



SAFETY DATA SHEET

Neste Tempora Non-Road Diesel; Neste Pro Non-Road Diesel; MGODMA; DMA Barge; Neste Marine 0.1 Co-processed (DMA)

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

1.1. Product identifier

Product name	Neste Tempora Non-Road Diesel; Neste Pro Non-Road Diesel; MGODMA; DMA Barge; Neste Marine 0.1 Co-processed (DMA)
Product number	ID 13779
Internal identification	160041, 160051, 160055, 160061, 160071; 160350, 160360, 160370, 160205, 160216; 160364; 160670; 160376, 160377, 160361, 160207, 160215
Synonyms; trade names	Previous product name: Diesel for non-road use; Neste light fuel oil for heating and non-road use; MGODMA; DMA Barge
UFI	UFI: 7QWY-XPC3-6812-AW54

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

Identified uses	Use as a fuel (ES12a, ES12b, ES12c)
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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)
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1.4. Emergency telephone number

Emergency telephone	+61 2 9186 1132, Chemwatch: International Emergency Response Phone Number
National emergency telephone number	+358 800 147 111, +358 9 471 977, Poison Information Centre

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification EC 1272/2008 (SI 2019 No. 720)

Physical hazards	Flam. Liq. 3 - H226
Health hazards	Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Carc. 2 - H351 STOT RE 2 - H373 Asp. Tox. 1 - H304
Environmental hazards	Aquatic Chronic 2 - H411

2.2. Label elements

Hazard pictograms



Signal word

Danger

Neste Tempera Non-Road Diesel; Neste Pro Non-Road Diesel; MGODMA; DMA Barge; Neste Marine 0.1 Co-processed (DMA)

Hazard statements	H226 Flammable liquid and vapour. H332 Harmful if inhaled. H315 Causes skin irritation. H351 Suspected of causing cancer. H373 May cause damage to organs through prolonged or repeated exposure. H304 May be fatal if swallowed and enters airways. 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. P273 Avoid release to the environment. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. P302+P352 IF ON SKIN: Wash with plenty of water. P331 Do NOT induce vomiting. P261 Avoid breathing vapours.
Contains	Fuels, diesel, Renewable hydrocarbons (diesel type fraction), Petroleum diesel/gas oil fraction, co-processed with renewable hydrocarbons of plant or animal origin

2.3. Other hazards

Other hazards	Evaporates slowly. Risk of soil and ground water contamination. This product does not contain substances considered to have endocrine disrupting properties at levels of 0.1% or higher.
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SECTION 3: Composition/information on ingredients

3.2. Mixtures

Fuels, diesel	≥ 60 %
CAS number: 68334-30-5	EC number: 269-822-7
Classification	
Flam. Liq. 3 - H226	
Acute Tox. 4 - H332	
Skin Irrit. 2 - H315	
Carc. 2 - H351	
STOT RE 2 - H373	
Asp. Tox. 1 - H304	
Aquatic Chronic 2 - H411	
Renewable hydrocarbons (diesel type fraction)	≤ 50 %
CAS number: —	
Classification	
Asp. Tox. 1 - H304	

Neste Tempera Non-Road Diesel; Neste Pro Non-Road Diesel; MGODMA; DMA Barge; Neste Marine 0.1 Co-processed (DMA)

Petroleum diesel/gas oil fraction, co-processed with renewable hydrocarbons of plant or animal origin	0 - 10 %
CAS number: —	
Classification Flam. Liq. 3 - H226 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Carc. 2 - H351 STOT RE 2 - H373 Asp. Tox. 1 - H304 Aquatic Chronic 2 - H411	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition comments	Mixture of renewable raw material fuel, petroleum product and additives. Contains kerosine streams and straight-run and hydrocracked gas oil streams.
Other information	Renewable hydrocarbons (diesel type fraction):, Identity outside the EU (CAS number and name of the substance):, Alkanes, C10-20-branched and linear, CAS 928771-01-1., REACH registration number:., Fuels, diesel: REACH 01-2119484664-27-XXXX, Renewable hydrocarbons (diesel type fraction): REACH 01-2119450077-42-XXXX, Petroleum diesel/gas oil fraction, co-processed with renewable hydrocarbons of plant or animal origin: REACH 01-2120091562-55-XXXX

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Remove person to fresh air and keep comfortable for breathing. Get medical attention if symptoms are severe or persist.
Ingestion	Do not induce vomiting. Get medical attention immediately.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation persists after washing.
Eye contact	Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.

