BIOFUEL EXPRESS

Safety Data Sheet

Diesel MK3

Issue date: 10/01/2023

SAFETY DATA SHEET

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

1.1. Product identifier

Trade name or designation of the mixture Fuels, diesel

Registration number -

UFI: Q200-U0CW-500U-QSP1

Synonyms None.

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

Identified uses Distribution of a substance.
Formulation & (re) packaging of substances and mixtures.
Use as a fuel.

Uses advised against Use in accordance with supplier's recommendations.

1.3. Details of the supplier of the safety data sheet

Supplier

Company name Biofuel Express AB

Address Mariebergsgatan 6
SE-261 51 Landskrona
Sverige

Telephone +46 (0) 418-495 120

E-post mail@biofuel-express.com

Supplier

Company name Biofuel Express A/S

Address Alsvej 21
8940 Randers
Danmark

Telephone +45 70 26 41 22

1.4. Emergency telephone number

General in EU 112 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

National Poisons Control Centre 070 245 245 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Physical hazards		
Flammable liquids	Category 3	H226 - Flammable liquid and vapour.
Health hazards		
Acute toxicity, inhalation	Category 4	H332 - Harmful if inhaled.
Skin corrosion/irritation	Category 2	H315 - Causes skin irritation.
Carcinogenicity	Category 2	H351 - Suspected of causing cancer.

Specific target organ toxicity - repeated exposure	Category 2	H373 - May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	Category 1	H304 - May be fatal if swallowed and enters airways.
Environmental hazards		
Hazardous to the aquatic environment, long-term aquatic hazard	Category 2	H411 - Toxic to aquatic life with long lasting effects.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Fuels, diesel

Hazard pictograms

Signal word Danger

Hazard statements

H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H332	Harmful if inhaled.
H351	Suspected of causing cancer.
H411	Toxic to aquatic life with long lasting effects.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243	Take action to prevent static discharges.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTRE/doctor.
P331	Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Storage

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

Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental information on the label None.

2.3. Other hazards

Static accumulating flammable liquid.
Hydrogen sulphide (H2S) can accumulate in the headspace of storage tanks and reach potentially hazardous concentrations.
This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.
The mixture does not contain any substances included in the list established in accordance with REACH Article 59(1) for having endocrine disrupting properties at a concentration equal to or greater than 0.1% by weight.
The mixture does not contain any substances having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0.1% by weight.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Fuels, diesel	> 90	68334-30-5 269-822-7	01-2119484664-27-XXXX	649-224-00-6	
Classification: Flam. Liq. 3;H226, Acute Tox. 4;H332;(ATE: 11 mg/l), Skin Irrit. 2;H315, Carc. 2;H351, STOT RE 2;H373, Asp. Tox. 1;H304, Aquatic Chronic 2;H411					
Fatty acid methyl ester (FAME)	< 10	N/A -	-	-	
Classification: -					
Additive		N/A -	-	-	
Classification: -					
Dyes		N/A -	-	-	
Classification: -					

List of abbreviations and symbols that may be used above

ATE: Acute toxicity estimate.

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Hydrogen sulphide (H2S) can accumulate in the headspace of storage tanks and reach potentially hazardous concentrations. The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

General information Get medical attention if any discomfort develops.

4.1. Description of first aid measures

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Get medical attention if discomfort develops or persists.

If there is any suspicion of inhalation of H2S:
Rescuers must wear breathing apparatus, belt and safety rope, and follow rescue procedures.
Remove casualty to fresh air as quickly as possible.
Immediately begin artificial respiration if breathing has ceased.
Provision of oxygen may help.
Obtain medical advice for further treatment.

Skin contact Remove contaminated clothing. Wash with soap and water. In case of rashes, wounds or other skin disorders: Seek medical attention and bring along these instructions.

Eye contact Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids wide apart. Get medical attention if irritation develops or persists.

Ingestion Immediately rinse mouth and drink plenty of water or milk. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Transport immediately to hospital and take these instructions.

4.2. Most important symptoms and effects, both acute and delayed Irritation of eyes and mucous membranes. Skin irritation. Defatting of the skin. Dermatitis. Ingestion may cause irritation and malaise.

4.3. Indication of any immediate medical attention and special treatment needed Treat symptomatically. The effects might be delayed.

SECTION 5: Firefighting measures

General fire hazards The product is flammable, and heating may generate vapours which may form explosive vapour/air mixtures. Material will float and can be re-ignited on surface of water.

5.1. Extinguishing media

Suitable extinguishing media Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture Thermal decomposition may produce smoke, oxides of carbon and lower molecular weight organic compounds whose composition have not been characterised. Sulfur Oxides (SOx). Nitrogen Oxides (NOx).

5.3. Advice for firefighters

Special protective equipment for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special fire fighting procedures Move containers from fire area if you can do it without risk. Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Stay upwind. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Avoid contact with skin. Wear suitable protective clothing, gloves and eye/face protection. In case of spills, beware of slippery floors and surfaces.

