SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Supersedes Date	Revision date	Revision Number
17/04/2023	23/01/2024	1

Country-Language: FIN-EN

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

1.1. Product identifier

Product Name Marine Diesel Oil DMB grade (MDODMB); Neste Marine 0.1 Co-processed (DMB)

Product Code(s) 13999
Safety data sheet 13999
Other means of identification Internal identification: 160365, 170050, 170051, 170700, 170704

Unique Formula Identifier (UFI) VP6N-WAV1-791D-R3XP

Pure substance/mixture Mixture

Contains Fuel oil, no. 2, Petroleum diesel/gas oil fraction, co-processed with renewable hydrocarbons of plant or animal origin

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

Recommended use Distribution of substance (ES01a) Formulation & (re)packing of substances and mixtures (ES02) Use as a fuel (ES012a, ES12b)

1.3. Details of the supplier of the safety data sheet

Supplier
Neste Oyj
Keilaranta 21, Espoo, P.O.B. 95, FIN-00095 NESTE, FINLAND
Tel. +358 10 45811
SDS@neste.com (chemical safety)

1.4. Emergency telephone number

Emergency Telephone No information available

Emergency Telephone - §45 - (EC)1272/2008	
Europe	**112**
Finland	+358 800 147 111, +358 9 471 977, Poison Information Centre
Sweden	När det är akut: 112, begär giftinformation. I mindre akuta fall 010-456 6700, Giftinformationscentralens direktnummer

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute toxicity - Inhalation (Vapours)	Category 4 - (H332)
Skin corrosion/irritation	Category 2 - (H315)
Carcinogenicity	Category 2 - (H351)
Specific target organ toxicity — repeated exposure	Category 2 - (H373)
Aspiration hazard	Category 1 - (H304)
Chronic aquatic toxicity	Category 2 - (H411)

2.2. Label elements

Contains Fuel oil, no. 2, Petroleum diesel/gas oil fraction, co-processed with renewable hydrocarbons of plant or animal origin

Signal word
Danger

Hazard statements
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

Precautionary Statements - EU (§28, 1272/2008)
P261 - Avoid breathing vapours
P273 - Avoid release to the environment
P280 - Wear protective gloves
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor
P331 - Do NOT induce vomiting

2.3. Other hazards

Evaporates slowly. Risk of soil and ground water contamination.

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

This product does not contain substances considered to have endocrine disrupting properties at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Fuel oil, no. 2 68476-30-2	80 - 100	01-2119475501-42	270-671-4	Aquatic Chronic 2 (H411) Asp. Tox. 1 (H304) Acute Tox. 4 (H332) STOT RE 2 (H373)	-	-	-

				Skin Irrit. 2 (H315) Carc. 2 (H351)			
Petroleum diesel/gas oil fraction, co-processed with renewable hydrocarbons of plant or animal origin -	0 - 20	01-2120091562-55	-	Aquatic Chronic 2 (H411) Asp. Tox. 1 (H304) Flam. Liq. 3 (H226) Acute Tox. 4 (H332) STOT RE 2 (H373) Skin Irrit. 2 (H315) Carc. 2 (H351)	-	-	-

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

This product does not contain candidate substances of very high concern at a concentration >=0.1% (Regulation (EC) No. 1907/2006 (REACH), Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice IF exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.

Inhalation If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Avoid contact with skin. If breathing is difficult, (trained personnel should) give oxygen. Get immediate medical attention.

Eye contact Get medical attention if irritation develops and persists. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.

Ingestion Delayed pulmonary edema may occur. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. Do NOT induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Self-protection of the first aider Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Avoid breathing vapours or mists.

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

Symptoms Irritating to skin. Harmful by inhalation. Aspiration hazard. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis. May cause redness and tearing of the eyes.