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

General information	Irritating to skin. May irritate eyes. Harmful by inhalation. Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.
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4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water spray, foam, dry powder or carbon dioxide.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Neste Tempera Non-Road Diesel; Neste Pro Non-Road Diesel; MGODMA; DMA Barge; Neste Marine 0.1 Co-processed (DMA)

Specific hazards	Flammable liquid and vapour. Containers can burst violently or explode when heated, due to excessive pressure build-up.
Hazardous combustion products	Carbon dioxide (CO ₂). Carbon monoxide (CO).
5.3. Advice for firefighters	
Protective actions during firefighting	Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid inhalation of vapours and contact with skin and eyes. Wear adequate protective equipment at all operations.
For emergency responders	Prevent unauthorized access. Vapours are heavier than air and may spread near ground and travel a considerable distance to a source of ignition and flash back. Eliminate all ignition sources if safe to do so. Take precautionary measures against static discharge.

6.2. Environmental precautions

Environmental precautions	Avoid release to the environment. Stop leak if safe to do so. Avoid the spillage or runoff entering drains, sewers or watercourses. Contain spillage with sand, earth or other suitable non-combustible material. Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air). Risk of soil and ground water contamination.
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6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Immediately start clean-up of the liquid and contaminated soil. Small Spillages: Absorb spillage with sand or other inert absorbent. Pay attention to the fire and health hazards caused by the product.
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6.4. Reference to other sections

Reference to other sections	For personal protection, see Section 8.
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions	The product contains volatile substances which may spread in the atmosphere. Avoid heat, flames and other sources of ignition. Take precautionary measures against static discharges. Use only outdoors or in a well-ventilated area. Avoid inhalation of vapours and contact with skin and eyes. Use personal protective equipment and/or local ventilation when needed. Do not eat, drink or smoke when using this product. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. During tank operations follow special instructions (risk of oxygen displacement and hydrocarbons).
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7.2. Conditions for safe storage, including any incompatibilities

Storage precautions	Flammable liquid storage. Store in accordance with local regulations. Store in a demarcated bunded area to prevent release to drains and/or watercourses. Only store in correctly labelled containers. Use containers made of the following materials: Mild steel. Stainless steel.
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7.3. Specific end use(s)

Specific end use(s)	Not known.
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Neste Tempera Non-Road Diesel; Neste Pro Non-Road Diesel; MGDMA; DMA Barge; Neste Marine 0.1 Co-processed (DMA)

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Ingredient comments	The individual limit values can be applied for the hydrocarbons. Diesel fuel as total hydrocarbons; ACGIH TLV®-TWA (8h) 100 mg/m ³ (IFV).
PNEC	Not available.

Fuels, diesel (CAS: 68334-30-5)

DNEL	Workers - Inhalation; Short term systemic effects: 4300 mg/m ³ , (15 min), Aerosol Workers - Inhalation; Long term systemic effects: 68 mg/m ³ , (8h), Aerosol Workers - Dermal; Long term systemic effects: 2,9 mg/kg/day, (8h) Consumer - Inhalation; Short term systemic effects: 2600 mg/m ³ , (15 min), Aerosol Consumer - Inhalation; Long term systemic effects: 20 mg/m ³ , (24h), Aerosol Consumer - Dermal; Long term systemic effects: 1,3 mg/kg/day, (24h)
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Renewable hydrocarbons (diesel type fraction)