For emergency responders Use personal protection as recommended in section 8 of the SDS.

6.2. Environmental precautions Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not contaminate water. Contact local authorities in case of spillage to drain/aquatic environment.

6.3. Methods and material for containment and cleaning up Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.

Small Spills: Absorb spillage with non-combustible, absorbent material.

Large Spills: Remove with vacuum trucks or pump to storage/salvage vessels. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Wash area with soap and water. Ensure that waste and contaminated materials are collected and removed from the work area as soon as possible in a suitably labelled container.

6.4. Reference to other sections For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Before entering storage tanks and commencing any operation in a confined area check the atmosphere for oxygen content and flammability. (Subject to applicability) If sulphur compounds are suspected to be present in the product, check the atmosphere for H2S content. Access to work area should be restricted to people handling the product only. Should be handled in closed systems, if possible. Avoid contact with eyes, skin, and clothing. Avoid inhalation of vapours. Wear appropriate personal protective equipment. Take precautionary measures against static discharges. Ground container and transfer equipment to eliminate static electric sparks. Vapours are heavier than air and may travel along the floor and in the bottom of containers. Immediately change contaminated clothes. Do not eat, drink or smoke when using the product. Be aware of potential for surfaces to become slippery. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities Follow rules for flammable liquids. Keep away from heat, sparks and open flame. Keep in a cool, well-ventilated place. Keep away from food, drink and animal feeding stuffs. Store away from incompatible materials.

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

ANNEX 1, PART 2 Named dangerous substances
- 34. Petroleum products and alternative fuels (Lower-tier requirements = 2 500 tonnes; Upper-tier requirements = 25 000 tonnes)

7.3. Specific end use(s) Observe industrial sector guidance on best practices.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Belgium. Exposure Limit Values

Components	Type	Value	Form
Fuels, diesel (CAS 68334-30-5)	TWA	100 mg/m3	Vapour and aerosol.

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs)

General population

Components	Value	Assessment factor	Notes
Fuels, diesel (CAS 68334-30-5)			
Long-term, Systemic, Dermal	1,25 mg/kg	40	Repeated dose toxicity
Long-term, Systemic, Inhalation	20,22 mg/m3	12,5	developmental toxicity / teratogenicity
Long-term, Systemic, Oral	1,25 mg/kg	40	Repeated dose toxicity
Short-term, Systemic, Dermal	5,55 mg/kg	10	
Short-term, Systemic, Inhalation	2572,8 mg/m3	12,5	Acute toxicity

Workers

Components	Value	Assessment factor	Notes
Fuels, diesel (CAS 68334-30-5)			
Long-term, Systemic, Dermal	2,91 mg/kg	24	Repeated dose toxicity
Long-term, Systemic, Inhalation	68,34 mg/m3	7,5	developmental toxicity / teratogenicity
Short-term, Systemic, Dermal	11,11 mg/kg	5	Repeated dose toxicity
Short-term, Systemic, Inhalation	4288 mg/m3	7,5	Acute toxicity

Predicted no effect concentrations (PNECs)

Components	Value	Assessment factor	Notes
Fuels, diesel (CAS 68334-30-5)			
Freshwater	21 µg/l	1000	

Exposure guidelines

Belgium OELs: Skin designation

Fuels, diesel (CAS 68334-30-5) Can be absorbed through the skin.

8.2. Exposure controls

Appropriate engineering controls Provide adequate ventilation and minimise the risk of inhalation of vapours and oil mist. Use explosion-proof equipment. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

General information Use personal protective equipment as required. Keep working clothes separately. Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Eye protection should meet standard EN 166.

Skin protection

- Hand protection Wear suitable gloves tested to EN374. Nitrile gloves are recommended, but be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

- Other Protection suit must be worn. Anti-static and flame-retardant protective clothing is recommended.

Respiratory protection In case of inadequate ventilation or risk of inhalation of oil mist, suitable respiratory equipment with combination filter (type A2/P2) can be used. In case of inadequate ventilation or risk of inhalation of oil mist, suitable respiratory equipment with particulate filter and organic vapour cartridges can be used. Wear air-supplied mask in confined areas. Seek advice from local supervisor.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures When using, do not eat, drink or smoke. Wash hands after handling. Launder contaminated clothing before reuse. Private clothes and working clothes should be kept separately. Handle in accordance with good industrial hygiene and safety practices. Observe any medical surveillance requirements.

Environmental exposure controls Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state Liquid.

Form Liquid.

Colour Yellow. Red.

Odour Hydrocarbon.

Melting point/freezing point Not determined.

Boiling point or initial boiling point and boiling range > 150 - < 380 °C (> 302 - < 716 °F)

Flammability Flammable liquid and vapour.