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

Note to doctors Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media	Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	Flammable. Risk of ignition. Containers may explode when heated.
Hazardous combustion products	Carbon dioxide (CO2). Carbon monoxide.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters	Prevent fire extinguishing water from contaminating surface water or the ground water system. Cool containers with flooding quantities of water until well after fire is out. Move containers from fire area if you can do it without risk. Wear positive pressure self-contained breathing apparatus (SCBA). Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Avoid breathing vapours or mists. Ensure adequate ventilation. Do not touch or walk through spilled material.
For emergency responders	Evacuate area. Prevent unauthorized access. Keep people away from and upwind of spill/leak. Take precautionary measures against static discharges. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Be aware that gases can spread at ground level (heavier than air) and pay attention to the wind direction. Flash back possible over considerable distance.

6.2. Environmental precautions

Environmental precautions	Risk of soil and ground water contamination. Avoid release to the environment. Keep out of drains, sewers, ditches and waterways. Prevent further leakage or spillage if safe to do so.

6.3. Methods and material for containment and cleaning up

Methods for containment	Stop leak if you can do it without risk. Do not touch or walk through spilled material. Keep out of drains, sewers, ditches and waterways. Risk of soil and ground water contamination. Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).
Methods for cleaning up	Pay attention to the fire and health hazards caused by the product. Take precautionary measures against static discharges. Dam up. Take up with sand, earth or other non-combustible absorbent material. Pick up and transfer to properly labelled containers.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See Section 7 for more information, See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling The product contains volatile substances which may spread in the atmosphere. Avoid breathing vapours or mists. Use only outdoors or in a well-ventilated area. Use with local exhaust ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin, eyes or clothing. During tank operations follow special instructions (risk of oxygen displacement and hydrocarbons). Use personal protection equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use spark-proof tools and explosion-proof equipment.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Flammable liquid storage. Store away from other materials. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take action to prevent static discharges. Store in a demarcated bunded area to prevent release to drains and/or watercourses. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labelled containers. Do not store near combustible materials. Store in accordance with local regulations.

7.3. Specific end use(s)

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits The individual limit values can be applied for the hydrocarbons. Diesel fuel as total hydrocarbons; ACGIH TLV®-TWA (8h) 100 mg/m^3 (IFV).

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
Fuel oil, no. 2 68476-30-2	-	2.90 mg/kg bw/day (8 h) [4] [6]	68 mg/m^3, Aerosol (8 h) [4] [6] 4300 mg/m^3, Aerosol (15 min) [4] [7]

Notes
[4] Systemic health effects.

[6] Long term.
[7] Short term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
Fuel oil, no. 2 68476-30-2	-	1.3 mg/kg bw/day (24 h)[4] [6]	20 mg/m³, Aerosol (8 h) [4] [6] 2600 mg/m³, Aerosol (15 min) [4] [7]

Notes
[4] Systemic health effects.
[6] Long term.
[7] Short term.

Predicted No Effect Concentration (PNEC)

8.2. Exposure controls

Engineering controls Provide adequate ventilation. Use personal protective equipment and/or local ventilation when needed. During tank operations follow special instructions (risk of oxygen displacement and hydrocarbons).

Personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand protection Wear suitable gloves. Impervious gloves. PPE - Glove material. :. Nitrile rubber. Polyvinyl chloride (PVC). Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Wear suitable gloves tested to EN 374. Change protective gloves regularly.

Skin and body protection Wear suitable protective clothing. Wear anti-static protective clothing if there is a risk of ignition from static electricity.

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Filter must be changed often enough. Gas and combination filter cartridges must comply with EN 14387. Wear a respirator fitted with the following cartridge:. Combination filter, type A2/P3.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls Store in a demarcated bunded area to prevent release to drains and/or watercourses.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state Liquid
Colour Yellowish Brownish
Odour Hydrocarbons.
Odour threshold No information available

