

Safety Data Sheet

400009980 / MGO 50 ppm S farvet / 002D6397

Issued: 12/16/2022

Version: 1.0.0

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

1.1. Product identifier

Trade name: 400009980 / MGO 50 ppm S farvet / 002D6397

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

Recommended uses: Fuel.

Inadvisable uses: This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier. This product may not be used as a solvent, cleaning agent, for igniting or fanning fire or as a skin cleanser.

1.3. Details of the supplier of the safety data sheet

Supplier

Company: DCC Energi Danmark A/S
Address: Nærum Hovedgade 8
Zip code: DK-2850
City: Nærum
Country: DENMARK
E-mail: erhverv@dccenergi.dk
Phone: (+45) 70102200

1.4. Emergency Telephone Number

Crossbridge Energy: (+45) 79 20 35 22

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

CLP-classification: Flam. Liq. 3;H226
Asp. Tox. 1;H304
Skin Irrit. 2;H315
Acute Tox. 4;H332
Carc. 2;H351
STOT RE 2;H373 (Liver., Blood., Thymus.)
Aquatic Chronic 2;H411

Most serious harmful effects: Flammable liquid and vapour. May be fatal if swallowed and enters airways. Causes skin irritation. Harmful if inhaled. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure. (Liver., Blood., Thymus.) Toxic to aquatic life with long lasting effects. The product releases organic solvent vapours which may cause lethargy and dizziness. At high concentrations, the vapours may cause headache and intoxication. Prolonged or repeated exposure by skin contact or inhalation of vapours may cause damage to the central nervous system.

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2.2. Label elements

Pictograms



Signal word: Danger

Contains

Substance: Fuels, diesel; C8-C26 branched and linear hydrocarbons – Distillates;

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.
H373 May cause damage to organs through prolonged or repeated exposure. (Liver., Blood., Thymus.)
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+310+331 IN CASE OF INGESTION: Call a POISON INFORMATION/doctor. DO NOT induce vomiting immediately.

2.3. Other hazards

The product does not contain any PBT or vPvB substances.
Endocrine disrupting properties: None known.

Risk of accumulation of hydrogen sulphide (H₂S), especially in confined spaces (i.e. storage vessels) with limited air supply.
H₂S is a very toxic gas.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Substance	CAS No./ EC No./ REACH Reg. No.	Concentration	Notes	CLP-classification
Fuels, diesel	68334-30-5 269-822-7 01-2119484664-27	50 ≤ 100 %		Flam. Liq. 3;H226 Asp. Tox. 1;H304 Skin Irrit. 2;H315 Acute Tox. 4;H332 Carc. 2;H351 STOT RE 2;H373 Aquatic Chronic 2;H411
C8-C26 branched and linear hydrocarbons – Distillates	848301-67-7 481-740-5 01-0000020119-75	0 ≤ 50 %		Asp. Tox. 1;H304 EUH066
cumene	98-82-8 202-704-5	0 - 0.5 %	*	Flam. Liq. 3;H226 Asp. Tox. 1;H304 STOT SE 3;H335 Carc. 1B;H350 Aquatic Chronic 2;H411

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naphthalene	91-20-3 202-049-5	0 - 0.5 %	*	Acute Tox. 4;H302 Carc. 2;H351 Aquatic Acute 1;H400 Aquatic Chronic 1;H410
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Please see section 16 for the full text of H- / EUH-phrases.

* = The substance is a naturally occurring component of the naphthas mentioned.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:	Seek fresh air. Seek medical advice in case of persistent discomfort.
Ingestion:	Wash out mouth thoroughly and drink 1-2 glasses of water in small sips. Do not induce vomiting. If vomiting occurs, keep head low so that stomach contents do not enter lungs. Immediately call a POISON CENTER or doctor/physician.
Skin contact:	Remove contaminated clothing. Wash skin with soap and water. Seek medical advice in case of persistent discomfort.
Eye contact:	Flush with water (preferably using eye wash equipment) until irritation subsides. Seek medical advice if symptoms persist.
Burns:	Flush with water until pain ceases. Remove clothing that is not stuck to the skin - seek medical advice/transport to hospital. If possible, continue flushing until medical attention is obtained.
General:	When obtaining medical advice, show the safety data sheet or label.