Upper/lower flammability or explosive limits

Explosive limit - lower (%) 0,5 %

Explosive limit – upper (%) 5 %

Flash point > 55 °C (> 131 °F)

Auto-ignition temperature > 250 °C (> 482 °F)

Decomposition temperature Not determined.

pH Not applicable.

Kinematic viscosity	< 7 mm²/s (40 °C (104 °F))
Solubility	
Solubility (water)	Insoluble in water.
Partition coefficient (n-octanol/water) (log value)	Not applicable.
Vapour pressure	< 10 hPa (40 °C (104 °F))
Density and/or relative density	
Density	> 820 - < 870 kg/m³
Vapour density	Not determined.
Particle characteristics	Not applicable, material is a liquid.
9.2. Other information	
9.2.1. Information with regard to physical hazard classes	No relevant additional information available.
9.2.2. Other safety characteristics	No relevant additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Stable at normal conditions.
10.3. Possibility of hazardous reactions	Hazardous polymerisation does not occur. Hazardous reactions do not occur.
10.4. Conditions to avoid	Heat, sparks, flames, elevated temperatures. Contact with incompatible materials.
10.5. Incompatible materials	Strong acids. Strong oxidising agents.
10.6. Hazardous decomposition products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure	
Inhalation	Breathing of high concentrations may cause dizziness, light-headedness, headache, nausea and loss of co-ordination. Continued inhalation may result in unconsciousness.
Skin contact	Causes skin irritation. Repeated exposure may cause skin dryness or cracking. May be absorbed through the skin.
Eye contact	May cause eye irritation on direct contact.
Ingestion	Ingestion may cause irritation and malaise.
Symptoms	Irritation of eyes and mucous membranes. Skin irritation. Defatting of the skin. Dermatitis. Ingestion may cause irritation and malaise.

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

Acute toxicity	Harmful if swallowed - may enter lungs if swallowed or vomited. Breathing of high concentrations may cause dizziness, light-headedness, headache, nausea and loss of co-ordination. Continued inhalation may result in unconsciousness. May irritate and cause stomach pain, vomiting, diarrhoea and nausea.

Components	Species	Test Results
Fuels, diesel (CAS 68334-30-5)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
Inhalation		
LC50	Rat	> 4300 mg/m3, 4 Hours
Oral		
LD50	Rat	> 5000 mg/kg

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	May cause eye irritation on direct contact.
Respiratory sensitisation	Based on available data, the classification criteria are not met.
Skin sensitisation	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.

Carcinogenicity	Suspect cancer hazard.
Reproductive toxicity	Based on available data, the classification criteria are not met.
Specific target organ toxicity - single exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure	May cause damage to the following organs through prolonged or repeated exposure: Liver. Bone marrow. Thymus.
Aspiration hazard	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Mixture versus substance information	Not available.

11.2. Information on other hazards

Endocrine disrupting properties	This mixture does not contain any substances having endocrine disrupting properties with respect to human health as assessed in accordance with the criteria set out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605, at a concentration equal to or greater than 0.1% by weight.
Other information	Components of the product may be absorbed into the body through the skin.

SECTION 12: Ecological information

12.1. Toxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Fuels, diesel (CAS 68334-30-5)			
Aquatic			
Algae	EL50	Freshwater algae	22 mg/l, 72 Hours
Crustacea	EL50	Daphnia	68 mg/l, 48 Hours
Fish	LL50	Freshwater fish	21 mg/l, 96 Hours

12.2. Persistence and degradability	The product is readily biodegradable.
12.3. Bioaccumulative potential	Evaluation of representative hydrocarbons indicates that no structure meets the very bioaccumulative (vB) criterion but some meet the bioaccumalitive (B) criterion. Potential to bioaccumulate is low.
Partition coefficient n-octanol/water (log Kow)	Not applicable.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	Based on the calculation model the product has a potential of being absorbed in the soil.
Mobility in general	The product is insoluble in water. It will spread on the water surface while some of the components will eventually sediment in water systems. The volatile components of the product will spread in the atmosphere.
12.5. Results of PBT and vPvB assessment	This mixture does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII.
12.6. Endocrine disrupting properties	This mixture does not contain any substances having endocrine disrupting properties with respect to the environment as assessed in accordance with the criteria set out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605, at a concentration equal to or greater than 0.1% by weight.
12.7. Other adverse effects	The product contains volatile organic compounds which have a photochemical ozone creation potential. Oil spills are generally hazardous to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Dispose in accordance with local regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.
EU waste code	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Dispose in accordance with all applicable regulations. This material and/or its container must be disposed of as hazardous waste.