Property	Values	Remarks • Method
Melting point / freezing point	- 6 - 10 °C	Pour Point (ISO 3016)
Initial boiling point and boiling range	150 - 420 °C	None known
Flammability	No data available	None known
Flammability Limit in Air		Estimated
Upper flammability or explosive limits	6 %, estimated	
Lower flammability or explosive limits	1 %, estimated	
Flash point	> 75 °C	EN ISO 2719
Autoignition temperature	~ 250 °C	None known
Decomposition temperature		None known
pH	No data available -	None known
pH (as aqueous solution)	No data available	None known
Kinematic viscosity	2 - 11 mm²/s	@ 40 °C (EN ISO 3104)
Dynamic viscosity	No data available	None known
Water solubility	0.05 g/l @ 20 °C	None known
Solubility(ies)	The product has poor water-solubility.	None known
Partition coefficient	log Kow: >= 4	None known
Vapour pressure	< 1 kPa	@ 38 °C
Relative density	<= 0.9	@ 15 °C (EN ISO 12185, ISO 3675)
Bulk density	No data available	
Liquid Density	No data available	
Relative vapour density	No data available	None known
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	

9.2. Other information

9.2.1. Information with regards to physical hazard classes

Not applicable

Oxidising properties Does not meet the criteria for classification as oxidising

9.2.2. Other safety characteristics

No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable under normal conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Heat, flames and sparks. Excessive heat.

10.5. Incompatible materials

Incompatible materials Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products None under normal use conditions.

SECTION 11: Toxicological information

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

Information on likely routes of exposure

Acute toxicity Harmful if inhaled

Numerical measures of toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Fuel oil, no. 2	> 5000 mg/kg, rat (OECD 401, 420)	> 4300 mg/kg, rabbit (OECD 434)	3.6 - 5.4 mg/L , rat (4 h, OECD 403)

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Causes skin irritation. (OECD 404). The product irritates mucous membranes and may cause abdominal discomfort if swallowed. May cause respiratory irritation.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met. (OECD 405). May cause redness and tearing of the eyes.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met. (OECD 406).

Germ cell mutagenicity Based on available data, the classification criteria are not met. (OECD 471, 475).

Carcinogenicity Suspected of causing cancer. Product may contain cracked gas oil streams. Contains a known or suspected carcinogen.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	European Union
Fuel oil, no. 2	Carc. 2

Reproductive toxicity Based on available data, the classification criteria are not met. (OECD 414).

STOT - single exposure Based on available data, the classification criteria are not met.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure. (OECD 410, 411, 413).

Aspiration hazard May be fatal if swallowed and enters airways. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain substances considered to have endocrine disrupting properties at levels of 0.1% or higher.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Fuel oil, no. 2	OECD 201, EU C.3, 72 hours, Pseudokirchneriella subcapitata, WAF: EbL50: 10 mg/l, NOEL: 1 mg/l	OECD 203, EU C.1, 96 hours, Oncorhynchus mykiss (Rainbow trout), WAF: LL_{50}: 21 mg/l, NOEL: 10 mg/l QSAR, 14 days, Oncorhynchus mykiss (Rainbow trout): NOEL: 0,08 mg/l,	QSAR, 40 hours, Micro-organisms (wastewater sludge): EL50: > 1000 mg/l NOEL: 3,22 mg/l	OECD 202, EU C.2, 48 hours, Daphnia magna, WAF: EL50: 68 mg/l, NOEL: 46 mg/l QSAR, 21 days, Daphnia magna: NOEL: 0,2 mg/l,

12.2. Persistence and degradability

Persistence and degradability The product contains volatile substances which may spread in the atmosphere. Can be photodegraded in the atmosphere.

Fuel oil, no. 2 (68476-30-2)

Method	Exposure time	Value	Results
OECD Test No. 301F: Ready Biodegradability: Manometric Respirometry Test (TG 301 F)			Inherently biodegradable.

12.3. Bioaccumulative potential

Bioaccumulation May bioaccumulate.

Component Information

12.4. Mobility in soil

Mobility in soil Evaporates slowly. The product has poor water-solubility. Product can penetrate soil until reaching the surface of ground water. The product contains substances which are bound to particulate matter and are retained in soil.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB above the threshold of declaration.

