of Detter (FFE22).



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Equipment Cleaning and	Do not carry out activities involving potential expos	sure for more than 1
Maintenance (CS39);	hours (OC28).	sure for more than 4
non-dedicated facility (CS82) e.g.	Wear a respirator conforming to EN140 with Type A	filter or better (PDF22)
repair of fuel pumps inside	Wear a respirator comorning to EN140 with Type A	tiliter of better (1 1 LZZ).
buildings.		
Storage (CS67);	No specific measures have been identified (EI18).	
General Exposures (Closed	no specific measures have been identified (£1±6).	
Systems) (CS15)		
Storage (CS67);	Ensure that the operation is carried out outdoors (E69).
General exposures (closed systems)	(,
(CS15); with sampling (CS56).		
Section 2.2 Environmental Exposure	Control	
Product features		
Substance is a unique structure(PrC	1); Predominantly hydrophobic (PrC4a); Readily biod	egradable (PrC5a).
Transport and distribution		,
Operational Conditions		
For external use (00C1).		
Amounts used		
Fraction of EU tonnage used in region	n (A1)	0.57
Regional tonnage (tonnes/year) (A2		659,000
Fraction of regional tonnage used lo	cally (A3)	0.02
Average daily site tonnage (kg/day)		37,657
Annual site tonnage (tons/year)		13,180
Frequency and duration of use		
Continuous release (FD2)		
Emission days (days/year) (FD4)		350
Other given operational conditions a	ffecting environmental exposure	
Use in closed systems, in dry or wet	processes.	
Release fraction to air from process		1.00E-04
Release fraction to wastewater from	process	1.00E-05
Release fraction to soil from process	s (only regional)	1.00E-05
RMMs		
Technical conditions and measures	at process level (source) to prevent release	
	thus conservative process release estimates used [7]	
	asures to reduce or limit discharges, air emissions ar	
Air No air emissio	n control required; required removal efficiency is 0%	(TCR5).
	ter on-site (prior to discharge) to ensure the required	removal efficiency
>95% (TCR8).		
	on controls are required; the required removal efficie	ency is 0%
Organizational measures to prevent		
	ubstances or their recovery from wastewater (OMS1)).
	municipal sewage treatment plant (1273)	
	te from the industrial wastewater treatment plant is	2000 m3/day.
	external treatment of waste for disposal (1272)	
Not applicable		
Conditions and measures relating to	external waste recovery (1271)	
Not applicable		
Other environmental control measur	es in addition to the above (1287)	
None		



6. Use of MTBE in Fuels - Professional

Section 1		
Title		
Use of MTBE in fuels; CAS NR 1634-0	04-4	
Use Descriptor		
Sector of use		Professional (SU22)
Process categories		PROC1, PROC2, PROC3, PROC8A, PROC8B, PROC9, PROC16
Environmental release categories		ERC8b, ERC8e
Specific environmental release category	gories	ESVOC30 SpERC
Processes, tasks, activities covered		
), including	g activities associated with transfer, use, equipment maintenance
and disposal of waste (GES12_I).		
Section 2 Operational conditions and	l risk man	agement measures
Section 2.1 Control of worker expens		
Section 2.1 Control of worker exposured Product Characteristics	li e	
Physical state of product	Liquid v	apor pressure > 10 kPa under standard conditions (OC5).
Concentration of substance in		p to 15% of the substance in product
product	COVEIS	p to 13% of the substance in product
Quantity used	Not app	icable
Frequency and duration of	Covers of	aily exposure of up to 8 hours (unless otherwise specified) (G2).
use/exposure		
Human factors not influenced by	Not app	icable.
risk management	_	
Other operational conditions		s the application of an adequate basic standard of hygiene in the
affecting exposure Exposure scenarios	workpla	
General Measures (Skin Irritants)		measures for risk management and operational conditions rect contact with the skin. Identify potential areas of indirect skin
(G19)		Wear protective gloves (tested according to EN374) if skin contact
(0.23)		Eliminate contamination/spills as soon as they occur.
		ately remove any contamination from the skin. Provide basic
		to personnel aimed at preventing/limiting exposure and report the
	onset of	any dermatological problems (E3).
Bulk product transfer (CS14);		material transfers are under containment or extract ventilation
Batch process (CS55);	(E66).	
Filling/preparation of equipment		
from drums or containers (CS45).		
Drum/batch transfers (CS8);		naterial transfers are under containment or extract ventilation
Filling/preparation of equipment	(E66).	
from drums or containers (CS45); Bulk product transfer (CS14);		
dedicated facility (CS81).		
Refueling (CS507)	Ensure a	nn adequate standard of controlled ventilation (10 to 15 air
Trondsmig (cost)		per hour) (E40).
General exposures (closed		ific measures have been identified (EI18)
systems) (CS15); with sampling		
(CS56).		
General exposures (closed	Ensure t	hat the operation is carried out outdoors (E69).
systems) (CS15); Use in batch		
processes under containment		
(CS37); with sampling (CS56).	llee daar	n numno ou toko nouticulou sous when nousing from souticulous
Filling drums and small containers		n pumps or take particular care when pouring from containers
(CS6); Dedicated facility (CS81)	(E64).	arry out activities involving potential exposure for more than 1 hour
Socioated facility (OGOL)	(0C27).	arry out addition into thing potential exposure for more than I flour



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closed systems) (CS107); fuel usage. Equipment Cleaning and Maintenance (CS39). Inon-dedicated facility (CS82) e.g. epair of fuel pumps inside buildings. Equipment Cleaning and Maintenance (CS39). Inon-dedicated facility (CS82) e.g. epair of fuel pumps outside buildings. Equipment Cleaning and Maintenance (CS39). Inon-dedicated facility (CS82) e.g. epair of fuel pumps outside buildings. Estorage (CS67); General Exposures (Close Exposures) (CS15) Esection 2.2 Environmental Exposures (Close Exposures) (CS15) Exposures (Close Exposures) (CS15) Exposures (Close Exposures) (CS15) Exposures (CS15) Exposures (Close Exposures) (CS15) Exposures (CS15)		ak-in or maintenance (E65). al exposure for more than 4 informing to EN140 with Type A ing equipment (E65). Do not sure for more than 4 hours ing to EN140 with Type A filter (E118).
Maintenance (CS39). non-dedicated facility (CS82) e.g. epair of fuel pumps inside buildings. Equipment Cleaning and Maintenance (CS39). non-dedicated facility (CS82) e.g. epair of fuel pumps outside buildings. Storage (CS67); General Exposures (Close Systems) (CS15) Section 2.2 Environmental Exposure Product characteristics Substance is a unique structure(Pi Operational Conditions For external use (OOC1). Amounts used Average daily consumption for a defrequency and duration of use Dispersive use (FD3) Emission days (days/year) (FD4) Other operability conditions affect Use in open systems Release fraction to air from highly	Do not carry out activities involving potential hours (OC28) or (G9). Wear a respirator confilter or better (PPE22). Drain the system before opening or servicing carry out activities involving potential exposition (OC28) or (G9). Wear a respirator conforming or better (PPE22). No specific measures have been identified and other control	al exposure for more than 4 informing to EN140 with Type A ing equipment (E65). Do not sure for more than 4 hours ing to EN140 with Type A filter (EI18).
Maintenance (CS39). non-dedicated facility (CS82) e.g. pon-dedicated pumps outside pon-dedicated Exposures (Close pon-dedicated Exposures (Close pon-dection 2.2 Environmental Exposures p	carry out activities involving potential expositions (OC28) or (G9). Wear a respirator conforming or better (PPE22). No specific measures have been identified attractions and the control of the contro	sure for more than 4 hours ng to EN140 with Type A filter (EI18).
General Exposures (Close Systems) (CS15) Gection 2.2 Environmental Exposure Product characteristics Substance is a unique structure (Properational Conditions For external use (OOC1). Amounts used Average daily consumption for a differency and duration of use Dispersive use (FD3) Emission days (days/year) (FD4) Other operability conditions affect Use in open systems Release fraction to air from highly	ure Control	
Product characteristics Substance is a unique structure(Properational Conditions For external use (OOC1). Amounts used Everage daily consumption for a defrequency and duration of use Dispersive use (FD3) Emission days (days/year) (FD4) Other operability conditions affect Use in open systems Release fraction to air from highly		ily biodegradable (PrC5a).
Substance is a unique structure(Poperational Conditions For external use (OOC1). Amounts used Average daily consumption for a defrequency and duration of use Dispersive use (FD3) Emission days (days/year) (FD4) Other operability conditions affect Use in open systems Release fraction to air from highly	rC1); Predominantly hydrophobic (PrC4a); Read	ily biodegradable (PrC5a).
Operational Conditions For external use (OOC1). Amounts used Average daily consumption for a defrequency and duration of use Dispersive use (FD3) Emission days (days/year) (FD4) Other operability conditions affect Use in open systems Release fraction to air from highly	rC1); Predominantly hydrophobic (PrC4a); Read	ily biodegradable (PrC5a).
Operational Conditions For external use (OOC1). Amounts used Average daily consumption for a defrequency and duration of use Dispersive use (FD3) Emission days (days/year) (FD4) Other operability conditions affect Use in open systems Release fraction to air from highly	,, ,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Amounts used Average daily consumption for a defrequency and duration of use Dispersive use (FD3) Emission days (days/year) (FD4) Other operability conditions affect Use in open systems Release fraction to air from highly		
Amounts used Average daily consumption for a defrequency and duration of use Dispersive use (FD3) Emission days (days/year) (FD4) Other operability conditions affect Use in open systems Release fraction to air from highly		
Average daily consumption for a defrequency and duration of use Dispersive use (FD3) Emission days (days/year) (FD4) Other operability conditions affect Use in open systems Release fraction to air from highly		
Frequency and duration of use Dispersive use (FD3) Emission days (days/year) (FD4) Other operability conditions affect Use in open systems Release fraction to air from highly	lisnersive use type (kg/day)	3.61
Dispersive use (FD3) Emission days (days/year) (FD4) Other operability conditions affect Use in open systems Release fraction to air from highly	inspersive dee type (Ng/ day)	0.02
mission days (days/year) (FD4) Other operability conditions affect Use in open systems Release fraction to air from highly		
Other operability conditions affect Use in open systems Release fraction to air from highly		365
Jse in open systems Release fraction to air from highly	ind anvisanmental avacausa	303
Release fraction to air from highly	ling environmental exposure	
	diamenting was (regional and) (0007)	4.005.00
release traction to wastewater fro		1.00E-02
		1.00E-05
	from highly dispersive use (regional only)	1.00E-04
	y dispersive use (regional only) (OOC9)	1.00E-05
RMMs		
	es at process level (source) to prevent release	
	es thus conservative process release estimates	
soil	neasures to reduce or limit discharges, air emis	
Air No air emiss	sion control required; required removal efficiend	cy is 0% (TCR5).
>38% (TCR8	water on-site (prior to discharge) to ensure the r 3).	required removal efficiency
Soil No soil emis	ssion controls are required; the required remova	Il efficiency is 0%
Organizational measures to preve	nt/limit release from the site (1286)	
revent the release of undissolved	d substances or their recovery from wastewater	(OMS1).
t is assumed that the output flow	to municipal sewage treatment plant (1273)	plant is 2000 m3/day
conditions and measures related	to municipal sewage treatment plant (1273) rate from the industrial wastewater treatment	plant is 2000 inis/ day.
Not applicable		
	rate from the industrial wastewater treatment	
Not applicable	rate from the industrial wastewater treatment to external treatment of waste for disposal (12)	
	rate from the industrial wastewater treatment	
None	rate from the industrial wastewater treatment to external treatment of waste for disposal (12)	