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

Harmful by inhalation. May cause chemical pneumonia if ingested or vomited. Suspected of causing cancer. Irritating to skin - may cause reddening. The product releases organic solvent vapours which may cause lethargy and dizziness. At high concentrations, the vapours may cause headache and intoxication. Prolonged or repeated exposure by skin contact or inhalation of vapours may cause damage to the central nervous system. May cause damage to organs through prolonged or repeated exposure. The following organs will be damaged: Blood. Liver. Thymus.

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

Treat symptoms. No special immediate treatment required.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:	Extinguish with powder, foam or water mist. Use water or water mist to cool non-ignited stock.
Unsuitable extinguishing media:	Do not use water stream, as it may spread the fire.

5.2. Special hazards arising from the substance or mixture

The product decomposes when combusted and the following toxic gases can be formed: Carbon monoxide and carbon dioxide/ Nitrous gases/ hydrogen sulphide / Sulphur oxides.

5.3. Advice for firefighters

Move containers from danger area if it can be done without risk. Avoid inhalation of vapour and flue gases - seek fresh air. Wear Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Send contaminated extinguishing water for destruction.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Stay upwind/keep distance from source. Stop leak if this can be done without risk. Wear safety goggles if there is a risk of eye splash. Wear gloves. Wear suitable protective clothing. Smoking and naked flames prohibited. Take precautionary measures against static discharges. Use spark-free tools and explosion proof equipment.

For emergency responders: In addition to the above: Protective suit equivalent to EN 368, type 3, is recommended.

6.2. Environmental precautions

Prevent spillage from entering drains and/or surface water. Notify proper authorities in case of contamination of soil or aquatic environment or discharge to drains.

6.3. Methods and material for containment and cleaning up

Contain and absorb spill with sand or other absorbent, non-combustible material and transfer to suitable waste containers.

6.4. Reference to other sections

See section 8 for type of protective equipment. See section 13 for instructions on disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Work under effective process ventilation (e.g. local exhaust ventilation). Smoking and naked flames prohibited. Take precautionary measures against static discharges. Use spark-free tools and explosion proof equipment. Running water and eye wash equipment must be available. Wash hands before breaks, before using restroom facilities, and at the end of work. Do not store, use and/or consume foods, beverages or tobacco products in the work room. Store personal protective equipment separately from other clothing. A workplace assessment must be conducted to ensure that employees are not exposed to effects that may involve a risk during pregnancy or when breastfeeding.

7.2. Conditions for safe storage, including any incompatibilities

Store safely, out of reach of children and away from food, animal feeding stuffs, medicines, etc. Keep in tightly closed original packaging. Do not expose to heat (e.g. sunlight). Do not store with the following: Strong oxidisers.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit

Substance name	Time period	ppm	mg/m ³	fiber/cm ³	Remarks	Notation
cumene	8h	10	50			Skin
cumene	15m	50	250			Skin
naphthalene	8h	10	50			

Skin = A skin notation assigned to the occupational exposure limit value indicates the possibility of significant uptake through the skin.

Measuring methods: Compliance with occupational exposure limits may be checked by occupational hygiene measurements.

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Legal basis: Commission Directive 2000/39/EC (Occupational Exposure Limits) as subsequently amended. Last amended by Commission Directive 2019/1831/EU. Directive 2004/37/EC (Exposure to carcinogens or mutagens at work) as subsequently amended. Last amended by Directive 2022/431/EU. Resolution 2019/2182(INL) (Protecting workers from asbestos) as subsequently amended. Last amended by resolution 2022/C 184/03.

DNEL - workers

Fuels, diesel, cas-no 68334-30-5					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note
Dermal DNEL (long-term exposure - systemic effects)	2.9 mg/kg				
Inhalation DNEL (long-term exposure - systemic effects)	68 mg/m ³				

DNEL - general population

Fuels, diesel, cas-no 68334-30-5					
Exposure	Value	Assessment Factor	Dose Descriptor	Main Impact Parameter	Note
Dermal DNEL (long-term exposure - systemic effects)	1.3 mg/kg				
Inhalation DNEL (long-term exposure - systemic effects)	20 mg/m ³				

8.2. Exposure controls

Appropriate engineering controls: Wear the personal protective equipment specified below.

Personal protective equipment, eye/face protection: Wear safety goggles. Eye protection must conform to EN 166.

Personal protective equipment, skin protection: Wear suitable protective clothing.