DNEL	Workers - Inhalation; Long term systemic effects: 147 mg/m ³ Workers - Dermal; Long term systemic effects: 42 mg/kg/day Consumer - Inhalation; Long term systemic effects: 94 mg/m ³ Consumer - Dermal; Long term systemic effects: 18 mg/kg/day
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8.2. Exposure controls

Appropriate engineering controls	Provide adequate ventilation. Use personal protective equipment and/or local ventilation when needed. Handle in accordance with good industrial hygiene and safety practice. During tank operations follow special instructions (risk of oxygen displacement and hydrocarbons).
Eye/face protection	Spectacles.
Hand protection	Wear protective gloves. It is recommended that gloves are made of the following material: Nitrile rubber. Polyvinyl chloride (PVC). The breakthrough time for any glove material may be different for different glove manufacturers. Protective gloves according to standard EN 374. Change protective gloves regularly.
Other skin and body protection	Wear anti-static protective clothing if there is a risk of ignition from static electricity.
Respiratory protection	Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit. Wear a respirator fitted with the following cartridge: Combination filter, type A2/P3. Filter must be changed often enough. Gas and combination filter cartridges suitable for intended use should be used.
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

Appearance	Liquid.
Colour	Red.
Odour	Hydrocarbons. Mild.
Odour threshold	-
pH	-

Neste Tempera Non-Road Diesel; Neste Pro Non-Road Diesel; MGODMA; DMA Barge; Neste Marine 0.1 Co-processed (DMA)

Melting point	Cloud point $\leq 0^{\circ}\text{C}$
Initial boiling point and range	150...370 $^{\circ}\text{C}$ (EN ISO 3405)
Flash point	$> 55^{\circ}\text{C}$ (EN ISO 2719)
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: 1 % Estimated value. Upper flammable/explosive limit: 6 % Estimated value.
Vapour pressure	$< 1 \text{ kPa @ } 40^{\circ}\text{C}$
Vapour density	-
Relative density	0,80...0,85 @ 15/4 $^{\circ}\text{C}$ (EN ISO 12185)
Solubility(ies)	The product has poor water-solubility. $< 50 \text{ mg/l @ } 20^{\circ}\text{C}$
Partition coefficient	log Kow: > 3
Auto-ignition temperature	$\sim 240^{\circ}\text{C}$ Estimated value.
Decomposition Temperature	-
Viscosity	Kinematic viscosity $\leq 4,5 \text{ mm}^2/\text{s @ } 40^{\circ}\text{C}$
Explosive properties	Not considered to be explosive.
Oxidising properties	Does not meet the criteria for classification as oxidising.
9.2. Other information	
Other information	Not known.

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 at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions No potentially hazardous reactions known.

10.4. Conditions to avoid

Conditions to avoid Keep away from heat, sparks and open flame.

10.5. Incompatible materials

Materials to avoid Oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Does not decompose when used and stored as recommended.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects Harmful if inhaled.

Acute toxicity - inhalation

Neste Tempera Non-Road Diesel; Neste Pro Non-Road Diesel; MGODMA; DMA Barge; Neste Marine 0.1 Co-processed (DMA)

ATE inhalation (vapours mg/l) 15.71

Skin corrosion/irritation

Skin corrosion/irritation Fuels, diesel: Irritating to skin. (OECD 404) Renewable hydrocarbons (diesel type fraction): Not classified. (EC B4) The product irritates mucous membranes and may cause abdominal discomfort if swallowed. May cause respiratory irritation.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met. (OECD 405, EC B5)

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met. (OECD 406, EC B6)

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met. (OECD 471, EC B10, B13/14, B17)

Genotoxicity - in vivo

Based on available data the classification criteria are not met. Fuels, diesel: (OECD 475)

Carcinogenicity

Carcinogenicity Suspected of causing cancer. Fuels, diesel: Product may contain cracked gas oil streams. Contains a substance/a group of substances which may cause cancer.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met. Renewable hydrocarbons (diesel type fraction): (OECD 416)

Reproductive toxicity - development

Based on available data the classification criteria are not met. Fuels, diesel: (OECD 414)

Specific target organ toxicity - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Fuels, diesel: May cause damage to organs through prolonged or repeated exposure. (OECD 410, 411, 413) Renewable hydrocarbons (diesel type fraction): Not classified. (OECD 408)

Aspiration hazard

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

General information

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

Toxicological information on ingredients.