Complies with Regulation (EU) No. 2020/878 as amended.

7. Use of MTBE in fuels - Consumers

Section 1			
Title			
Use of MTBE in fuels; CAS NR 1634-0	74.4		
	/		
	Usage descriptors		
Sector of use		Consumers (SU21) PC13	
Process categories			
Environmental release categories	.	ERC8d	
Specific environmental release category	gories	ESVOC30 SpERC	
Processes, tasks, activities covered			
Use of fuel for refueling in 2-stroke a			
Section 2 Operational Conditions and	d RISK Ma	nagement Measures	
0			
Section 2.1 Control of worker exposu	ıre		
Product features		. 1015	(225)
Physical state of product		/apor pressure > 10 kPa under standard c	onditions (UC5).
Vapor pressure		a at 25°C	
Concentration of substance in	Diesel fu	uel, containing < 15% of the substance	
product			
Quantity used		litres for refuelling	
Frequency and duration of	Up to 3	times a week	
use/exposure			
Other operating conditions		otherwise specified, use is assumed to occ	cur at ambient
affecting exposure		ature (ConsOC15).	
Exposure scenarios		risk management measures and operation	
PC13: Fuel	ОС	Unless otherwise specified, includes co	
	(ConsOC1); includes use up to 150 days/year (ConsOC3); includes		
	frequencies of use up to once per day (ConsOC4); for each use, it		
		includes exposures up to 15 minutes per	
	RMM No specific RMM value developed beyond the reported OCs.		
Section 2.2 Environmental Exposure	Control		
Product characteristics			
	L); Predon	ninantly hydrophobic (PrC4a); Readily biod	legradable (PrC5a).
Product characteristics			
For external use (00C1).			
Amounts used			T
	Average daily consumption for a dispersive use type (kg/day) 3.61		
Frequency and duration of use			
Dispersive use (FD3)			T
Emission days (days/year) (FD4)			365
Other operability conditions affecting environmental exposure			
Use in open systems			
Release fraction to air from highly dispersive use (regional only) (00C7) 1.00E-02			
Release fraction to wastewater from highly dispersive use (00C8) 1.00E-05			
Release fraction to water surface from highly dispersive use (regional only) 1.00E-04			1.00E-04
Release fraction to soil from highly dispersive use (regional only) (00C9) 1.00E-05			
RMMs			
Technical conditions and measures at process level (source) to prevent release			
Common practices vary across sites thus conservative process release estimates used [TCS1].			
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil			
No air emission control required; required removal efficiency is 0% (TCR5).			
Wastewater Treat wastewa >37% (TCR8).	" · · · · · · · · · · · · · · · · · · ·		
	Treat emissions in such a way as to ensure a typical removal efficiency of (%) (TCR7).		



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Organizational measures to prevent/limit release from the site (1286)

Prevent the release of undissolved substances or their recovery from wastewater (OMS1).

Conditions and measures related to municipal sewage treatment plant (1273)

It is assumed that the output flow rate from the industrial wastewater treatment plant is 2000 m3/day.

Conditions and measures related to external treatment of waste for disposal (1272)

Not applicable

Conditions and measures relating to external waste recovery (1271)

Not applicable

Other environmental control measures in addition to the above (1287)

None



Complies with Regulation (EU) No. 2020/878 as amended.

TAME 1. Formulation of TAME

Section 1	Title of the exposure scenario
Title	TAME formulation; CAS number 91995-60-7
Use Descriptor	Sector of use: Industrial (SU3)
	Process categories: PROC1, PROC2, PROC3,
	PROC4,PROC5,PROC8a, PROC8b, PROC9, PROC15.
	Environmental Release Categories: ERC2
Processes, tasks, activities covered	Formulation, packaging, and repackaging of the
	substance and its mixtures in batch or continuous
	operations, including storage, material transfer, mixing,
	large and small-scale packaging, maintenance, and associated laboratory activities.
Section 2	Operational conditions and risk management measures
Section 2.1	Control of worker exposure
Product Characteristics	ocition of worker exposure
Physical state of product	Liquid, vapor pressure > 10 kPa under standard conditions (0C5)
Concentration of the substance in product	Covers up to 100% of the substance in the product
	(unless otherwise stated) (G13)
Quantity used	Not applicable
Frequency and duration of use/exposure	Covers daily exposure of up to 8 hours (unless otherwise
	specified) (G2)
Human factors not influenced by risk management	Not applicable
Other operational conditions affecting exposure	Assumes use of the product at a temperature not
	exceeding 20 °C above ambient temperature, unless
	otherwise specified (G15). Assumes the application of
	an adequate basic standard of hygiene in the workplace
Scenario characteristics	(G1). Specific measures for risk management
General Exposures (Closed Systems) (CS15)	No specific measures have been identified (El18).
General exposures (closed systems) (CS15). with	Ensure an adequate standard of general ventilation (no
sampling (CS56)	less than 3-5 air changes per hour) (E11).
	Do not carry out activities involving potential exposure
	for more than 4 hours (0C28).
General exposures (closed systems) (CS15) Use in	Provide extract ventilation to points where emissions
batch processes under containment (CS37) with	occur (E54).
sampling (CS56)	Dravida autrast vantilation to nainte where amissions
General exposures (open systems) (CS16).	Provide extract ventilation to points where emissions
Batch process (CS55). with sampling (CS56) Filling/preparation of equipment from drums or	occur (E54).
containers (CS45).	
General exposures (closed systems) (CS15). Batch	Provide extract ventilation to points where emissions
processes at high temperatures (CS136). with	occur (E54).
sampling (CS56)	
In-process sampling (CS2)	Provide extract ventilation to points where emissions
	occur (E54).
Laboratory activities (CS36). Cleaning (CS47)	Handle in a fume cupboard or under extract ventilation (E83).
Bulk closed loading and unloading (CS501). Dedicated facility (CS81)	Ensure an extraction ventilation system at the material transfer points and other openings (E82).
Mixing Operations (Open Systems) (CS30) Batch Process (CS55)	Provide extract ventilation to points where emissions occur (E54).