SECTION 14: Transport information

ADR

14.1. UN number	UN1202
14.2. UN proper shipping name	GAS OIL

14.3. Transport hazard class(es)

Class	3
Subsidiary risk	-
Label(s)	3
Hazard No. (ADR)	30
Tunnel restriction code	D/E
14.4. Packing group	III
14.5. Environmental hazards	Yes
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number	UN1202
14.2. UN proper shipping name	GAS OIL

14.3. Transport hazard class(es)

Class	3
Subsidiary risk	-
Label(s)	3
14.4. Packing group	III
14.5. Environmental hazards	Yes
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number	UN1202
14.2. UN proper shipping name	GAS OIL

14.3. Transport hazard class(es)

Class	3
Subsidiary risk	-
Label(s)	3
14.4. Packing group	III
14.5. Environmental hazards	Yes
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number	UN1202
14.2. UN proper shipping name	GAS OIL

14.3. Transport hazard class(es)

Class	3
Subsidiary risk	-
14.4. Packing group	III
14.5. Environmental hazards	Yes
ERG Code	3L
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

14.1. UN number	UN1202
14.2. UN proper shipping name	GAS OIL

14.3. Transport hazard class(es)

Class	3
Subsidiary risk	-
14.4. Packing group	III
14.5. Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

14.7. Maritime transport in bulk according to IMO instruments	This product is considered to fall under the scope of Annex I to Marpol 73/78 and is subject to the requirements of that Annex if carried in bulk.

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations	The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended. Directive 2012/18/EU on major accident hazards involving dangerous substances: Part 2 (Named dangerous substances) - 34. Petroleum products and alternative fuels.
National regulations	Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended. According to Directive 92/85/EEC as amended, pregnant women should not work with the product, if there is the least risk of exposure. Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.
15.2. Chemical safety assessment	The chemical safety assessment has been carried out for the components of the mixture listed in section 3 of the SDS. Exposure scenarios relevant for these substances are annexed to this eSDS.

SECTION 16: Other information

List of abbreviations

PBT: Persistent, bioaccumulative and toxic.
vPvB: Very Persistent and very Bioaccumulative.
CEN: European Committee for Standardisation.
LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.
LL50: Lethal level, 50%.
EL50: Effective level, 50%.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
MARPOL: International Convention for the Prevention of Pollution from Ships.
IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.
UVCB: Unknown or Variable Composition, Complex Reaction Products, and Biological Materials.

References

Chemical safety report.
IUCLID: International uniform chemical information database.
IARC Monographs. Overall Evaluation of Carcinogenicity

Information on evaluation method leading to the classification of mixture	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
Full text of any statements, which are not written out in full under sections 2 to 15	H226 Flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H332 Harmful if inhaled. H351 Suspected of causing cancer. H373 May cause damage to organs through prolonged or repeated exposure. H411 Toxic to aquatic life with long lasting effects.
Training information	Follow training instructions when handling this material.
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available at the date of revision and exclusively refer to the product in its as-delivered condition. The information and recommendations are offered for the user's consideration and examination. The logo and the name "MUSKET EUROPE SARL" may include anyone or more of MUSKET EUROPE SARL or MUSKET CORP or any affiliates in which they directly or indirectly hold any interest.

Annex to the extended Safety Data Sheet (eSDS)

Table of contents

1 - Exposure Scenario Worker

1. Distribution of substance

List of use descriptors

Sector(s) of Use	SU3: Industrial uses
Name of contributing environmental scenario and corresponding ERC	ERC1: Manufacture of the substance ERC2: Formulation into mixture ERC3: Formulation into solid matrix ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) ERC5: Use at industrial site leading to inclusion into/onto article ERC6a: Use of intermediate ERC6b: Use of reactive processing aid at industrial site (no inclusion into or onto article) ERC6c: Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) ERC6d: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) ERC7: Use of functional fluid at industrial site
List of names of contributing worker scenarios and corresponding PROCs	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Chemical production where opportunity for exposure arises PROC8a: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent

2.1.1. Contributing scenario controlling environmental exposure for Manufacture of the substance

Product characteristics

Concentration of the substance in a mixture	Substance is complex UVCB. Predominantly hydrophobic
Physical state	Liquid.

Amounts used

Fraction of EU tonnage used in region	0,1
Regional use tonnage	28000000 tonnes/year
Fraction of regional tonnage used locally	0,002
Annual amount per site	56000 tonnes/year
Maximum allowable site tonnage (MSafe)	190000 kg/day

Frequency and duration of use

Batch process	Not applicable.
Continuous process	Emission days (days/year): 300

Environment factors not influenced by risk management

Local freshwater dilution factor:	10
Local marine water dilution factor:	100

Other given operational conditions affecting environmental exposure

	Emission days	Emission factors			
Type	**(days/year)**	**Air**	**Soil**	**Water**	**Remarks**
initial release prior to RMM		0,001	0,00001	0,000001	Release fractions to air, soil, and water.

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Air	Treat air emission to provide a typical removal efficiency of (%): 90
Soil	Not established.
Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ (%): 0. If discharging to municipal sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ (%): 0
Sediment	Not established.
Remarks	Not applicable.
Organisational measures to prevent/limit release from site	Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion). Prevent discharge of undissolved substance to or recover from onsite wastewater. No wastewater treatment required.