Personal protective equipment, hand protection: Light use , shortterm contact (below 10 min.): Wear gloves. Type of material and thickness: Neoprene rubber/ PVC. 0,35 mm. Breakthrough time has not been determined for the product. Change gloves often.
Medium use, medium contact (1-2 hours): Wear gloves. Type of material and thickness: Nitrile rubber/ 0,35 mm. Breakthrough time has not been determined for the product. Change gloves often.
The suitability and durability of a glove is dependant on usage, e.g. frequency and duration of contact, glove material thickness, functionality and chemical resistance. Always seek advice from the glove supplier. Gloves must conform to EN 374.

Personal protective equipment, respiratory protection: Use process ventilation. If this is not possible, use respiratory equipment. The product contains liquids with a low boiling point which are poorly adsorbed on charcoal filters. The use of fresh air respiratory protective equipment is thus required. Respiratory protection must conform to one of the following standards: EN 136/140/145.

Environmental exposure controls: Ensure compliance with local regulations for emissions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Parameter	Value/unit
State	Liquid

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Colour	Weak blue - yellow
Odour	Hydrocarbon
Solubility	Solubility in water: Insoluble

Parameter	Value/unit	Remarks
Odour threshold	No data	
Melting point	No data	
Freezing point	No data	
Initial boiling point and boiling range	170 - 390 °C	
Flammability (solid, gas)	No data	
Flammability limits	No data	
Explosion limits	1 - 6 vol%	
Flash Point	60 - 75 °C	
Auto-ignition temperature	> 220 °C	
Decomposition temperature	No data	
pH (solution for use)	No data	
pH (concentrate)	No data	
Kinematic viscosity	2 - 4 mm ² /s	(40 °C)
Viscosity	No data	
Partition coefficient n-octanol/water	2 - 15	
Vapour pressure	kPa	0,4 kPa (38 °C) / 0,6 kPa (50 °C)
Density	820 - 860 kg/m ³	(15,0 °C)
Relative density	No data	
Vapour density	No data	
Relative density (sat. air)	No data	
Particle characteristics	No data	

9.2. Other information

Other Information: Conductivity: Electrical conductivity: < 100 pS/m

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with the following: Strong oxidisers.

10.2. Chemical stability

The product is stable when used in accordance with the supplier's directions.

10.3. Possibility of hazardous reactions

Product vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

10.4. Conditions to avoid

Avoid heating and contact with ignition sources.

10.5. Incompatible materials

Strong oxidisers.

10.6. Hazardous decomposition products

Hazardous decomposition products are not expected to be formed during normal storage. Thermal decomposition is extremely dependent on the conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulfur oxides, and unidentified organic compounds is developed when this material undergoes combustion, thermal decomposition or oxidative decomposition.

Contains Hydrogen Sulfide (H₂S), which is an extremely flammable and toxic gas, and other hazardous fumes can develop and

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accumulate in the airspace of storage tanks.

SECTION 11: Toxicological information

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

Acute toxicity - oral

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Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LD50		> 5000 mg/kg			

Ingestion may cause discomfort. The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

Acute toxicity - dermal

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Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rabbit	LD50		> 2000 mg/kg			

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

Acute toxicity - inhalation

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Organism	Test Type	Exposure time	Value	Conclusion	Test method	Source
Rat	LC50	4 h	1 ≤ 5 mg/l			

Harmful by inhalation.

Skin corrosion/irritation: Irritating to skin - may cause reddening.

Serious eye damage/eye irritation: Temporary irritation. The product does not have to be classified. Test data are not available.

Respiratory sensitisation or skin sensitisation: The product does not have to be classified. Test data are not available.

Germ cell mutagenicity: The product does not have to be classified. Test data are not available.

Carcinogenic properties: Suspected of causing cancer.

Reproductive toxicity: The product does not have to be classified. Test data are not available.

Single STOT exposure: The product releases organic solvent vapours which may cause lethargy and dizziness. At high concentrations, the vapours may cause headache and intoxication.

Repeated STOT exposure: Prolonged or repeated exposure by skin contact or inhalation of vapours may cause damage to the central nervous system. May cause damage to organs through prolonged or repeated exposure. The following organs will be damaged: Blood. Liver. Thymus.

Aspiration hazard: May cause chemical pneumonia if ingested or vomited.