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Manual (CS34) Transfer/pouring from containers	Ensure material transfers are under containment or
(CS22) non-dedicated facility (CS82).	extract ventilation (E66).
Drum/batch transfers (CS8) dedicated facility (CS81)	Use drum pumps (E53) Minimise exposure by partial
	enclosure of the operation or equipment and provide
	extract ventilation at openings (E60).
Drums and small containers filling (CS6)	Fill containers/cans at dedicated fill points supplied with
Dedicated facility (CS81)	local extract ventilation (E51).
	Remove spills immediately (C&H13) Close containers
	immediately after use (E9).
Equipment Cleaning & Maintenance (CS39) Non-	Drain down and flush system prior to equipment break-
Dedicated Facility (CS82)	in or maintenance (E55).
	Do not carry out activities involving potential exposure
	for more than 4 hours (OC28) or (G9).
	Wear a respirator conforming to EN140 with Type A
	filter or better (PPE22). Store drains in sealed containers pending disposal or
	subsequent recycling (ENVT4).
Storage (CS67) General Exposures (Closed Systems)	No specific measures have been identified (El18).
(CS15)	no specific measures have been identified (E120).
Storage (CS67) General exposures (closed systems)	Do not carry out activities involving potential exposure
(CS15) with sampling (CS56).	for more than 4 hours (OC28) or (G9). Wear a respirator
	conforming to EN140 with Type A filter or better
	(PPE22).
Section 2.2	Environmental exposure control
Product characteristics	Substance is a unique structure(PrC1)
	Predominantly hydrophobic (PrC4a)
	Readily biodegradable (PrC5a)
Operational Conditions	For external use (00C1).
Amounts used	
Fraction of EU tonnage used in region (A1)	1
Regional tonnage (tonnes/year) (A2)	790,000
Fraction of regional tonnage used locally (A3)	0.05
Average daily site tonnage (kg/day)	13,167
Annual site tonnage (tons/year)	39,500
Frequency and duration of use	(50.0)
Release Type	Continuous release (FD2)
Emission days (days/year) (FD4)	300



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Other operational conditions affecting environmental	Use in closed systems
exposure	In both dry and wet processes
Release fraction to air from process	1.00E-03
Release fraction to wastewater from process	3.00E-04
Release fraction to soil from process (only regional)	1.00E-04
RMMs	
Technical conditions and measures at process level	Common practices vary across sites thus conservative
(source) to prevent release	process release estimates used [TCS1].
Technical onsite conditions and measures to reduce o	r limit discharges, air emissions and releases to soil
Air	No air emission control required; required removal
	efficiency is 0% (TCR5).
Wastewater	In case of discharge to an urban wastewater treatment
	plant, no treatment is required (TCR9).
Soil	No control of emissions into the soil is required. The
	required removal efficiency is 0%.
Organizational measures to prevent/limit release	Prevent the release of undissolved substances or their
from the site (1286)	recovery from wastewater (OMS1).
Conditions and measures related to municipal	It is assumed that the output flow rate from the industrial
sewage treatment plant (1273)	wastewater treatment plant is 2000 m3/day.
Conditions and measures relating to the external	Not applicable
treatment of waste for disposal (1272)	
Conditions and measures relating to external waste	Not applicable
recovery (1271)	
Other environmental control measures in addition to	None
the above	

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Complies with Regulation (EU) No. 2020/878 as amended.

2. Transport and Distribution of TAME

- · · · · ·	man de est
Section 1	Title of the exposure scenario
Title	Transportation and distribution of TAME; CAS number 91995-60-7
Use Descriptor	Sector of use: Industrial (SU3)
	Process categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15.
	Environmental Release Categories: ERC1, ERC2
	Specific Environmental Release Categories: ESVOC3 SpERC
Processes, tasks, activities covered	Loading of bulk substances (on ships/barges, tank trucks/railcars, and IBCs) in closed or contained systems, including accidental exposure during sampling, storage, unloading, maintenance, and associated laboratory activities.
Section 2	Operational conditions and risk management measures
Section 2.1	Worker Exposure Control
Product Characteristics	
Physical state of product	Liquid, vapor pressure > 10 kPa under standard conditions (OC5)
Concentration of substance in product	Covers up to 100% of the substance in the product (unless otherwise stated) (G13)
Quantity used	Not applicable
Frequency and duration of use/exposure	Covers daily exposure of up to 8 hours (unless otherwise specified) (G2)
Human factors not influenced by risk management	Not applicable
Other operational conditions affecting exposure	Assumes use of the product at a temperature not exceeding 20°C above ambient temperature, unless otherwise specified (G15). Assumes the application of an adequate basic standard of hygiene in the workplace
	(G1).
Scenario characteristics	Specific measures for risk management
General Exposures (Closed Systems) (CS15)	No specific measures have been identified (EI18).
General exposures (closed systems) (CS15). with sampling (CS56)	Do not carry out activities involving potential exposure for more than 4 hours (OC28).
General exposures (closed systems) (CS15) Use in batch processes under containment (CS37) with sampling (CS56)	Provide extract ventilation to points where emissions occur (E54). Wear a respirator conforming to EN140 with Type A filter or better (PPE22).
General exposures (open systems) (CS16). Batch process (CS55). with sampling (CS56) Filling/preparation of equipment from drums or containers (CS45).	Ensure that samples are collected under containment or extraction ventilation conditions (E76).
(CS2) dedicated facility (CS81)	Provide extract ventilation to points where emissions occur (E54). Wear a respirator conforming to EN140 with Type A filter or better (PPE22).
Laboratory activities (CS36). Cleaning (CS47)	Handle in a fume cupboard or under extract ventilation (E83).
Bulk opened loading and unloading (CS503); non- dedicated facility (CS82)	Ensure material transfers are under containment or extract ventilation (E66). Wear a respirator conforming to EN140 with Type A filter or better (PPE22).
Bulk closed loading and unloading (CS501). Dedicated facility (CS81)	Ensure that the operation is carried out outdoors (E69). Do not carry out activities involving potential exposure for more than 1 hour (OC27). Wear a respirator conforming to EN140 with Type A filter or better (PPE22).



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	<u> </u>
Filling drums and small containers (CS6).	Ensure material transfers are under containment or
Dedicated facility (CS81)	extract ventilation (E66). Wear a respirator conforming to
	EN140 with Type A filter or better (PPE22).
Equipment Cleaning & Maintenance (CS39) Non-	Drain down and flush system prior to equipment break-
Dedicated Facility (CS82)	in or maintenance (E55).
	Store drains in sealed containers pending disposal or
0 (0007)	subsequent recycling (ENVT4).
Storage (CS67) General Exposures (Closed Systems) (CS15)	No specific measures have been identified (EI18).
Storage (CS67) General exposures (closed systems)	Do not carry out activities involving potential exposure
(CS15) with sampling (CS56).	for more than 4 hours (0C28) or (G9).
	Wear a respirator conforming to EN140 with Type A filter
	or better (PPE22). Avoid dip sampling (E42).
	Ensure that samples are collected under containment or
	extraction ventilation conditions (E76). Ensure that the
	operation is carried out outdoors (E69).
Section 2.2	Environmental exposure control
Product characteristics	Substance is a unique structure(PrC1)
	Predominantly hydrophobic (PrC4a)
	Readily biodegradable (PrC5a)
Operational Conditions	For external use (OOC1).
Amounts used	
Fraction of EU tonnage used in region (A1)	1
Regional tonnage (tonnes/year) (A2)	790,000
Regional tollinge (tollies/ year) (A2)	
Fraction of regional tonnage used locally (A3)	0.02
Fraction of regional tonnage used locally (A3)	0.02
Fraction of regional tonnage used locally (A3) Average daily site tonnage (kg/day)	0.02 52,667
Fraction of regional tonnage used locally (A3) Average daily site tonnage (kg/day) Annual site tonnage (tons/year)	0.02 52,667



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Other given operational conditions affecting	Use in closed systems	
environmental exposure	In both dry and wet processes	
Release fraction to air from process	1.00E-04	
Release fraction to wastewater from process	1.00E-05	
Release fraction to soil from process (only regional)	1.00E-05	
RMMs		
Technical conditions and measures at process level	Common practices vary across sites thus conservative	
(source) to prevent release	process release estimates used [TCS1].	
Technical onsite conditions and measures to reduce o	r limit discharges, air emissions and releases to soil	
Air	No air emission control required; required removal	
	efficiency is 0% (TCR5).	
Wastewater	Treat wastewater on-site (prior to discharge) to ensure the	
	required removal efficiency >78% (TCR8).	
Soil	No soil emission controls are required; the required	
	removal efficiency is 0%	
Organizational measures to prevent/limit release	Prevent the release of undissolved substances or their	
from the site (1286)	recovery from wastewater (OMS1).	
Conditions and measures related to municipal	It is assumed that the output flow rate from the industrial	
sewage treatment plant (1273)	wastewater treatment plant is 2000 m3/day.	
Conditions and measures related to external	Not applicable	
treatment of waste for disposal (1272)		
Conditions and measures relating to external waste recovery (1271)	Not applicable	
Other environmental control measures in addition to	None	
the above		
Storage		
Operational Conditions	For external use (OOC1).	
Amounts used		
Fraction of EU tonnage used in region (A1)	1	
Regional tonnage (tonnes/year) (A2)	790,000	
Fraction of regional tonnage used locally (A3)	1	
Average daily site tonnage (kg/day)	2,164,383	
Annual site tonnage (tons/year)	790,000	
Frequency and duration of use		
Release Type	Continuous release (FD2)	
Emission days (days/year) (FD4)	365	
Other given operational conditions affecting	Use in closed systems	
environmental exposure	in dry or wet processes.	
Release into wastewater from the process	8,4	
RMMs		
Technical conditions and measures at process level	Common practices vary across sites thus conservative	
(source) to prevent release	process release estimates used [TCS1].	