Chemical name	PBT and vPvB assessment
Fuel oil, no. 2	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain substances considered to have endocrine disrupting properties at levels of 0.1% or higher.

12.7. Other adverse effects

Product causes fouling, and direct contact produces harmful effects e.g. to birds and vegetation. Adsorbed hydrocarbon residues can be harmful to sediment organisms.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. When handling waste, the safety precautions applying to handling of the product should be considered.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

SECTION 14: Transport information

IMDG

14.1 UN number or ID number	UN1202
14.2 UN proper shipping name	UN1202 GAS OIL
14.3 Transport hazard class(es)	3
14.4 Packing group	III
14.5 Environmental hazard	Marine pollutant
14.6 Special precautions for user	.
14.7 Maritime transport in bulk	Not applicable

according to IMO instruments

RID

14.1 UN number or ID number	UN1202
14.2 UN proper shipping name	UN1202 GAS OIL
14.3 Transport hazard class(es)	3
14.4 Packing group	III
14.5 Environmental hazard	Marine pollutant
14.6 Special precautions for user	.
Classification code	30

ADR

14.1 UN number or ID number	UN1202
14.2 UN proper shipping name	UN1202 GAS OIL
14.3 Transport hazard class(es)	3
14.4 Packing group	III
14.5 Environmental hazard	Marine pollutant
14.6 Special precautions for user	
Classification code	30
Tunnel restriction code	(D/E)

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SECTION 15: Regulatory information

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

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorisations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants

Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

P5a - FLAMMABLE LIQUIDS
P5b - FLAMMABLE LIQUIDS
P5c - FLAMMABLE LIQUIDS
E2 - Hazardous to the Aquatic Environment in Category Chronic 2

Named dangerous substances per Seveso Directive (2012/18/EU)

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

Other Regulations Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). Classification according to Regulation (EC) No. 1272/2008 [CLP].

15.2. Chemical safety assessment

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

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3
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

Legend
SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Supersedes Date 17/04/2023

Revision date 23/01/2024

Reason for revision This is the first issue. (new SDS software has been introduced) Updated, sections: 9

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)
Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Exposure scenario
Formulation & (re)packing of Substances and Mixtures

Identification

Product name	Fuel oil, no. 2
CAS number	68476-30-2
Version number	2017
Es reference	ES02

1. Title of exposure scenario

Main title	Formulation & (re)packing of Substances and Mixtures
Process scope	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

Environment

Environmental release category	ERC2 Formulation into mixture
SPERC	ESVOC SPERC 2.2.v1

Worker

Process category	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 and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC14 Tabletting, compression, extrusion, pelletisation, granulation PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 280 000 tonnes/year
Fraction of Regional tonnage used locally: 0.11
Annual site tonnage: 30 000 tonnes
Maximum daily site tonnage: 100 tonne/day

Frequency and duration of use

Continuous release.
Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): 0,01
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.00002
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.0001

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice	Common practices vary across sites, thus conservative process release estimates used. Risk from environmental exposure is driven by freshwater sediment.
STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.2% Removal efficiency (total): 95.2% Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 440 tonne/day Assumed domestic sewage treatment plant flow (m^3/day): 2000.

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

Air	Treat air emission to provide the required removal efficiency of 0%.
Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 78.9. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required. Prevent discharge of undissolved substance to or recover from onsite waste water.
Soil	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method	External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid With potential for aerosol generation
Vapour pressure	Vapour pressure < 0.5 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Formulation & (re)packing of Substances and Mixtures

Setting	Assumes a good basic standard of occupational hygiene is implemented.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	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 clear 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.