11.2. Information on other hazards

Endocrine disrupting properties: None known.

Other toxicological effects: Risk of accumulation of hydrogen sulphide (H₂S), especially in confined spaces (i.e. storage vessels) with limited air supply. H₂S is a very toxic gas.

SECTION 12: Ecological information

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12.1. Toxicity

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Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
Fish			LL/EL/IL50	1 ≤ 10 mg/l			
Crustacea			LL/EL/IL50	1 ≤ 10 mg/l			
Algae			LL/EL/IL50	1 ≤ 10 mg/l			
Microorganisms			LL/EL/IL50	> 100 mg/l			

Toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

Expected to be biodegradable.

12.3. Bioaccumulative potential

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Organism	Species	Exposure time	Test Type	Value	Conclusion	Test method	Source
			Log Pow	2 - 15			

The product contains at least one substance that is bioaccumulative in organisms.

12.4. Mobility in soil

The product contains at least one substance with high soil mobility.

12.5. Results of PBT and vPvB assessment

The product does not contain any PBT or vPvB substances.

12.6. Endocrine disrupting properties

None known.

12.7. Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Avoid discharge to drain or surface water. If this product as supplied becomes a waste, it meets the criteria of a hazardous waste (Dir. 2008/98/EU). Collect spills and waste in closed, leak-proof containers for disposal at the local hazardous waste site.

Category of waste:

EWC code: Depends on line of business and use, for instance 13 07 01* fuel oil and diesel

Absorbent/cloth contaminated with the product: EWC code: 15 02 02* absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number: 1202

14.4. Packing group: III

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14.2. UN proper shipping name: DIESEL FUEL

14.5. Environmental hazards:

The product must be labelled as an environmental hazard (symbol: fish and tree) in packaging sizes of more than 5 kg/l.

14.3. Transport hazard class(es): 3
Hazard label(s): 3
Hazard identification number: 30

Tunnel restriction code: D/E

Inland water ways transport (ADN)

14.1. UN number or ID number: 1202
14.2. UN proper shipping name: DIESEL FUEL

14.4. Packing group: III

14.5. Environmental hazards:

The product must be labelled as an environmental hazard (symbol: fish and tree) in packaging sizes of more than 5 kg/l.

14.3. Transport hazard class(es): 3
Hazard label(s): 3
Transport in tank vessels:

Sea transport (IMDG)

14.1. UN number or ID number: 1202
14.2. UN proper shipping name: DIESEL FUEL

14.4. Packing group: III

14.5. Environmental hazards:

The product must be labelled as a Marine Pollutant (MP) in packaging sizes of more than 5 kg/l.

14.3. Transport hazard class(es): 3
Hazard label(s): 3
EmS: F-E, S-E

Environmental Hazardous Substance Name(s):

Fuels, diesel

IMDG Code segregation group: - None -

Air transport (ICAO-TI / IATA-DGR)

14.1. UN number or ID number: 1202
14.2. UN proper shipping name: DIESEL FUEL

14.4. Packing group: III

14.5. Environmental hazards:

The product should not be labelled as an environmental hazard (symbol: fish and tree).

14.3. Transport hazard class(es): 3
Hazard label(s): 3

14.6. Special precautions for user

None.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

SECTION 15: Regulatory information

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

Special Provisions: Special care should be applied for employees under the age of 18. Young people under the age of 18 may not carry out any work causing harmful exposure to this product. Directive 2012/18/EU (Seveso), Petroleum products and alternative fuels (a) gasolines and

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naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams) (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)): Column 2: 2500 t, Column 3: 25000 t.

Covered by:

Council Directive (EC) on the protection of young people at work.

Council Directive (EC) on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding.

15.2. Chemical Safety Assessment

REACH Reg. No.	Substance name
01-0000020119-75	C8-C26 branched and linear hydrocarbons – Distillates
01-2119484664-27	Fuels, diesel

SECTION 16: Other information

Version history and indication of changes

Version	Revision date	Responsible	Changes
1.0.0	12/16/2022	Bureau Veritas HSE/JST	

Abbreviations:

DNEL: Derived No Effect Level
PNEC: Predicted No Effect Concentration
PBT: Persistent, Bioaccumulative and Toxic
vPvB: Very Persistent and Very Bioaccumulative
STOT: Specific Target Organ Toxicity

Other Information:

This safety data sheet has been prepared for and applies to this product only. It is based on our current knowledge and the information that the supplier was able to provide about the product at the time of preparation. The safety data sheet complies with applicable law on preparation of safety data sheets in accordance with 1907/2006/EC (REACH) as subsequently changed.