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Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil		
Air	Emission controls are not applicable, as no direct release into the air is recorded (TCR2)	
Wastewater	Treat wastewater on-site (prior to discharge) to ensure the required removal efficiency >99% (TCR8).	
Soil	Controls on soil emissions are not applicable, as there is no recorded direct release into the ground (TCR4).	
Organizational measures to prevent/limit release from the site (1286)	Prevent the release of undissolved substances or their recovery from wastewater (OMS1).	
Conditions and measures related to municipal sewage treatment plant (1273)	It is assumed that the output flow rate from the industrial wastewater treatment plant is 2000 m3/day.	
Conditions and measures related to external treatment of waste for disposal (1272)	Not applicable	
Conditions and measures relating to external waste recovery (1271)	Not applicable	
Other environmental control measures in addition to the above (1287)	None	

Complies with Regulation (EU) No. 2020/878 as amended.

3. Use in fuels - Industrial

Section 1	Title of the exposure scenario
Title	Use in fuels; CAS number 91995-60-7
Use Descriptor	Sector of use: Industrial (SU3)
·	Process categories: PROC1, PROC2, PROC3, PROC8a,
	PROC8b, PROC16.
	Environmental Release Categories: ERC8b
	Environmental Release Specific Categories: ESVOC3
	SpERC
Processes, tasks, activities covered	Covers use as fuel additive, including activities associated
	with transfer, use, equipment maintenance and disposal
	of waste.
Section 2	Operating conditions and risk management measures
Section 2.1	Control of worker exposure
Product Characteristics	
Physical state of product	Liquid, vapor pressure > 10 kPa under standard
	conditions (OC5)
Concentration of substance in product	Includes percentages of the substance in the product up
	to 15% (Gnew)
Quantity used	Not applicable
Frequency and duration of use/exposure	Covers daily exposure of up to 8 hours (unless otherwise
	specified) (G2)
Human factors not influenced by risk management	Not applicable
Other operational conditions affecting exposure	Assumes the application of an adequate basic standard
	of hygiene in the workplace (G1).
Scenario characteristics	Specific measures for risk management
Bulk product transfer (CS14) Batch process (CS55)	Ensure material transfers are under containment or
with sampling (CS56) Filling/preparation of	extract ventilation (E66).
equipment from drums or containers (CS45).	Handwine roman (FF2)
Drum/batch transfers (CS8) Filling/preparation of equipment from drums or containers (CS45). Bulk	Use drum pumps (E53)
product transfer (CS14). dedicated facility (CS81).	
General Exposures (Closed Systems) (CS15)	No specific measures have been identified (EI18).
General exposures (closed systems) (CS15). with	No specific measures have been identified (E118).
sampling (CS56)	No specific measures have been identified (Lixo).
General exposures (closed systems) (CS15) Use in	No specific measures have been identified (EI18).
batch processes under containment (CS37) with	No specific measures have been identified (E110).
sampling (CS56)	
(closed systems) (107) Fuel usage	No specific measures have been identified (EI18).
(closed systems) (107). Batch process (CS55)	No specific measures have been identified (EI18).
Equipment cleaning and maintenance (CS39) non-	Drain down and flush system prior to equipment break-
dedicated facility (CS82) e.g. indoor repaired fuel	in or maintenance (E55).
pumps	,
Storage (CS67) General Exposures (Closed Systems)	No specific measures have been identified (EI18).
(CS15)	, , , , , , , , , , , , , , , , , , ,



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Conditions and measures to prevent/limit release from the site (1286) Conditions and measures related to municipal sewage treatment plant (1273) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external treatment of waste for disposal (1272) Conditions and measures relating to external treatment measures relating to external treatment or under containment or treatment must be recovery (1271) Conditions and measures relating to external waste recovery (1271) Conditions and measures relating to external waste recovery (1271) Conditions and measures relating to external waste recovery (1271) Conditions and measures relating to external waste recovery (1271) Conditions and measures relating to external waste recovery (1271) Conditions and measures relating to external waste recovery (1271)	(N 10 1 1 1 10 10 10 10 10 10 10 10 10 10
Substance is a unique structure(PrC1) Predominantly hydrophobic (PrC4a) Readily biodegradable (PrC5a)	(CS15) with sampling (CS56).	No specific measures have been identified (EI18).
Predominantly hydrophobic (PrC4a) Readily biodegradable (PrC5a)	Section 2.2	Environmental exposure control
Readily biodegradable (PrC5a) Operating Conditions	Product characteristics	Substance is a unique structure(PrC1)
Presenting Conditions		
Amounts used Fraction of EU tonnage used in region (A1) 1 Regional tonnage (tonnes/year) (A2) 790,000 Fraction of regional tonnage used locally (A3) 0.02 Average daily site tonnage (kg/day) 52,667 Annual site tonnage (kg/day) 15,800 Frequency and duration of use Release Type Continuous release (FD2) Emission days (days/year) (FD4) 350 Other operating conditions affecting environmental exposure dry or wet processes Release fraction to air from process 1.00E-04 Release fraction to wastewater from process 3.00e-05 Release fraction to soil from process (only regional) 1.00E-05 RMMs Technical conditions and measures at process level (source) to prevent release process release estimates used [TCS1]. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Air Conditions and measures to prevent/limit release from the site (1286) Organizational measures to prevent/limit release from the site (1286) Organizational measures related to municipal it is assumed that the output flow rate from the industrial wastewater treatment plant (1273) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external waste recovery (1271)		Readily biodegradable (PrC5a)
Fraction of EU tonnage used in region (A1) Regional tonnage (tonnes/year) (A2) Fraction of regional tonnage used locally (A3) Average daily site tonnage (kg/day) Average daily site tonnage (kg/day) Annual site tonnage (tons/year) Frequency and duration of use Release Type Emission days (days/year) (FD4) Other operating conditions affecting environmental exposure Release fraction to air from process Release fraction to wastewater from process Release fraction to soil from process (only regional) RMMS Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Air No air emissions control required; required removal efficiency of 0% (TCR5) Wastewater Treat wastewater on-site (prior to discharge) to ensure the required removal efficiency of 0% (TCR5) Soil No soil emission controls are required; the required removal efficiency is 0% Organizational measures to prevent/limit release from the site (1286) Conditions and measures related to municipal sewage treatment plant (1273) Conditions and measures related to external waste greeovery (1271) Not applicable	Operating Conditions	For external use (OOC1).
Regional tonnage (tonnes/year) (A2) Fraction of regional tonnage used locally (A3) O.02 Average daily site tonnage (kg/day) Annual site tonnage (tons/year) Frequency and duration of use Release Type Continuous release (FD2) Emission days (days/year) (FD4) Other operating conditions affecting environmental exposure Release fraction to air from process Release fraction to wastewater from process Release fraction to wastewater from process Release fraction to soil from process (only regional) Air Conditions and measures to prevent/limit release From the site (1286) Conditions and measures related to municipal sewage treatment plant (1273) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external waste precovery (1271)	Amounts used	
Average daily site tonnage (kg/day) 52,667 Annual site tonnage (kg/day) 15,800 Frequency and duration of use Release Type Continuous release (FD2) Emission days (days/year) (FD4) 350 Other operating conditions affecting environmental exposure dry or wet processes Release fraction to air from process 1.00E-04 Release fraction to soil from process 3.00e-05 Release fraction to soil from process (only regional) 1.00E-05 RMMs Technical conditions and measures at process level (source) to prevent release (FD2) Wastewater No air emissions control required; required removal efficiency > 78% Soil No soil emission controls are required removal efficiency > 78% Soil No soil emission controls are required; the required removal efficiency is 0% Conditions and measures related to municipal treatment of waste for disposal (1272) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external waste recovery (12711)		_
Average daily site tonnage (kg/day) Annual site tonnage (tons/year) Frequency and duration of use Release Type Continuous release (FD2) Emission days (days/year) (FD4) Other operating conditions affecting environmental exposure Release fraction to air from process Release fraction to wastewater from process Release fraction to soil from process (only regional) Arms Technical conditions and measures at process level (source) to prevent release Fredinical conditions and measures to reduce or limit discharges, air emissions control required; required removal efficiency of 0% (TCR5) Wastewater Treat wastewater on-site (prior to discharge) to ensure the required removal efficiency is 0% Organizational measures to prevent/limit release from the site (1286) Conditions and measures related to municipal sewage treatment plant (1273) Conditions and measures related to external treatment of waste for disposal (1272) Not applicable Not applicable		790,000
Annual site tonnage (tons/year) Frequency and duration of use Release Type Continuous release (FD2) Emission days (days/year) (FD4) 350 Other operating conditions affecting environmental exposure Release fraction to air from process Release fraction to wastewater from process Release fraction to soil from process (only regional) Rommon practices vary across sites thus conservative process release estimates used [TCS1]. Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Air No air emissions control required; required removal efficiency of 0% (TCR5) Wastewater Treat wastewater on-site (prior to discharge) to ensure the required removal efficiency >78% Soil No soil emission controls are required; the required removal efficiency is 0% Organizational measures to prevent/limit release from the site (1286) Conditions and measures related to municipal sewage treatment plant (1273) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external waste recovery (1271)	Fraction of regional tonnage used locally (A3)	0.02
Release Type Continuous release (FD2)		52,667
Continuous release (FD2)		15,800
Emission days (days/year) (FD4) Other operating conditions affecting environmental exposure Release fraction to air from process Release fraction to wastewater from process Release fraction to soil from process (only regional) RMMs Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Air No air emissions control required; required removal efficiency of 0% (TCR5) Wastewater Treat wastewater on-site (prior to discharge) to ensure the required removal efficiency is 0% Organizational measures to prevent/limit release from the site (1286) Conditions and measures related to municipal sewage treatment plant (1273) Conditions and measures related to external treatment of waste for disposal (1272) Not applicable	Frequency and duration of use	
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Release fraction to wastewater from process Release fraction to soil from process (only regional) RMMs Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Air No air emissions control required; required removal efficiency of 0% (TCR5) Wastewater Treat wastewater on-site (prior to discharge) to ensure the required removal efficiency is 0% No soil emission controls are required; the required removal efficiency is 0% Organizational measures to prevent/limit release from the site (1286) Conditions and measures related to municipal sewage treatment plant (1273) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external waste recovery (1271)		
Release fraction to soil from process (only regional) RMMs Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Air No air emissions control required; required removal efficiency of 0% (TCR5) Wastewater Treat wastewater on-site (prior to discharge) to ensure the required removal efficiency is 0% No soil emission controls are required; the required removal efficiency is 0% Organizational measures to prevent/limit release from the site (1286) Conditions and measures related to municipal sewage treatment plant (1273) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external waste recovery (1271)		
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Conditions and measures to prevent/limit release from the site (1286) Conditions and measures related to municipal sewage treatment plant (1273) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external treatment of waste for disposal (1272) Conditions and measures relating to external treatment measures relating to external treatment or under containment or treatment must be recovery (1271) Conditions and measures relating to external waste recovery (1271) Conditions and measures relating to external waste recovery (1271) Conditions and measures relating to external waste recovery (1271) Conditions and measures relating to external waste recovery (1271) Conditions and measures relating to external waste recovery (1271) Conditions and measures relating to external waste recovery (1271)		
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Organizational measures to prevent/limit release from the site (1286) Conditions and measures related to municipal sewage treatment plant (1273) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external vaste recovery (1271) Avoid discharge of undissolved or recovered substances from wastewater. Sludge generated by industrial water treatment must be incinerated, kept under containment or treated (MDG3). It is assumed that the output flow rate from the industrial wastewater treatment plant is 2000 m3/day. Not applicable		
Organizational measures to prevent/limit release from the site (1286) Conditions and measures related to municipal sewage treatment plant (1273) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external vaste recovery (1271) Avoid discharge of undissolved or recovered substances from wastewater. Sludge generated by industrial water treatment must be incinerated, kept under containment or treated (MDG3). It is assumed that the output flow rate from the industrial wastewater treatment plant is 2000 m3/day. Not applicable	Soil	
from the site (1286) from wastewater. Sludge generated by industrial water treatment must be incinerated, kept under containment or treated (MDG3). Conditions and measures related to municipal sewage treatment plant (1273) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external waste recovery (1271) from wastewater. Sludge generated by industrial water treatment on treated (MDG3). It is assumed that the output flow rate from the industrial wastewater treatment plant is 2000 m3/day. Not applicable		
Sludge generated by industrial water treatment must be incinerated, kept under containment or treated (MDG3). Conditions and measures related to municipal sewage treatment plant (1273) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external waste recovery (1271) Sludge generated by industrial water treatment on under treatment or treated (MDG3). It is assumed that the output flow rate from the industrial wastewater treatment plant is 2000 m3/day. Not applicable		<u> </u>
incinerated, kept under containment or treated (MDG3). Conditions and measures related to municipal sewage treatment plant (1273) Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external waste recovery (1271) incinerated, kept under containment or treated (MDG3). It is assumed that the output flow rate from the industrial wastewater treatment plant is 2000 m3/day. Not applicable	from the site (1286)	
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conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external waste recovery (1271) wastewater treatment plant is 2000 m3/day. Not applicable	Our distance and account of the day of the second of the s	
Conditions and measures related to external treatment of waste for disposal (1272) Conditions and measures relating to external waste recovery (1271) Not applicable	•	•
treatment of waste for disposal (1272) Conditions and measures relating to external waste recovery (1271) Not applicable		
Conditions and measures relating to external waste recovery (1271) Not applicable		Not applicable
recovery (1271)		Not applicable
	recovery (1271)	Not applicable
Other environmental control measures in addition to None	Other environmental control measures in addition to	None
the above (1287)	the above (1287)	