Fuels, diesel

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ > 5000 mg/kg, Oral, Rat (OECD 401, 420)

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ > 4300 mg/kg, Dermal, Rabbit (OECD 434)

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC₅₀ 3,6 - 5,4 mg/l, Inhalation, (4h), Rat (OECD 403)

Neste Tempera Non-Road Diesel; Neste Pro Non-Road Diesel; MGODMA; DMA Barge; Neste Marine 0.1 Co-processed (DMA)

ATE inhalation (vapours mg/l) 11.0

Renewable hydrocarbons (diesel type fraction)

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ >2000 mg/kg, Oral, Rat (EC B1 tris)

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ > 2000 mg/kg, Dermal, Rat (EC B3)

SECTION 12: Ecological information

12.1. Toxicity

Toxicity Toxic to aquatic life with long lasting effects.

Ecological information on ingredients.

Fuels, diesel

Acute aquatic toxicity

Acute toxicity - fish LL₅₀, 96 hours: 21 mg/l, Oncorhynchus mykiss (Rainbow trout)
NOEL, 96 hours: 10 mg/l, Oncorhynchus mykiss (Rainbow trout)
WAF (OECD 203, EC C.1)

Acute toxicity - aquatic invertebrates EL50, 48 hours: 68 mg/l, Daphnia magna
NOEL, 48 hours: 46 mg/l, Daphnia magna
WAF (OECD 202, EC C.2)

Acute toxicity - aquatic plants EbL50, 72 hours: 10 mg/l, Pseudokirchneriella subcapitata
NOEL, 72 hours: 1 mg/l, Pseudokirchneriella subcapitata
WAF (OECD 201, EC C.3)

Acute toxicity - microorganisms EL50, 40 hours: > 1000 mg/l, Micro-organisms (wastewater sludge)
NOEL, 40 hours: 3,22 mg/l, Micro-organisms (wastewater sludge)
(QSAR)

Chronic aquatic toxicity

Chronic toxicity - fish early life stage NOEL, 14 days: 0,08 mg/l, Oncorhynchus mykiss (Rainbow trout)
(QSAR)

Chronic toxicity - aquatic invertebrates NOEL, 21 days: 0,2 mg/l, Daphnia magna
(QSAR)

Renewable hydrocarbons (diesel type fraction)

Acute aquatic toxicity

Acute toxicity - fish LL₅₀, 96 hours: > 1000 mg/l,
WAF (OECD 203)

Acute toxicity - aquatic invertebrates EL50, 48 hours: > 100 mg/l,
WAF (OECD 202)

Acute toxicity - aquatic plants EL50, 72 hours: > 100 mg/l, Algae
WAF (OECD 201)

Neste Tempera Non-Road Diesel; Neste Pro Non-Road Diesel; MGODMA; DMA Barge; Neste Marine 0.1 Co-processed (DMA)

Acute toxicity - microorganisms EC₅₀, 30-180 minutes: > 1000 mg/l, Micro-organisms (wastewater sludge) (OECD 209)

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates NOEC, 21 days: 1 mg/l,
LOEC, 21 days: 3,2 mg/l,
WAF (OECD 211)
Sediment organisms
NOEC, 10 days: 373 mg/kg,
LOEC, 10 days: 1165 mg/kg,
LC₅₀, 10 days: 1200 mg/kg,
(OSPAR Protocols, Part A: Sediment Bioassay, 2005)

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.

Stability (hydrolysis) No significant reaction in water.

Ecological information on ingredients.

Fuels, diesel

Biodegradation Inherently biodegradable.
(OECD 301F)

Renewable hydrocarbons (diesel type fraction)

Biodegradation Rapidly degradable
(OECD 301B).