Training advice:

A thorough knowledge of this safety data sheet should be a prerequisite condition.

Classification method:

Calculation based on the hazards of the known components.

Hazard statements

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H350	May cause cancer.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure. (Liver., Blood., Thymus.)
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

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Supplemental hazard information

EUH066 Repeated exposure may cause skin dryness or cracking.

Country: EU

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Exposure Scenario - Worker

30000000042	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Manufacture of substance- Industrial
Use Descriptor	Sector of Use: SU 3, SU8, SU9 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 15 Environmental Release Categories: ERC1, ERC4, ESVOC SpERC 1.1.v1
Scope of process	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
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Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP with potential for aerosol generation.
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	Risk Management Measures
General risk management measures applicable to all activities	Ensure relevant staff are informed of exposure potential 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; provide regular health surveillance as appropriate; 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.

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General exposures (closed systems)	No other specific measures identified.
General exposures (open systems)	Wear suitable gloves tested to EN374.
Process sampling	No other specific measures identified.
Bulk closed loading and unloading.	Wear suitable gloves tested to EN374.
Bulk open loading and unloading.	Wear suitable gloves tested to EN374.
Equipment cleaning and maintenance	Drain down system prior to equipment opening or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Laboratory activities	No other specific measures identified.
Bulk product storage	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure
Substance is complex UVCB.	
Predominantly hydrophobic.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	2,8E+07
Fraction of Regional tonnage used locally:	0,021
Annual site tonnage (tonnes/year):	6,0E+05
Maximum daily site tonnage (kg/day):	2,0E+06
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	1,0E-02
Release fraction to wastewater from process (initial release prior to RMM):	3,0E-05
Release fraction to soil from process (initial release prior to RMM):	1,0E-04
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide	90,3

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the required removal efficiency of \geq (%)	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	94,1
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,1
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	3,3E+06
Assumed domestic sewage treatment plant flow (m ³ /d)	10.000
Conditions and Measures related to external treatment of waste for disposal	
During manufacturing no waste of the substance is generated.	
Conditions and measures related to external recovery of waste	
During manufacturing no waste of the substance is generated.	

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

Section 3.2 -Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation.	

Section 4.2 -Environment	
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.	
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.	

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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).
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Exposure Scenario - Worker

30000000043	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as an intermediate- Industrial
Use Descriptor	Sector of Use: SU 3, SU8, SU9 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 15 Environmental Release Categories: ERC6a, ESVOC SpERC 6.1a.v1
Scope of process	Use of substance as an intermediate (not related to Strictly Controlled Conditions). Includes recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
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Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP with potential for aerosol generation.
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	Risk Management Measures
General risk management measures applicable to all activities	Ensure relevant staff are informed of exposure potential 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; provide regular health surveillance as appropriate; 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.

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General exposures (closed systems)	No other specific measures identified.
General exposures (open systems)	Wear suitable gloves tested to EN374.
Process sampling	No other specific measures identified.
Bulk closed loading and unloading.	Wear suitable gloves tested to EN374.
Bulk open loading and unloading.	Wear suitable gloves tested to EN374.
Equipment cleaning and maintenance	Drain down system prior to equipment opening or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Laboratory activities	No other specific measures identified.
Bulk product storage	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure
Substance is complex UVCB.	
Predominantly hydrophobic.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	3,5E+05
Fraction of Regional tonnage used locally:	0,043
Annual site tonnage (tonnes/year):	1,5E+04
Maximum daily site tonnage (kg/day):	5,0E+04
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	1,0E-03
Release fraction to wastewater from process (initial release prior to RMM):	3,0E-05
Release fraction to soil from process (initial release prior to RMM):	1,0E-03
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	

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Treat air emission to provide a typical removal efficiency of (%)	80
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	51,7
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	94,1
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,1
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	4,1E+05
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
This substance is consumed during use and no waste of substance is generated.	
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is generated.	

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

Section 3.2 -Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	
<p>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.</p> <p>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.</p> <p>Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.</p> <p>Risk Management Measures are based on qualitative risk characterisation.</p>	

Section 4.2 -Environment	
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.	