Complies with Regulation (EU) No. 2020/878 as amended.

4. Use in fuels - Professional

Section 1 Title of the exposure scenario				
Title	Use in fuels; CAS number 91995-60-7			
Use descriptors	Sector of use: Industrial (SU22)			
	Process categories: PROC1, PROC2, PROC3, PROC8a,			
	PROC8b, PROC9, PROC16.			
	Environmental Release Categories: ERC8b			
	Environmental Release Specific Categories: SpERC			
	ESV0C30			
Processes, tasks, activities covered	Covers use as fuel additive, including activities associated			
	with transfer, use, equipment maintenance and disposal			
0.11.0	of waste.			
Section 2	Operational conditions and risk management measures			
Section 2.1	Worker Exposure Control			
Product Characteristics				
Physical state of product	Liquid, vapor pressure > 10 kPa under standard conditions (OC5)			
Concentration of substance in product	Covers up to 15% of the substance in the product. (Gnew)			
Quantity used	Not applicable			
Frequency and duration of use/exposure	Covers daily exposure of up to 8 hours (unless otherwise			
	specified) (G2)			
Human factors not influenced by risk management	Not applicable			
Other operational conditions affecting exposure	Assumes the application of an adequate basic standard			
	of hygiene in the workplace (G1).			
Scenario characteristics	Specific measures for risk management			
Bulk product transfer (CS14) Batch process (CS55)	Ensure material transfers are under containment or			
with sampling (CS56) Filling/preparation of	extract ventilation (E82).			
equipment from drums or containers (CS45).				
Drum/batch transfers (CS8) Filling/preparation of	Ensure material transfers are under containment or			
equipment from drums or containers (CS45). Bulk	extract ventilation (E82).			
product transfer (CS14). dedicated facility (CS81).	France on adaptists standard of southelled ventilation			
Refueling (CS507)	Ensure an adequate standard of controlled ventilation (10 to 15 air changes per hour) (E40)			
General exposures (closed systems) (CS15). with	No specific measures have been identified (El18).			
sampling (CS56)	no specific illeasures have been lucifilled (EITO).			
General exposures (closed systems) (CS15) Use in	No specific measures have been identified (EI18).			
batch processes under containment (CS37) with	The opening induction have been identified (EILO).			
sampling (CS56)				
Filling drums and small containers (CS6).	Use drum pumps (E53). Ensure that the operation is			
Dedicated facility (CS81)	carried out outdoors (E69).			
, , , , , ,	Use vapour recovery systems if necessary (A7).			
(closed systems) (107) Fuel usage	No specific measures have been identified (El18).			
(closed systems) (107). Discontinuous process	No specific measures have been identified (EI18).			
(CS55)				



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Equipment cleaning and maintenance (CS39) non-	Drain down system prior to equipment break-in or
dedicated facility (CS82) e.g. indoor repaired fuel	maintenance (E65) or (G9).
pumps	Wear a respirator conforming to EN140 with Type A filter
	or better (PPE22). Minimise exposure by partial enclosure
	of the operation or equipment and provide extract
	ventilation at openings (E60).
Cleaning and maintenance of equipment (CS39)	voluntion at oponings (200).
non-dedicated facility (CS82) e.g. fuel pumps	
repaired outside	
Storage (CS67) General Exposures (Closed Systems)	No specific measures have been identified (El18).
(CS15)	
Section 2.2	Environmental exposure control
Product characteristics	Substance is a unique structure(PrC1)
	Predominantly hydrophobic (PrC4a)
	Readily biodegradable (PrC5a)
Operational Conditions	For external use (00C1).
Amounts used	
Average daily consumption for a dispersive use type	4.33
(kg/day)	
Frequency and duration of use	
Release Type	Continuous release (FD2)
Emission Days (days/year) (FD4)	365
Other operating conditions affecting environmental	Use in open systems
exposure	
Release fraction to air from highly dispersive use	1.00E-02
(regional only) (00C7)	
Release fraction to wastewater from highly	1.00E-05
dispersive use (00C8)	
Release fraction to water surface from highly	1.00E-04
dispersive use (regional only)	
Release fraction to soil from highly dispersive use	1.00E-05
(regional only) (OOC9)	
RMMs	On the state of th
Technical conditions and measures at process level	Common practices vary across sites thus conservative
(source) to prevent release	process release estimates used [TCS1].
Technical onsite conditions and measures to reduce of Air	No air emission control required; required removal
All	efficiency is 0% (TCR5).
Wastewater	Treat wastewater on-site (prior to discharge) to ensure the
Wastewater	required removal efficiency >37% (TCR8).
Soil	No soil emissions control required. The required removal
Joli	efficiency is 0%.
Organizational measures to prevent/limit release	Prevent the release of undissolved substances or their
from the site (1286)	recovery from wastewater (OMS1).
Hom the Site (1200)	10001015 Holli Hastomatol (Olliox).