12.3. Bioaccumulative potential

Bioaccumulative potential Possibly bioaccumulative.

Partition coefficient log K_{ow}: > 3

12.4. Mobility in soil

Mobility 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

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

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.

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

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Neste Tempera Non-Road Diesel; Neste Pro Non-Road Diesel; MGODMA; DMA Barge; Neste Marine 0.1 Co-processed (DMA)

Disposal methods	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out.
Waste class	The waste code classification is to be carried out according to the European Waste Catalogue (EWC). For example: 13 07 01 fuel oil and diesel.

SECTION 14: Transport information

Sea transport notes	This cargo is considered an Energy-rich fuel and effective 1 January 2019 should be carried subject to Annex I of MARPOL, see Annex 12 of MEPC.2/Circ.24. Please also refer to MEPC.1/Circ.879 - GUIDELINES FOR THE CARRIAGE OF ENERGY-RICH FUELS AND THEIR BLENDS
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14.1. UN number

UN No. (ADR/RID) 1202

14.2. UN proper shipping name

Proper shipping name (ADR/RID) UN 1202 HEATING OIL, LIGHT

14.3. Transport hazard class(es)

ADR/RID class 3

14.4. Packing group

ADR/RID packing group III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
MARINE POLLUTANT

14.6. Special precautions for user

Tunnel restriction code (D/E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Bulk (MARPOL 73/78, Annex I): Energy-rich fuels

SECTION 15: Regulatory information

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

National regulations	EU regulatory references for the safety data sheet: Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
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15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

Neste Tempera Non-Road Diesel; Neste Pro Non-Road Diesel; MGODMA; DMA Barge; Neste Marine 0.1 Co-processed (DMA)

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	ATE = Acute Toxicity Estimate ACGIH = American Conference of Governmental Industrial Hygienists TLV = Treshold Limit Value TWA = Time-Weighted Average DNEL = Derived No-Effect Level PNEC = Predicted No-Effect Concentration NOEL = No Observed Effect Level WAF = Water Accommodated Fraction
Key literature references and sources for data	Regulations, databases, literature, own research. CONCAWE Report 22/20: Hazard classification and labelling of petroleum substances in the EEA - 2020. Chemical Safety Report Fuels, diesel, 2020. Chemical Safety Report Renewable hydrocarbons (diesel type fraction), 2016.
Training advice	DO NOT SIPHON PRODUCT BY MOUTH SUCTION.
Revision comments	Updated, sections: 2.3, 11.1, 12.6, 15.1
Revision date	17/04/2023
Supersedes date	15/08/2022
SDS number	5676
Hazard statements in full	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.
Use Descriptor Codes, Industrial uses	Use as a fuel, (PROC: 1, 2, 8a, 8b, 16, 28; ERC: 7)
Use Descriptor Codes, Professional uses	Use as a fuel, (PROC: 1, 2, 8a, 8b, 16, 28; ERC: 9a, 9b)
Use Descriptor Codes, Consumer uses	Use as a fuel, (PC 13; ERC: 9a, 9b)

Exposure scenario

Use as a Fuel - Industrial

Identification

Product name	Fuels, diesel
CAS number	68334-30-5
Version number	2020
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
 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
 PROC28 Manual maintenance (cleaning and repair) of machinery

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: 3 700 000 tonnes/year
 Fraction of Regional tonnage used locally: 0.4
 Annual site tonnage: 1 500 000 tonnes
 Maximum daily site tonnage: 5 000 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): 1.1E-06
Emission factor - soil	Release fraction to soil from process (initial release prior to RMM): 0

Use as a Fuel - Industrial

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: 94.6%
Removal efficiency (total): 94.6%
Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 5 200 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 (%): ≥ 94.4. 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 Covers use at ambient temperatures. (unless stated differently)

Organisational measures to prevent/limit releases, dispersion and exposure

Use as a Fuel - Industrial

Organisational measures

General measures (skin irritants) Ensure there is no direct skin contact with product. Identify potential areas for indirect skin contact. Wear suitable gloves tested to EN374. Clear spills immediately. Wash off any skin contamination immediately. For further specification, refer to section 8 of the SDS.