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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).
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Exposure Scenario - Worker

300000000044	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Distribution of substance- Industrial
Use Descriptor	Sector of Use: SU 3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9, PROC 15 Environmental Release Categories: ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC 6C, ERC 6D, ERC7, ESVOC SpERC 1.1b.v1
Scope of process	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
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Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP with potential for aerosol generation.
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	Risk Management Measures
General risk management measures applicable to all activities	Ensure relevant staff are informed of exposure potential 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; provide regular health surveillance as appropriate; 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.

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General exposures (closed systems)	No other specific measures identified.
General exposures (open systems)	Wear suitable gloves tested to EN374.
Process sampling	No other specific measures identified.
Laboratory activities	No other specific measures identified.
Bulk closed loading and unloading.	Wear suitable gloves tested to EN374.
Bulk open loading and unloading.	Wear suitable gloves tested to EN374.
Drum and small package filling	Wear suitable gloves tested to EN374.
Equipment cleaning and maintenance	Drain down system prior to equipment opening or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Storage.	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure
Substance is complex UVCB.	
Predominantly hydrophobic.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	2,8E+07
Fraction of Regional tonnage used locally:	0,002
Annual site tonnage (tonnes/year):	5,6E+04
Maximum daily site tonnage (kg/day):	1,9E+05
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	1,0E-03
Release fraction to wastewater from process (initial release prior to RMM):	1,0E-06
Release fraction to soil from process (initial release prior to RMM):	1,0E-05
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	

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If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	9,6
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	94,1
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,1
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	2,9E+06
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

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

Section 3.2 -Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	
<p>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.</p> <p>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.</p> <p>Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.</p> <p>Risk Management Measures are based on qualitative risk characterisation.</p>	

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Section 4.2 -Environment

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

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

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

Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org>).

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Exposure Scenario - Worker

300000000045	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Formulation & (re)packing of substances and mixtures-Industrial
Use Descriptor	Sector of Use: SU 3, SU 10 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 14, PROC 15 Environmental Release Categories: ERC2, ESVOC SpERC 2.2.v1
Scope of process	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
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Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP with potential for aerosol generation.
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	Risk Management Measures
General risk management measures applicable to all activities	Ensure relevant staff are informed of exposure potential 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; provide regular health surveillance as appropriate; 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

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	problems that may develop.
General exposures (closed systems)	No other specific measures identified.
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 extraction ventilation at points where emissions occur. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Production or preparation or articles by tableting, compression, extrusion or pelletisation	Wear suitable gloves tested to EN374.
Drum/batch transfers	Wear suitable gloves tested to EN374.
Laboratory activities	No other specific measures identified.
Equipment cleaning and maintenance	Drain down system prior to equipment opening or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Storage.	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure
Substance is complex UVCB.	
Predominantly hydrophobic.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	2,8E+07
Fraction of Regional tonnage used locally:	0,0011
Annual site tonnage (tonnes/year):	3,0E+04
Maximum daily site tonnage (kg/day):	1,0E+05
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	

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Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements):	1,0E-02
Release fraction to wastewater from process (initial release prior to RMM):	2,0E-05
Release fraction to soil from process (initial release prior to RMM):	1,0E-04
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	60,0
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	94,1
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,1
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	6,8E+05
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

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

Section 3.2 -Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	

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SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	
<p>Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation.</p>	

Section 4.2 -Environment	
<p>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.</p>	
<p>Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.</p>	
<p>Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.</p>	
<p>Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).</p>	

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Exposure Scenario - Worker

300000000046	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel- Industrial
Use Descriptor	Sector of Use: SU 3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a, PROC 8b, PROC 16 Environmental Release Categories: ERC7, ESVOC SpERC 7.12a.v1
Scope of process	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
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Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP with potential for aerosol generation.
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	Risk Management Measures
General risk management measures applicable to all activities	Ensure relevant staff are informed of exposure potential 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; provide regular health surveillance as appropriate; 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.
Bulk transfers	Wear suitable gloves tested to EN374.

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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 system prior to equipment opening or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Storage.	Handle substance within a closed system.