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m3/d)

Type	Municipal Sewage Treatment Plant
Discharge rate	2000 m³/day
Treatment effectiveness	94,1 %
Sludge treatment technique	Prevent discharge of undissolved substance to or recover from onsite wastewater. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks	Maximum allowable site tonnage (MSafe) (kg/d): 2,9e6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,1 %

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment

Suitable waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Disposal methods	Not assigned.
Treatment effectiveness	Not available.

Conditions and measures related to external recovery of waste

Fraction of used amount transferred to external waste treatment

Suitable recover operations	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Additional good practice advice beyond the REACH CSA	Additional information on the basis for the allocation of the identified OCs and RMMs is contained in the PETRORISK file.

2.2.1. Contributing scenario controlling worker exposure for Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Product characteristics

Physical form of the product	Liquid
vapour pressure	Vapour pressure < 0,5 kPa at STP
Process temperature	Operation is carried out at elevated temperature (> 20°C above ambient temperature)

Amounts used

Covers percentage substance in the product up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours

Human factors not influenced by risk management

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented

Other relevant operational conditions

Not available.

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	General exposures (closed systems): Handle substance within a closed system.

Technical conditions and measures to control dispersion from source towards the worker	General exposures (open systems): Wear suitable gloves tested to EN374. Process sampling: No other specific measures identified. Bulk closed loading and unloading: Handle substance within a closed system. Wear suitable gloves tested to EN374. Bulk open loading and unloading: Wear suitable gloves tested to EN374. Equipment cleaning and maintenance: Drain down and flush system prior to equipment break-in or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Laboratory activities: No other specific measures identified. Drum and small package filling: Wear suitable gloves tested to EN374. Storage: Handle substance within a closed system.
Organizational measures to prevent/limit releases, dispersion and exposure	No other specific measures identified.
Conditions and measures related to personal protection, hygiene and health evaluations	General measures applicable to all activities: Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. General measures (skin irritants): Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

3. Exposure Estimation

Environment

Hydrocarbon Block Method (Petrorisk)

Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Health
Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk management measures are based on qualitative risk characterisation.

Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

2 - Exposure Scenario Worker

1. Formulation & (re)packing of substances and mixtures

List of use descriptors

Sector(s) of Use	SU3: Industrial uses SU10: Formulation [mixing] of preparations and/or re-packaging
Name of contributing environmental scenario and corresponding ERC	ERC2: Formulation into mixture
List of names of contributing worker scenarios and corresponding PROCs	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Chemical production where opportunity for exposure arises PROC5: Mixing or blending in batch processes PROC8a: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC14: Tabletting, compression, extrusion, pelettisation, granulation PROC15: Use as laboratory reagent

2.1.1. Contributing scenario controlling environmental exposure for Formulation into mixture

Product characteristics

Concentration of the substance in a mixture	Substance is complex UVCB. Predominantly hydrophobic
Physical state	Liquid.

Amounts used

Fraction of EU tonnage used in region	0,1
Regional use tonnage	28000000 tonnes/year
Fraction of regional tonnage used locally	0,0011
Annual amount per site	30000 tonnes/year
Maximum allowable site tonnage (MSafe)	100000 kg/day

Frequency and duration of use

Batch process	Not applicable.
Continuous process	Emission days (days/year): 300

Environment factors not influenced by risk management

Local freshwater dilution factor:	10
Local marine water dilution factor:	100

Other given operational conditions affecting environmental exposure

	Emission days	Emission factors			
Type	**(days/year)**	**Air**	**Soil**	**Water**	**Remarks**
initial release prior to RMM		0,01	0,0001	0,00002	Release fractions to air, soil, and water.

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Air	Treat air emission to provide a typical removal efficiency of (%): 0
Soil	Not established.
Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ (%): 59.9. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ (%): 0
Sediment	Not established.

Remarks	Not applicable.
Organisational measures to prevent/limit release from site	Risk from environmental exposure is driven by freshwater sediment. Prevent discharge of undissolved substance to or recover from onsite wastewater. If discharging to municipal sewage treatment plant, no onsite wastewater treatment required.

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m3/d)

Type	Municipal Sewage Treatment Plant
Discharge rate	2000 m³/day
Treatment effectiveness	94,1 %
Sludge treatment technique	Prevent discharge of undissolved substance to or recover from onsite wastewater. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks	Maximum allowable site tonnage (MSafe) (kg/d): 6,8e5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,1 %

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment

Suitable waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Disposal methods	Not assigned.
Treatment effectiveness	Not available.

Conditions and measures related to external recovery of waste

Fraction of used amount transferred to external waste treatment

Suitable recover operations	External treatment and disposal of waste should comply with applicable local and/or national regulations.
Additional good practice advice beyond the REACH CSA	Additional information on the basis for the allocation of the identified OCs and RMMs is contained in the PETRORISK file.