Risk management measures

Formulation & (re)packing of Substances and Mixtures

General exposures (closed systems)
Handle substance within a closed system.
.
General exposures (open systems)
Wear suitable gloves tested to EN374.
.
Batch processes at elevated temperatures
Provide extract ventilation to points where emissions occur.
.
Process sampling
No other specific measures identified.
.
Bulk transfers
Handle substance within a closed system.
Wear suitable gloves tested to EN374.
.
Drum/batch transfers
Use drum pumps or carefully pour from container.
Wear chemically-resistant gloves (tested to EN374) in combination with ‘basic’ employee training.
.
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.
.
Production of preparations or articles by tabletting, compression, extrusion, pelletisation
Wear suitable gloves tested to EN374.
.
Drum and small package filling
Wear suitable gloves tested to EN374.
.
Laboratory activities
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
Handle substance within a closed system.

3. Exposure estimation (Environment 1)

Assessment method

Used Petrorisk model. (Hydrocarbon Block Method)

Risk-driving RCR - air compartment driven RCR(air) ≤ 0.011
Risk-driving RCR - water compartment driven RCR(water) ≤ 0.23

4. Guidance to check compliance with the exposure scenario (Environment 1)

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 onsite 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 estimation (Health 1)

Assessment method

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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.

Exposure scenario
Distribution of Substance

Identification

Product name	Fuel oil, no. 2
CAS number	68476-30-2
Version number	2017
Es reference	ES01a

1. Title of exposure scenario

Main title	Distribution of Substance
Process scope	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.

Environment

Environmental release category	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
SPERC	ESVOC SPERC 1.1b.v1

Worker

Process category	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 and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 280 000 tonnes/year
Fraction of Regional tonnage used locally: 0.002
Annual site tonnage: 560 tonnes
Maximum daily site tonnage: 28 tonne/day

Frequency and duration of use

Continuous release.
Emission days: 20 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.001
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.000001
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0.00001

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice	Common practices vary across sites, thus conservative process release estimates used. Risk from environmental exposure is driven by freshwater sediment.

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

Air	Treat air emission to provide a typical removal efficiency of 90%.
Water	No wastewater treatment required.
Soil	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method	External recovery and recycling of waste should comply with applicable local and/or national regulations.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid With potential for aerosol generation
Vapour pressure	Vapour pressure < 0.5 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Setting	Assumes a good basic standard of occupational hygiene is implemented.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Distribution of Substance

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures

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 clear 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.

Risk management measures

General exposures (closed systems)
Handle substance within a closed system.
.
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
Handle substance within a closed system.
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 and flush system prior to equipment break-in or maintenance.
Wear chemically-resistant gloves (tested to EN374) in combination with ‘basic’ employee training.
.
Storage
Handle substance within a closed system.

3. Exposure estimation (Environment 1)

Assessment method

Used Petrorisk model. (Hydrocarbon Block Method)

Risk-driving RCR - air compartment driven RCR(air) ≤ 0.00013 Risk-driving RCR - water compartment driven RCR(water) ≤ 0.0032

4. Guidance to check compliance with the exposure scenario (Environment 1)

Distribution of Substance

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 onsite 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 estimation (Health 1)

Assessment method

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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.

Exposure scenario
Use as a Fuel - Industrial

Identification

Product name	Fuel oil, no. 2
CAS number	68476-30-2
Version number	2017
Es reference	ES12a

1. Title of exposure scenario

Main title	Use as a Fuel - Industrial
Process scope	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

Environment

Environmental release category	ERC7 Use of functional fluid at industrial site
SPERC	ESVOC SPERC 7.12a.v1

Worker

Process category	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 and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC16 Use of fuels

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 47 000 tonnes/year
Fraction of Regional tonnage used locally: 1
Annual site tonnage: 47 000 tonnes
Maximum daily site tonnage: 160 tonne/day

Frequency and duration of use

Continuous release.
Emission days: 300 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from process (initial release prior to RMM): 0.005
Emission factor - water	Release fraction to wastewater from process (initial release prior to RMM): 0.00001

Use as a Fuel - Industrial

Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice	Common practices vary across sites, thus conservative process release estimates used. Risk from environmental exposure is driven by freshwater sediment.
STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.2% Removal efficiency (total): 95.2% Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 880 tonne/day Assumed domestic sewage treatment plant flow (m³/day): 2000.