General measures (flammability) For measures to control risks from physicochemical properties, refer to main body of the SDS, section 7 and/or 8.

General measures (aspiration hazard) Do not ingest. If swallowed, then seek immediate medical assistance.

General measures applicable to all activities Minimise exposure using measures such as contained and enclosed systems, properly designed and maintained dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure. Wear suitable coveralls to prevent exposure to the skin. Wear suitable gloves tested to EN374. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear spills immediately. Dispose of this material and its container at hazardous or special waste collection point. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance.

Risk management measures

Use as a Fuel - Industrial

Bulk transfers

Dedicated facility

(PROC 8b)

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.

For further specification, refer to section 8 of the SDS.

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Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Ensure no splashing occurs during transfer.

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Drum/batch transfers

Dedicated facility

(PROC 8b)

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.

For further specification, refer to section 8 of the SDS.

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Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Ensure no splashing occurs during transfer.

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General exposures (closed systems)

(PROC 1, PROC 2)

Handle substance within a closed system.

Sample via a closed loop or other system to avoid exposure.

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Use as a fuel

(closed systems)

(PROC 16)

Handle substance within a closed system.

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Equipment cleaning and maintenance

(PROC 8a, PROC 28)

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.

If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.

For further specification, refer to section 8 of the SDS.

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Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Wear suitable coveralls to prevent exposure to the skin.

Clear spills immediately.

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Storage

(PROC 1, PROC 2)

Use as a Fuel - Industrial

Store substance within a closed system.

3. Exposure estimation (Environment 1)

Assessment method	Used Petrorisk model. (Hydrocarbon Block Method) Risk-driving RCR - air compartment driven $RCR(\text{air}) \leq 0.059$ Risk-driving RCR - water compartment driven $RCR(\text{water}) \leq 0.97$
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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
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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. 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. Available hazard data do not enable the derivation of a DNEL for aspiration effects. Risk Management Measures are based on qualitative risk characterisation.

Exposure scenario

Use as a Fuel - Professional

Identification

Product name	Fuels, diesel
CAS number	68334-30-5
Version number	2020
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)
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SPERC	ESVOC SPERC 9.12b.v1
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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 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 PROC28 Manual maintenance (cleaning and repair) of machinery
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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: 6 800 000 tonnes/year
Fraction of Regional tonnage used locally: 0.0005
Annual site tonnage: 3 400 tonnes
Maximum daily site tonnage: 9.3 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
Emission factor - soil	Release fraction to soil from wide dispersive use (regional only): 0.00001

Use as a Fuel - Professional

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: 94.6%
Removal efficiency (total): 94.6%
Maximum allowable site tonnage (M_{safe}), based on release following total wastewater treatment removal: 1.1E+05 kg/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 Not determined.

Water Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): ≥ 38.8. 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 Covers use at ambient temperatures. (unless stated differently)

Organisational measures to prevent/limit releases, dispersion and exposure

Use as a Fuel - Professional

Organisational measures

General measures (skin irritants) Ensure there is no direct skin contact with product. Identify potential areas for indirect skin contact. Wear suitable gloves tested to EN374. Clear spills immediately. Wash off any skin contamination immediately. For further specification, refer to section 8 of the SDS.

General measures (flammability) For measures to control risks from physicochemical properties, refer to main body of the SDS, section 7 and/or 8.

General measures (aspiration hazard) Do not ingest. If swallowed, then seek immediate medical assistance.

General measures applicable to all activities Minimise exposure using measures such as contained and enclosed systems, properly designed and maintained dedicated facilities and suitable general/local exhaust ventilation. Drain down and flush system prior to equipment break-in or maintenance. Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure. Wear suitable coveralls to prevent exposure to the skin. Wear suitable gloves tested to EN374. Wear respiratory protection when its use is identified for certain contributing scenarios. Clear spills immediately. Dispose of this material and its container at hazardous or special waste collection point. Ensure control measures are regularly inspected and maintained. Consider the need for risk based health surveillance.