2.2.1. Contributing scenario controlling worker exposure for Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Product characteristics

Physical form of the product	Liquid
vapour pressure	Vapour pressure < 0,5 kPa at STP
Process temperature	Assumes use at not more than 20°C above ambient temperature.

Amounts used

Covers percentage substance in the product up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours

Human factors not influenced by risk management

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented

Other relevant operational conditions

Not available.

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	General exposures (closed systems): Handle substance within a closed system.

Technical conditions and measures to control dispersion from source towards the worker	General exposures (open systems): Wear suitable gloves tested to EN374. Process sampling: No other specific measures identified. Drum/batch transfers: Use drum pumps or carefully pour from container. Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training. Bulk transfers: Handle substance within a closed system. Wear suitable gloves tested to EN374. Mixing operations (open systems): Provide extract ventilation to points where emissions occur. Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training. Laboratory activities: No other specific measures identified. Production of preparations or articles by tabletting, compression, extrusion, pelettisation: Wear suitable gloves tested to EN374. Drum and small package filling: Wear suitable gloves tested to EN374. Equipment cleaning and maintenance: Drain down and flush system prior to equipment break-in or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with ‘basic’ employee training. Storage: Store substance within a closed system.
Organizational measures to prevent/limit releases, dispersion and exposure	No other specific measures identified.
Conditions and measures related to personal protection, hygiene and health evaluations	General measures applicable to all activities: Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. General measures (skin irritants): Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

3. Exposure Estimation

Environment

Hydrocarbon Block Method (Petrorisk)

Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Health
Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk management measures are based on qualitative risk characterisation.

Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

3 - Exposure Scenario Worker

1. Use as a fuel

List of use descriptors

Sector(s) of Use	SU3: Industrial uses
Name of contributing environmental scenario and corresponding ERC	ERC7: Industrial use of substances in closed systems
List of names of contributing worker scenarios and corresponding PROCs	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC16: Use of fuels

2.1.1. Contributing scenario controlling environmental exposure for Industrial use of substances in closed systems

Product characteristics

Concentration of the substance in a mixture	Substance is complex UVCB. Predominantly hydrophobic
Physical state	Liquid.

Amounts used

Fraction of EU tonnage used in region	0,1
Regional use tonnage	4500000 tonnes/year
Fraction of regional tonnage used locally	0,34
Annual amount per site	1500000 tonnes/year
Maximum allowable site tonnage (MSafe)	5000000 kg/day

Frequency and duration of use

Batch process	Not applicable.
Continuous process	Emission days (days/year): 300

Environment factors not influenced by risk management

Local freshwater dilution factor:	10
Local marine water dilution factor:	100

Other given operational conditions affecting environmental exposure

	Emission days	Emission factors			
Type	**(days/year)**	**Air**	**Soil**	**Water**	**Remarks**
initial release prior to RMM		0,005	0	0,00001	Release fractions to air, soil, and water.

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Air	Treat air emission to provide a typical removal efficiency of (%):	95
Soil	Not established.	
Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ (%): 97.7. If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ (%): 60.4	
Sediment	Not established.	
Remarks	Not applicable.	
Organisational measures to prevent/limit release from site	Risk from environmental exposure is driven by freshwater sediment. If discharging to municipal sewage treatment plant, no onsite wastewater treatment required.	

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m3/d)

Type	Municipal Sewage Treatment Plant
Discharge rate	2000 m³/day
Treatment effectiveness	94,1 %
Sludge treatment technique	Prevent discharge of undissolved substance to or recover from onsite wastewater. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks	Maximum allowable site tonnage (MSafe) (kg/d): 5,0e6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	97,7 %

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment

Suitable waste treatment	Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.
Disposal methods	Not assigned.
Treatment effectiveness	Not available.

Conditions and measures related to external recovery of waste

Fraction of used amount transferred to external waste treatment

Suitable recover operations	External recovery and recycling of waste should comply with applicable local and/or national regulations.
Additional good practice advice beyond the REACH CSA	Additional information on the basis for the allocation of the identified OCs and RMMs is contained in the PETRORISK file.

2.2.1. Contributing scenario controlling worker exposure for Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Product characteristics

Physical form of the product	Liquid
vapour pressure	Vapour pressure < 0,5 kPa at STP
Process temperature	Assumes use at not more than 20°C above ambient temperature.

Amounts used

Covers percentage substance in the product up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours

Human factors not influenced by risk management

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented

Other relevant operational conditions

Not available.

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	No other specific measures identified.
Technical conditions and measures to control dispersion from source towards the worker	Bulk transfers: Wear suitable gloves tested to EN374. Drum/batch transfers: Wear suitable gloves tested to EN374. Use as a fuel Closed systems: No other specific measures identified. Equipment cleaning and maintenance: Drain down and flush system prior to equipment break-in or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Storage: Store substance within a closed system.
Organizational measures to prevent/limit releases, dispersion and exposure	No other specific measures identified.