Section 2.2	Control of Environmental Exposure
Substance is complex UVCB.	
Predominantly hydrophobic.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	4,5E+06
Fraction of Regional tonnage used locally:	0,34
Annual site tonnage (tonnes/year):	1,5E+06
Maximum daily site tonnage (kg/day):	5,0E+06
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	5,0E-03
Release fraction to wastewater from process (initial release prior to RMM):	1,0E-05
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater sediment.	
Onsite waste water treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	95
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	97,7
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	60,4
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	

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Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	94,1
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	97,7
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	5,5E+06
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
Combustion emissions limited by required exhaust emission controls. Waste combustion emissions considered in regional exposure assessment.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

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

Section 3.2 -Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation.	

Section 4.2 -Environment	
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.	
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.	
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.	
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).	

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Exposure Scenario - Worker

30000000047	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel- Professional
Use Descriptor	Sector of Use: SU 22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a, PROC 8b, PROC 16 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.12b.v1
Scope of process	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
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Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP with potential for aerosol generation.
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	Risk Management Measures
General risk management measures applicable to all activities	Ensure relevant staff are informed of exposure potential 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; provide regular health surveillance as appropriate; 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.
Bulk transfers	Wear suitable gloves tested to EN374.

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Drum/batch transfers	Wear suitable gloves tested to EN374.
Refueling.	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 system prior to equipment opening or maintenance. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Storage.	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure
Substance is complex UVCB.	
Predominantly hydrophobic.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	6,7E+06
Fraction of Regional tonnage used locally:	0,0005
Annual site tonnage (tonnes/year):	3,3E+03
Maximum daily site tonnage (kg/day):	9,2E+03
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	1,0E-04
Release fraction to wastewater from process (initial release prior to RMM):	1,0E-05
Release fraction to soil from process (initial release prior to RMM):	1,0E-05
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater sediment.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	8,3
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0

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Prevent discharge of undissolved substance to or recover from onsite wastewater.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	94,1
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	94,1
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,4E+05
Assumed domestic sewage treatment plant flow (m ³ /d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
Combustion emissions limited by required exhaust emission controls. Waste combustion emissions considered in regional exposure assessment.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

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

Section 3.2 -Environment	
The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.	

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Risk Management Measures are based on qualitative risk characterisation.	

Section 4.2 -Environment	
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.	
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.	
Required removal efficiency for air can be achieved using on-site technologies, either alone	

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or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org>).

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Exposure Scenario - Consumer

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SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel - Consumer
Use Descriptor	Sector of Use: SU 21 Product Categories: PC13 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.12c.v1
Scope of process	Covers consumer uses in liquid fuels.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
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Section 2.1	Control of Consumer Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure > 10 Pa
Concentration of the Substance in Mixture/Article	Unless stated otherwise.
	Covers concentrations up to 100 %
Amounts Used	
Unless stated otherwise.	
for each use event, covers amount up to (g):	37.500
covers skin contact area (cm ²):	420
Frequency and Duration of Use	
Unless stated otherwise.	
covers use up to (times/day of use):	0,143
Covers use up to (hours/event):	2

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Fuels Liquid: Automotive Refuelling.	Covers concentration up to (%): 100 %
	Covers use up to (days/year): 52 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to 210 cm ²
	For each use event, covers amount up to 37.500 g
	Covers outdoor use.
	Covers use in room size of 100 m ³
	Covers exposure up to 0,05 hours/event
Fuels Liquid, Garden Equipment - Use.	Covers concentrations up to 100 %
	covers use up to 26 day/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 750 g
	Covers outdoor use.
	Covers use in room size of 100 m ³

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	Covers exposure up to 2,00 hours/event
Fuels Liquid: Garden Equipment - Refuelling.	Covers concentrations up to 100 %
	covers use up to 26 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to 420 cm2
	For each use event, covers amount 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 hours/event

Section 2.2	Control of Environmental Exposure
Substance is complex UVCB.	
Predominantly hydrophobic.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	1,6E+07
Fraction of Regional tonnage used locally:	0,0005
Annual site tonnage (tonnes/year):	8,2E+03
Maximum daily site tonnage (kg/day):	2,3E+04
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):	1,0E-04
Release fraction to wastewater from wide dispersive use:	1,0E-05
Release fraction to soil from wide dispersive use (regional only):	1,0E-05
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	94,1
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	3,5E+05
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
Combustion emissions limited by required exhaust emission controls. Waste combustion emissions considered in regional exposure assessment.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

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

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Section 3.2 -Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4

GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 -Environment

Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org>).