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Conditions and measures related to municipal sewage treatment plant (1273)	It is assumed that the output flow rate from the industrial wastewater treatment plant is 2000 m3/day.		
Conditions and measures related to external treatment of waste for disposal (1272)	Not applicable		
Conditions and measures relating to external waste recovery (1271)	Not applicable		
Other environmental control measures in addition to the above (1287)	None		

Complies with Regulation (EU) No. 2020/878 as amended.

5. Use in fuels - Consumers

Use In TAME fuels: CAS number 91995-80-7	Section 1		Title of the exposure scenario		
Sector of use: Industrial (SU21) Process Categories: PC13 Environmental Release Categories: ERC8d Specific Environmental Release Categories: ESVOCI (SpERC) Specific Environmental Release Categories: ESVOCI (SpERC) Use of fuel for refuelling in 2-stroke and 4-stroke engines. Section 2.1 Worker Exposure Control Worker Exposure Control					
Process Categories: PC13 Environmental Release Categories: ERC8d Specific Environmental Release Categories: ESVOC3 SpERC	Usage descriptors				
Environmental Release Categories: ERC6d Specific Environmental Release Categories: ESVOCS SpERC Specific Environmental Release Categories: ESVOCS SpERC Use of fuel for refuelling in 2-stroke and 4-stroke engines.			` '		
Specific Environmental Release Categories: ESVOCS SpERC					
Processes, tasks, activities covered Processes, tasks, activities covered Use of fuel for refueling in 2-stroke and 4-stroke engines. Section 2 Operating conditions and risk management measures Worker Exposure Control Product Characteristics Physical state of product Concentration of the substance in product Quantity used Prequency and duration of use/exposure Human factors not influenced by risk management Other operational conditions affecting exposure Human factors not influenced by risk management Technical conditions and measures at process level (source) to prevent release Product categories PC13: Fuel OC Unless otherwise specified, use is assumed to occur at ambient temperature (ConsOC15). RMM No specific RMM value developed beyond the report Ocs. Section 2.2 Product characteristics RMM No specific RMM value developed beyond the report Ocs. Section 2.2 Product characteristics Substance is a unique structure(PC1) Predominantly hydrophobic (PrC4a) Readily biodegradable (PrC5a) Operating Conditions Amounts used Average daily consumption for a dispersive use type (kg/day) Frequency and duration of use Release Type Emission Days (days/year) (FD4) Other operating conditions affecting environmental exposure (regional only) (OCC7) Release fraction to water surface from highly dispersive use (regional only) (OCC7) Release fraction to water surface from highly dispersive use (regional only) (OCC9) RMMs Technical conditions and measures at process level (Common practices vary across sites thus conservative process release estimates used (TCS1).			Specific Environmental Release Categories: ESVOC30		
Section 2					
Section 2.1 Worker Exposure Control	Processes, tasks, activities covered		Use of fuel for refueling in 2-stroke and 4-stroke		
Section 2.1 Worker Exposure Control			engines.		
Product Characteristics Physical state of product Concentration of the substance in product Concentration of the substance Prequency and duration of use/exposure Human factors not influenced by risk management Other operational conditions affecting exposure Technical conditions and measures at process level (source) to prevent release Product categories PC13: Fuel OC Unless otherwise specified, use is assumed to occur at ambient temperature (ConsOC15). Unless otherwise specified, includes concentrations up to 15% (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use, it includes exposures up to 15 minutes per event (ConsOC3); includes frequencies of use up to once per day (ConsOC4); for each use, it includes exposures up to 15 minutes per event (ConsOC14). Readily biodegradable (PrC5a) Product characteristics Section 2.2 Environmental exposure control Predominantly hydrophobic (PrC4a) Readily biodegradable (PrC5a) Indoor/outdoor use (OOC3) Amounts used Average daily consumption for a dispersive use type (kg/day) Frequency and duration of use Release Type Distracting use. (FD3) Emission Days (days/year) (FD4) Other operating conditions affecting environmental exposure Release fraction to air from highly dispersive use (regional only) (OOC7) Release fraction to wastewater from highly dispersive use (regional only) (OOC7) Release fraction to wastewater from highly dispersive use (regional only) (OOC9) RMMs Technical conditions and measures at process level (cource) to prevent release Common practices vary across sites thus conservative process release estimates used [TC51].	Section 2		Operating conditions and risk management measures		
Physical state of product Concentration of the substance in product Liquid, vapor pressure > 10 kPa under standa conditions (OC5)			Worker Exposure Control		
Concentration of the substance in product conditions (OC5) Quantity used Frequency and duration of use/exposure Human factors not influenced by risk management Other operational conditions affecting exposure Human factors not influenced by risk management Other operational conditions affecting exposure Human factors not influenced by risk management Other operational conditions affecting exposure Human factors not influenced by risk management Other operational conditions affecting exposure BC13: Fuel OC Unless otherwise specified, includes concentrations up to 15% (ConsOC1); includes use up to 150 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC3); includes use up to 150 days/year (ConsOC3); includes use up to 150 days/year (ConsOC3); includes use up to 150 days/year (ConsOC3); includes frequencies of use up to once per day (ConsOC3); includes trequencies of use up to once per day (ConsOC3); includes use up to 150 days/year (ConsOC3); includes use up to 150 days/year (ConsOC3); includes use up to 150 days/year (ConsOC3); includes trequencies of use up to once per day (ConsOC4); for each use, it includes exposures up to 15 minutes per event (ConsOC14). Readily biodegradable (PrC5a) Operating Conditions Amounts used Average daily consumption for a dispersive use type (kg/day) Frequency and duration of use Release fraction to air from highly dispersive use (regional only) (OOC7) Release fraction to wastewater from highly dispersive use (regional only) (OOC7) Release fraction to wastewater from highly dispersive use (regional only) (OOC9) RMMs Technical conditions and measures at process level (common practices vary across sites thus conservative process release estimates used [TC51].					
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Diesel fuel, containing < 15% of the substance	Concentration of the substance in product		Liquid, vapor pressure > 10 kPa under standard		
Prequency and duration of use/exposure Up to 60 litres for refuelling			, ,		
Human factors not influenced by risk management Other operational conditions affecting exposure					
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ANNEX TO THE SDS - GASOLINE

Air	No air emission control required; required removal efficiency is 0% (TCR5).
Wastewater	Treat wastewater on-site (prior to discharge) to ensure the required removal efficiency >37% (TCR8).
Soil	Treat emissions in such a way as to ensure a typical removal efficiency of 0 (%) (TCR7).
Organizational measures to prevent/limit release from the site (1286)	Prevent the release of undissolved substances or their recovery from wastewater (OMS1).
Conditions and measures related to municipal sewage treatment plant (1273)	It is assumed that the output flow rate from the industrial wastewater treatment plant is 2000 m3/day.
Conditions and measures related to external treatment of waste for disposal (1272)	Not applicable
Conditions and measures relating to external waste recovery (1271)	Not applicable
Other environmental control measures in addition to the above (1287)	None

Complies with Regulation (EU) No. 2020/878 as amended.