Conditions and measures related to personal protection, hygiene and health evaluations	General measures applicable to all activities: Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. General measures (skin irritants): Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

3. Exposure Estimation

Environment

Hydrocarbon Block Method (Petrorisk)

Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Health
Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk management measures are based on qualitative risk characterisation.

Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

4 - Exposure Scenario Worker

1. Use as a fuel

List of use descriptors

Sector(s) of Use	SU22: Professional uses
Name of contributing environmental scenario and corresponding ERC	ERC9a: Widespread use of functional fluid (indoor) ERC9b: Widespread use of functional fluid (outdoor)
List of names of contributing worker scenarios and corresponding PROCs	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities PROC8b: Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC16: Use of fuels

2.1.1. Contributing scenario controlling environmental exposure for Widespread use of functional fluid (indoor)

Product characteristics

Concentration of the substance in a mixture	Substance is complex UVCB. Predominantly hydrophobic
Physical state	Liquid.

Amounts used

Fraction of EU tonnage used in region	0,1
Regional use tonnage	6700000 tonnes/year
Fraction of regional tonnage used locally	0,0005
Annual amount per site	3300 tonnes/year
Maximum allowable site tonnage (MSafe)	9200 kg/day

Frequency and duration of use

Batch process	Not applicable.
Continuous process	Emission days (days/year): 365

Environment factors not influenced by risk management

Local freshwater dilution factor:	10
Local marine water dilution factor:	100

Other given operational conditions affecting environmental exposure

	Emission days	Emission factors			
Type	**(days/year)**	**Air**	**Soil**	**Water**	**Remarks**
initial release prior to RMM		0,0001	0,00001	0,00001	Release fractions to air, soil, and water.

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Air	Treat air emission to provide a typical removal efficiency of (%):	Not applicable.
Soil	Not established.	
Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of ≥ (%): 0. If discharging to municipal sewage treatment plant, provide the required onsite wastewater removal efficiency of ≥ (%): 0	
Sediment	Not established.	
Remarks	Not applicable.	

Organisational measures to prevent/limit release from site	Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion). No wastewater treatment required.

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m3/d)

Type	Municipal Sewage Treatment Plant
Discharge rate	2000 m³/day
Treatment effectiveness	94,1 %
Sludge treatment technique	Prevent discharge of undissolved substance to or recover from onsite wastewater. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.
Remarks	Maximum allowable site tonnage (MSafe) (kg/d): 1,4e5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,1 %

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment

Suitable waste treatment	Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.
Disposal methods	Not assigned.
Treatment effectiveness	Not available.

Conditions and measures related to external recovery of waste

Fraction of used amount transferred to external waste treatment

Suitable recover operations	External recovery and recycling of waste should comply with applicable local and/or national regulations.
Additional good practice advice beyond the REACH CSA	Additional information on the basis for the allocation of the identified OCs and RMMs is contained in the PETRORISK file.

2.2.1. Contributing scenario controlling worker exposure for Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Product characteristics

Physical form of the product	Liquid
vapour pressure	Vapour pressure < 0,5 kPa at STP
Process temperature	Assumes use at not more than 20°C above ambient temperature.

Amounts used

Covers percentage substance in the product up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours

Human factors not influenced by risk management

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented

Other relevant operational conditions

Not available.

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	No other specific measures identified.
Technical conditions and measures to control dispersion from source towards the worker	Bulk transfers: Wear suitable gloves tested to EN374. Drum/batch transfers: Use drum pumps or carefully pour from container. Wear suitable gloves tested to EN374. Refuelling: Wear suitable gloves tested to EN374. Use as a fuel Closed systems: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). or Ensure operation is undertaken outdoors. Equipment cleaning and maintenance: Drain down and flush system prior to equipment break-in or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Storage: Store substance within a closed system.

Organizational measures to prevent/limit releases, dispersion and exposure	No other specific measures identified.
Conditions and measures related to personal protection, hygiene and health evaluations	General measures applicable to all activities: Control any potential exposure using measures such as contained or enclosed systems, properly designed and maintained facilities and a good standard of general ventilation. Drain down systems and transfer lines prior to breaking containment. Drain down and flush equipment where possible prior to maintenance. Where there is potential for exposure: Ensure relevant staff are informed of the nature of exposure and aware of basic actions to minimise exposures; ensure suitable personal protective equipment is available; clear up spills and dispose of waste in accordance with regulatory requirements; monitor effectiveness of control measures; consider the need for health surveillance; identify and implement corrective actions. General measures (skin irritants): Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

3. Exposure Estimation

Environment

Hydrocarbon Block Method (Petrorisk)

Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Health
Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Risk management measures are based on qualitative risk characterisation.

Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

5 - Exposure Scenario Consumer

1. Use as a fuel

List of use descriptors

Sector(s) of Use	SU21: Consumer uses
Name of contributing environmental scenario and corresponding ERC	ERC9a: Widespread use of functional fluid (indoor) ERC9b: Widespread use of functional fluid (outdoor)
List of names of contributing consumer scenarios and corresponding PROCs	PC13: Fuels

2.1.1. Contributing scenario controlling environmental exposure for Widespread use of functional fluid (indoor)

Product characteristics

Concentration of the substance in a mixture	Substance is complex UVCB. Predominantly hydrophobic
Physical state	Liquid.

Amounts used

Fraction of EU tonnage used in region	0,1
Regional use tonnage	16000000 tonnes/year
Fraction of regional tonnage used locally	0,0005
Annual amount per site	8200 tonnes/year
Maximum allowable site tonnage (MSafe)	23000 kg/day

Frequency and duration of use

Batch process	Not applicable.
Continuous process	Emission days (days/year): 365

Environment factors not influenced by risk management

Local freshwater dilution factor:	10
Local marine water dilution factor:	100

Other given operational conditions affecting environmental exposure

	Emission days	Emission factors			
Type	**(days/year)**	**Air**	**Soil**	**Water**	**Remarks**
Wide dispersive use		0,0001	0,00001	0,00001	Release fractions to air, soil, and water.

Risk from environmental exposure is driven by humans via indirect exposure (primarily ingestion).

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release	Not available.

Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/treatment plant (m3/d)

Type	Municipal Sewage Treatment Plant
Discharge rate	2000 m³/day
Sludge treatment technique	Not available.
Remarks	Maximum allowable site tonnage (MSafe) (kg/d): 3,5e5
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,1 %

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment

Suitable waste treatment	Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment.
Disposal methods	Not assigned.
Treatment effectiveness	Not available.

Conditions and measures related to external recovery of waste

Fraction of used amount transferred to external waste treatment

Suitable recover operations	External recovery and recycling of waste should comply with applicable local and/or national regulations.
Additional good practice advice beyond the REACH CSA	Additional information on the basis for the allocation of the identified OCs and RMMs is contained in the PETRORISK file.

2.2.1. Contributing exposure scenario controlling consumer exposure for Fuels

Product characteristics

Concentration of the substance in a mixture	Covers percentage substance in the product up to 100 %.
Physical form of the product	Liquid
vapour pressure	Vapour pressure > 10 kPa at STP

Amounts used

Covers use up to	37500 g Unless otherwise stated.
Covers skin contact area up to	420 cm² Unless otherwise stated.

Frequency and duration of use

	Duration	Frequency of use	Remarks
Covers daily exposures up to 8 hours			

Human factors not influenced by risk management

Other given operational conditions affecting consumer exposure

Not available.

Other relevant operational conditions

Covers exposure up to: 2 h/event Unless otherwise stated.

Risk management measures (RMM)

Conditions and measures related to information and behavioral advice to consumers

Not available.

Conditions and measures related to personal protection, hygiene and health evaluations	Liquid: automotive refuelling: Unless otherwise stated. Covers concentrations up to 100% Covers use up to 52 days per year Covers use up to 1 events per day Covers skin contact area up to 210 cm² For each use event, covers use amounts up to 37500 g Covers outdoor use. Covers use in room size of 100 m3 Covers exposure up to 0,05 h/event No specific risk management measure identified beyond those operational conditions stated. Liquid: garden equipment - use: Unless otherwise stated. Covers concentrations up to 100% Covers use up to 26 days per year Covers use up to 1 events per day For each use event, covers use amounts up to 750 g Covers outdoor use. Covers use in room size of 100 m3 Covers exposure up to 2 h/event No specific risk management measure identified beyond those operational conditions stated. Liquid: garden equipment - refuelling: Unless otherwise stated. Covers concentrations up to 100% Covers use up to 1 events per day Covers use up to 26 days per year Covers skin contact area up to 420 cm² For each use event, covers use amounts up to 750 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 Covers exposure up to 0,03 h/event No specific risk management measure identified beyond those operational conditions stated.

3. Exposure Estimation

Environment

Hydrocarbon Block Method (Petrorisk)

Health

ECETOC TRA consumer V2

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Health
Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Environment
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Biofuel Express is a leading distributor of 100% fossil-free biofuels such as HVO Renewable Diesel and B100 Biodiesel RME Premium. Our primary focus is the 100% biofuel market. We are passionate about the green environmental impact of sustainable fuel.

Biofuel Express specializes in providing advice and calculating the benefits of fossil fuels. This makes us the right partner for you if you want to transition to 100% fossil-free operation of your diesel-powered vehicles.

For the past 15 years, we have specialized in converting fleets and equipment for refueling buses, trucks, and cars from regular diesel to 100% fossil-free operation.

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