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

Air	Treat air emission to provide a typical removal efficiency of 95%.
Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 73.2. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Soil	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment. External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method	This substance is consumed during use and no waste of the substance is generated.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid With potential for aerosol generation
Vapour pressure	Vapour pressure < 0.5 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Setting	Assumes a good basic standard of occupational hygiene is implemented.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Organisational measures to prevent/limit releases, dispersion and exposure

Use as a Fuel - Industrial

Organisational measures

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 clear 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.

Risk management measures

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
Handle substance within a closed system.

3. Exposure estimation (Environment 1)

Assessment method

Used Petrorisk model. (Hydrocarbon Block Method)

Risk-driving RCR - air compartment driven RCR(air) ≤ 0.00054
Risk-driving RCR - water compartment driven RCR(water) ≤ 0.18

4. Guidance to check compliance with the exposure scenario (Environment 1)

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 onsite 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 estimation (Health 1)

Assessment method

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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.

Exposure scenario
Use as a Fuel - Professional

Identification

Product name	Fuel oil, no. 2
CAS number	68476-30-2
Version number	2017
Es reference	ES12b

1. Title of exposure scenario

Main title	Use as a Fuel - Professional
Process scope	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

Environment

Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
SPERC	ESVOC SPERC 9.12b.v1

Worker

Process category	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 and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC16 Use of fuels

2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Substance is complex UVCB. Predominantly hydrophobic.

Amounts used

Fraction of EU tonnage used in region: 0.1
Regional use tonnage: 83 000 tonnes/year
Fraction of Regional tonnage used locally: 0.0005
Annual site tonnage: 42 tonnes
Maximum daily site tonnage: 0.11 tonne/day

Frequency and duration of use

Continuous release.
Emission days: 365 days/year

Other given operational conditions affecting environmental exposure

Emission factor - air	Release fraction to air from wide dispersive use (regional only): 0.0001
Emission factor - water	Release fraction to wastewater from wide dispersive use: 0.00001

Use as a Fuel - Professional

Emission factor - soil	Release fraction to soil from wide dispersive use (regional only): 0.00001

Environmental factors not influenced by risk management measures

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

Risk management measures

Good practice	Common practices vary across sites, thus conservative process release estimates used. Risk from environmental exposure is driven by fresh water.
STP details	Estimated substance removal from wastewater via domestic sewage treatment: 95.2% Removal efficiency (total): 95.2% Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 300 tonne/day Assumed domestic sewage treatment plant flow (m^3/day): 2000.

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

Air	Not determined.
Water	No wastewater treatment required.
Soil	Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to external treatment of waste for disposal

Waste treatment	Combustion emissions limited by required exhaust emission controls. Combustion emissions considered in regional exposure assessment. External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery method	This substance is consumed during use and no waste of the substance is generated.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid With potential for aerosol generation
Vapour pressure	Vapour pressure < 0.5 kPa at STP.
Concentration details	Covers percentage substance in the product up to 100% (unless stated differently).

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Other given operational conditions affecting workers exposure

Setting	Assumes a good basic standard of occupational hygiene is implemented.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Organisational measures to prevent/limit releases, dispersion and exposure

Use as a Fuel - Professional

Organisational measures

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 clear 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.

Risk management measures

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
Handle substance within a closed system.

3. Exposure estimation (Environment 1)

Assessment method

Used Petrorisk model. (Hydrocarbon Block Method)

Risk-driving RCR - air compartment driven RCR(air) ≤ 0.00013
Risk-driving RCR - water compartment driven RCR(water) ≤ 0.00038

4. Guidance to check compliance with the exposure scenario (Environment 1)

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 onsite 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).

Use as a Fuel - Professional

3. Exposure estimation (Health 1)

Assessment method

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. Available hazard data do not support the need for a DNEL to be established for other health effects. Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

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.