ETHANOL

1. Industrial distribution of Ethanol

Section 1 Exposure Scenario for Ind	ustrial Distrib	ution of Ethanol				
•			as an intermediate or as a process			
Reference REACh Association for Et	hanol n° ES2					
Systematic title based on usage des	criptors	SU3, SU8, SU9, PRO0	Sa, PROC8b, PROC9, ERC2			
Processes, assignments, activities h		Covers transfer	of substance or preparation			
		(loading/unloading)	from/to ships/large containers to			
		dedicated and non-	dedicated facilities; loading (including			
		boats/barges, tank	trucks/railcars, and IBC containers);			
			aging (including batteries and small			
			nce, including its distribution.			
Assessment methodology		Integrated model Eco	etoc TRA version 2.			
Exposure scenarios						
Operating conditions and risk mana						
			ns, bagging in non-dedicated facilities.			
Exposure to vapors, aerosols or spill			•			
			e of drums, and distribution activities of			
			nies. This also includes the use of drums,			
			and DIY products, pigment pastes, fuels,			
household products (cleaning agent						
Number of sites using the substance Assessment method	e: widely used	Substance	_			
Worker Exposure Control						
Product Characteristics (includes	Physical sta	te of product	Liquid			
packaging design influencing			<u>'</u>			
the exhibition)	Concentration	on of substance in	Up to 100%			
the exhibition)	product					
	Substance v	apor pressure	5.73 kPa			
Quantity used	n.a. in level	1 of the TRA model				
Frequency and duration of	Exposure fre	quency (weekly)	> 4 days/week			
use/exposure		f exposure (annual)	240 days/year			
, .	Duration of		> 4 hours/day			
Human factors not affected by		otentially exposed	Two hands			
risk management	Skin surface	<u> </u>	960 cm2			
Other operating conditions		•	equate basic standard of hygiene in the			
affecting exposure	workplace (Aquato Suero etamasi a er nygrene in tire			
		(indoor/outdoor)	External			
Technical conditions and		echnical prevention m				
measures at process level (source)	opcomo	p. 0 . 0				
to prevent release						
Technical measures and	Outside		No specific measures identified			
conditions to control emissions at	Juiside		110 apoonio modadies identined			
the source and prevent worker	If indoors		Ensure that material transfer takes			
exposure.	II IIIuuus		place under low or extracted			
onposition.			ventilation conditions. Provide good			
			ventilation at the points where			
			emissions occur. Provide a good			
			standard for general or controlled			
			ventilation (5 to 15 air changes per			
	hour).					
Technical onsite conditions and	No specific i	neasures identified.	1 - 20-72			
measures to reduce or limit						
discharges, air emissions and						
releases to soil						



ANNEX TO THE SDS - GASOLINE

Conditions and measures re	alotod	Eva Bratastian A	nnranriata ava med	tootion ch	auld be used when bendling	
to personal protection, hy					ould be used when handling ar gloves tested to EN374	
and health assessment	giene	standard during ac				
Environmental exposure cont	rol	Standard during at	LIVILIES WHEH SKIII	contact is	possible.	
Product categories	.101	Physical state of p	vroduct	Liquid		
Froduct categories		Concentration of s		Up to 100%		
		product	ubstance in	op to 10	0 70	
Amount used		Daily at point sour		n.a.		
Amount asca		Annual at Point Source		75,000 tons/year (worst-case		
		Annual at 1 onit 30	uicc	scenario at point source)		
		Annual total			00 tons/year Total market	
Frequency and duration of		Release Model			ous: 300 days/year	
use/exposure		Noted Se Wodel		Continue	us. 500 uays/ year	
Environmental factors not		Surface water rece	eiving flow rate	18,000 r	m3/day (default)	
affected by risk managemen	t					
Other operability conditions		Processing setting	S	Outside	Outside	
affecting environmental expo	sure	(Indoor/Outdoor)				
		Process Temperate	ure	Environment		
		Process pressure		Environment		
Process-level (source) measu	res	Keep containers tightly closed. Store in a confined area. Do not discharge				
and technical conditions to		into drains or sewers. Generated waste and empty containers show				
prevent releases		-	ardous waste in acc	cordance w	ith all regional and national	
		regulations.				
Organizational measures to		Do not release was	•		of wastewater into the	
prevent/limit release from th	e site	into the environme	ent.	local or municipal wastewater		
				treatment plant.		
Conditions and measures rela	ating	Size of the local se	wage treatment	> 2000 m3/day		
to the municipal wastewater		plant				
treatment plant		Efficiency reductio	<u>n</u>	> 90% (for ethanol)		
0	- 414 4 -	Sludge treatment				
Conditions and measures rela	onditions and measures relating to waste treat		Incineration or disposal of hazardous waste for use in recycled fuels.			
Exposure estimation						
The worker exposure estimate is calculated using the Ecetoc TRA v2 model. The exposure estimates reported						
below are based on the PROC				ario being	PROC8a.	
	Exposu	ure estimation DNEL			Comments	
Inhalation (mg/m3)	96.04	950 (OEL)			The results of PROC8a	
Claim (mark /l/ of / alans)	13.71		343 are the highest in t		are the highest in this	
(0, 0, 1,	27.43		343		exposure scenario.	



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Complies with Regulation (EU) No. 2020/878 as amended.

The environmental exposure estimate is calculated using the Ecetoc TRA v2 model, including data from the TGD tables A & B (MC-lb, IC-2, UC-48, main source fraction 0.1), and is based on the worst-case scenario with a production volume at the point source of 15,000 tpa.

Ethanol is fully soluble in water, rapidly biodegradable, non-bioaccumulative, does not accumulate in sediments or soils, and is assumed to be 90% degraded in the local or municipal wastewater treatment plant under the evaluated conditions.

Craidated conditions.			
Release time per year (days/year)	300	Local release in air (kg/day)	50
Fraction used at the main local source	0.1	Local release into wastewater (kg/day)	15
Amount used locally (Kg/day)	5000	Local release into soil (kg/day)	1
Environmental Exposure	PEC	NECP	Comments
In the wastewater treatment plant/untreated wastewater (mg/l)	4.66	580	-
In fresh water (mg/l)	0,52	0,96	-
In local soils	0.007 (mg/kg)	0.63 (mg/kg treated wastewater)	-
In local marine waters (mg/l)	0,0515	0,79	-
Total quantity released daily into the local environment		Negligible when compared to dietary intake and endogenous formation	

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Worker exposure and environmental emissions have been calculated using the integrated use of the Ecetoc TRA version 2 and EUSES v2.0 tools, respectively. If local environmental emission conditions deviate significantly from the default values used, please use the algorithm below to estimate the corrected local emission and Risk Characterization Ratios (RCRs):

Corrected PEC = Calculated PEC × Local emission factor × Fraction of local treated wastewater flow × Fraction of local river flow × Local wastewater treatment plant efficiency factor.

Additional Recommendations Beyond Chemical Safety	Use specific measures to reduce the expected
Assessment	exposure beyond the level estimated based on the
Note: The measures described in this section have not	exposure scenario whenever possible.
been considered in the exposure estimate related to	
the scenario above. They are not subject to the	
obligations of Article 37(4) of REACH.	

Complies with Regulation (EU) No. 2020/878 as amended.

2. Industrial formulation and re-packaging of Ethanol and its mixtures

Section 1 Exposure Scenario for Industrial Form	ulation and Repackaging of Ethanol and Ethanol Blends					
Title Exposure scenario for the industrial formula	ation and re-packaging of Ethanol and its blends					
Reference REACh Association for Ethanol n° ES	3					
Systematic title based on usage descriptors	SU3, SU10, PROC3, PROC5, PROC8a, PROC8b, PROC9,					
	PROC14, ERC2					
Processes, assignments, activities held It covers the industrial formulation, packaging, and repackaging of the substance and its mixtures in batch of continuous operations, including storage, material transfer mixing, small- and large-scale packaging, and maintenance. also includes the formulation of ethanol-containing fuels.						
Assessment methodology Integrated model Ecetoc TRA version 2.						
Exposure scenarios						

Operating conditions and risk management measures

Process Categories: production or formulation of chemical products or articles using technologies related to the mixing of solid and liquid materials, where the process is divided into stages and provides the opportunity for significant contact at each stage. Filling lines specifically designed to capture both vapor and aerosol emissions and minimize spills. Sampling, loading, filling, transfer, unloading, and bagging in dedicated and non-dedicated facilities with potential exposure to dust, vapor, aerosol, or spills, as well as equipment cleaning.

Environmental Release Categories: production of organic and inorganic substances in the chemical, petrochemical, primary metals, and minerals industries, including intermediates and monomers, using batch or continuous processes applying dedicated or multifunctional equipment, both technically controlled or managed through manual interventions.

Number of sites using the substance	e: Widely used substance				
Assessment method					
Worker Exposure Control					
Product Characteristics (includes	Physical state of product	Liquid			
packaging design influencing the exhibition)	Concentration of substance in product	Up to 100%			
	Substance vapor pressure	5.73 kPa			
Amount used	n.a. in level 1 of the TRA model				
Frequency and duration of	Exposure frequency (weekly)	> 4 days/week			
use/exposure	Frequency of exposure (annual)	240 days/year			
	Duration of exposure	> 4 hours/day			
Human factors not affected by risk management	Potentially exposed body parts	Two hands only the palm (automated processes/PROC3) Two coats (transfer, filling, etc./PROC8a,b)			
	Exposed skin surface	480 cm2 (automated processes/PROC3) 960 cm2 (transfer, filling, etc./PROC8a,b)			
Other operating conditions affecting exposure	Assumes the application of an adeque workplace (G1).	uate basic standard of hygiene in the			
	Installation (indoor/outdoor)	External			
Technical conditions and measures at process level (source) to prevent release	No specific technical prevention measures are required.				
Technical measures and conditions to control emissions at the source and prevent worker exposure.	conditions. Provide good ventilation at the points where emissions occur.				
Technical onsite conditions and measures to reduce or limit	No specific measures identified.				



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discharges, air emissions ar	nd					
releases to soil						
Conditions and measures to personal protection, hand health assessment		Eye Protection – Appropriate eye protection should be used when handling the product if there is a risk of splashing. Wear gloves tested to EN374 standard during activities when skin contact is possible.				
Environmental exposure cor	ntrol	_				
Product Characteristics		Physical state of th	e product	Liquid		
		Concentration of the product	ne substance in	Up to 10	0%	
Amount used		Daily at the point s	ource	n.a.		
		Annual at Point So		280,000 tons/year (worst-case scenario at point source)		
		Annual total		3,800,000 tons/year Total market		
Frequency and duration of use/exposure		Release Model		Continuo	Continuous: 300 days/year	
Environmental factors not affected by risk management	nt	Surface water rece	ption range	18,000	m3/day (default)	
Other operability conditions		Feature Settings(In	door/Outdoor)	Inside		
affecting environmental exp	osure	Process Temperati		Environn	nent	
		Process pressure		Environn	nent	
Technical conditions and					ined area. Do not discharge	
measures at process level (s	source)				empty containers should be	
to prevent release					vith all regional and national	
					e mainly closed processes.	
Technical conditions on si		Implement technic		90% > e	ffectiveness	
measures to reduce or		aimed at reducing	_			
discharges, air emissions releases into the soil	s and	wastewater (waste treatment/local pu				
releases into the son		(e.g. biological trea				
Organizational measures to		Do not release was		Release	of wastewater into the	
prevent/limit release from t	he site	into the environment.		local or municipal wastewater treatment plant.		
Conditions and measures re	lating	Size of the local se	wage treatment	> 2000		
to the municipal wastewate		plant	go u outurioni	2000 mo/ day		
treatment plant		Decreased effectiv	eness 90% (fo		ethanol)	
•		Sludge treatment		Disposal or recovery		
Conditions and measures re	lating to	waste treatment Incineration or dis		sposal of I	nazardous waste for use in	
			recycled fuels.			
Exposure estimation						
The worker exposure estimated below are based on the PRC		_				
Worker exposure	•	re estimation	DNEL		Comments	
Inhalation (mg/m3)	96.04		950		The results of PROC8a	
Skin (mg/Kg/day)	13.71	343			are the highest in this	
Combined (mg/kg/day)	27.43		343		exposure scenario.	
The Environmental exposure estimate is calculated using the Ecetoc TRA v2 model, including data from the TGD tables A & B (MC-lb, IC-2, UC-48, main source fraction 0.1), and is based on the worst-case scenario with a						
production volume at the point source of 15,000 tpa. Ethanol is fully soluble in water, rapidly biodegradable, non-bioaccumulative, does not accumulate in sediments						
or soils, and is assumed to b	e 90% (iegraded in the loca	i or municipai wasi	tewater tro	eatment plant under the	
evaluated conditions. Release time by year	300		Local release in a	nir	469	
(days/year)	300	(kg/day)			1 0 <i>9</i>	
Fraction used at the main	0.1		Local release into)	28	
local source	·· -	wastewater (kg/c			-5	
Quantity used locally	93.333					
(Kg/day)		(kg/day)				
Environmental Exposure	PEC	NECP Comments				



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Complies with Regulation (EU) No. 2020/878 as amended.

In the wastewater treatment plant/untreated wastewater (mg/l)	1.73	580	-		
In fresh water (mg/l)	0,185	0,96	-		
In local soils	0.0117 (mg/kg)	0.63 (mg/kg treated wastewater)	-		
In local marine waters (mg/l)	0,0186	0,79	-		
Total quantity released daily into the local environment		Negligible when compare endogenous formation	Negligible when compared to dietary intake and endogenous formation		

Guide for downstream users

Worker exposure and environmental emissions have been calculated using the integrated use of the Ecetoc TRA version 2 and EUSES v2.0 tools, respectively. If local environmental emission conditions deviate significantly from the default values used, please use the algorithm below to estimate the corrected local emission and Risk Characterization Ratios (RCRs):

Corrected PEC = Calculated PEC × Local emission factor × Fraction of local treated wastewater flow × Fraction of local river flow × Local wastewater treatment plant efficiency factor.

Additional Recommendations Beyond Chemical Safety	Use specific measures to reduce the expected		
Assessment	exposure beyond the level estimated based on the		
Note: The measures described in this section have not	exposure scenario whenever possible.		
been considered in the exposure estimate related to			
the scenario above. They are not subject to the			
obligations of Article 37(4) of REACH.			

3. Use of Ethanol as a Automotive Fuel by Consumers

Section 1 Exposure	Scenario for the	Use of I	Ethanol as a Autor	notive Fuel by Consumers		
Title Exposure scenario for the use	of ethanol as a	fuel for a	automotive by con	sumers		
Reference REACh Association for E	thanol n° ES9a		-			
Systematic title based on usage de	scriptors	SU21, P	PC13, ERC9a, ERC9b			
Processes, assignments, activities covered		Covers t	he use of ethanol-	containing fuel by consumers.		
Assessment Methodology		Integrated model Ecetoc TRA version 2, ConsExpo v 4.1				
Exposure scenarios	<u>.</u>					
Operational Conditions and Risk Ma	anagement Mea	asures				
			nicles). Lower expo	sure to ethanol vapors is possible during		
				to ethanol during actual fuel use (engine		
operation) is not expected under no	rmally foreseea	ble cond	litions of use, as th	e substance is combusted within (closed)		
engine systems.						
Environmental Release Categories releases through accidental spills a				ublic. The use generally results in minor		
Number of sites using the substance	e: Widely used	substan	 ce			
Assessment Method	•					
Worker Exposure Control						
Content of the substance within	Concentration	n of the	substance in the	It can be more than 25%.		
the product	product					
Amount used	Up to 100 litres					
Exposure/Release Fraction	0.001 (steam only and minor losses when filling the tank)					
Frequency and duration of	Exposure free			weekly		
use/exposure	Duration of ex		per event	< 5 minutes (only when filling the		
, .			•	tank)		
External settings and conditions du	ring use		Outside			
Technical conditions of use (related)	No specific measures are required			
`	Organisational consumer protection measures (e.g.		No specific measures are required			
recommendations and/or instru	actions for us	se for				
consumers, e.g. labelling						
Environmental exposure control						
Product features	Physical state	e of the p	product	Liquid		
	Concentration	n of the	substance in the	Can be > 25%		
	product					
Quantity used	Daily at the p	Daily at the point source		n.a.		
	Annual at Poi	Annual at Point Source		n.a. (highly dispersive use)		
	Annual total	Annual total		3,800,000 tons/year total market for		
				industrial, professional and consumer		
				use.		
Frequency and duration of	Release Mod	Release Model		Continuous: 365 days/year		
use/exposure						
Environmental factors not affected by risk management	Surface water reception range		on range	18,000 m3/day		
Other operability conditions	Feature Settings(Indoor/Outdoor)		or/Outdoor)	Outside		
affecting environmental exposure	Process Temperature		, ,	Environment		
and any and any and any any and any	Process pressure			Environment		
Conditions and measures relating			ewater is expect			
to the municipal sewage	No release to wastewater is expected from this use. The only forms of environmental release from the use of ethanol as a fuel by consumers are related					
treatment plant	to evaporation during filling operations (< 0.01%, assuming that less than 10					
a data none plane	grams of ethanol evaporate during the filling of a 75-liter tank over 2-3 minutes).					
Conditions and measures relating	No waste is expected from this use.					
to the landfill of waste resulting	1.0		5111 4115 4001			
from the use of the product						
and add or and product						



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Conditions and measures r	elating	n.a.				
to the recovery of waste from the						
use of the product						
Exposure estimation						
The worker exposure esting	mate is o	only indicative for	a specific Product Category (I	PC). Exposure e	estimates were	
calculated using the indust	rial mode	l (draft version Mast	terCSA_8 April 2010) CSA for PC	C13 (Automobile	e, refueling with	
100% concentration fuel).						
Worker exposure	Exposure estimation		DNEL	Comments		
Skin (mg/Kg/day)	35,00		LTS 206			
Oral (mg/kg/day)	0,00		LTS 87			
Inhalation (mg/m3 for 24	1,54		LTS 144			
hours a day)						
All, systemic way						
The Environmental Exposur	e Estima	tion is based on the	Ecetoc TRA v2 model based or	n custom setting	gs and a total	
use of 3,800,000 tpa.						
Release time by year	365		Local release in air (kg/day)	n.a. widely dispersive		
(days/year)						
Fraction used at the main	0.002		Local release into	n.a. widely dispersive		
local source			wastewater (kg/day)			
Quantity used locally	n.a.		Local release into soil	n.a. widely dispersive		
(Kg/day)			(kg/day)			
Environmental Exposure	PEC		NECP	Comments		
In the wastewater	0,065		580	-		
treatment plant (mg/litre)						
In fresh water (mg/litre)	0,0240		0,96	-		
In local soil (mg/kg)	0,0273		0.63 (mg/kg treated	-		
			wastewater)			
In local marine waters	0,0034		0,79	-		
Total quantity fed daily through the local environment		Negligible when compared to dietary intake and				
		endogenous formation				
Additional Recommendations Beyond Chemical Safety		Use specific measures to reduce the expected exposure				
Assessment		beyond the level estimated based on the exposure scenario				
Note The measures described in this section have not			whenever possible.			
been considered in the ex						
the scenario above. The	€					
obligations of Article 37(4) of REACH.						