Risk management measures

Use as a Fuel - Professional

Bulk transfers

Dedicated facility

(PROC 8b)

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.

For further specification, refer to section 8 of the SDS.

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Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Ensure no splashing occurs during transfer.

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Drum/batch transfers

Dedicated facility

(PROC 8b)

Use drum pumps.

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.

For further specification, refer to section 8 of the SDS.

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Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Ensure no splashing occurs during transfer.

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Refuelling

(PROC 8b)

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.

For further specification, refer to section 8 of the SDS.

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Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Ensure no splashing occurs during transfer.

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General exposures (closed systems)

(PROC 1, PROC 2)

Handle substance within a closed system.

Sample via a closed loop or other system to avoid exposure.

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Use as a fuel

(closed systems)

(PROC 16)

Handle substance within a closed system.

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Equipment cleaning and maintenance

(PROC 8a, PROC 28)

Drain down and flush system prior to equipment break-in or maintenance.

Use as a Fuel - Professional

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

If skin contamination is expected to extend to other parts of the body, then these body parts should also be protected with impervious garments in a manner equivalent to those described for the hands.

For further specification, refer to section 8 of the SDS.

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Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply.

Wear suitable coveralls to prevent exposure to the skin.

Clear spills immediately.

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Storage

(PROC 1, PROC 2)

Store substance within a closed system.

3. Exposure estimation (Environment 1)

Assessment method

Used Petrorisk model. (Hydrocarbon Block Method)

Risk-driving RCR - air compartment driven $RCR(\text{air}) \leq 0.022$

Risk-driving RCR - water compartment driven $RCR(\text{water}) \leq 0.089$

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

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. 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. Available hazard data do not enable the derivation of a DNEL for aspiration effects. Risk Management Measures are based on qualitative risk characterisation.

Exposure scenario

Use as a Fuel - Consumer

Identification

Product name	Fuels, diesel
CAS number	68334-30-5
Version number	2020
Es reference	ES12c

1. Title of exposure scenario

Main title	Use as a Fuel - Consumer
Process scope	Covers consumer uses in liquid fuels.
Product category	PC13 Fuels.
<u>Environment</u>	
Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
SPERC	ESVOC SPERC 9.12c.v1
<u>Non-industrial</u>	
Product sub-category	PC13_1 Liquid: automotive refuelling CONCAWE SCED 13.3.a
	PC13_4 Liquid: Garden equipment - Refuelling CONCAWE SCED 13.4.a
	PC13_6 Liquid: home space heater fuel CONCAWE SCED 13.5.a

2. Conditions of use affecting exposure (Non-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: 19 000 000 tonnes/year
Fraction of Regional tonnage used locally: 0.0005
Annual site tonnage: 9 500 tonnes
Maximum daily site tonnage: 26 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
Emission factor - soil	Release fraction to soil from wide dispersive use (regional only): 0.00001

Use as a Fuel - Consumer

Environmental factors not influenced by risk management measures

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

Risk management measures

STP details Not applicable as there is no release to wastewater.
Estimated substance removal from wastewater via domestic sewage treatment: 94.6%
Maximum allowable site tonnage (Msafe), based on release following total wastewater treatment removal: 2.3E+05 kg/day
Assumed domestic sewage treatment plant flow (m³/day): 2000.

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 (Non-industrial - Health 1)

Product characteristics

Physical state Liquid

Concentration details Covers concentrations up to 100 %.

Amounts used

PC13_1 Liquid: automotive refuelling
For each use event, covers use amounts up to 44 kg.

PC13_4 Liquid: Garden equipment - Refuelling
For each use event, covers use amounts up to 750 g.

PC13_6 Liquid: home space heater fuel
For each use event, covers use amounts up to 3.32 kg.

Frequency and duration of use

Covers use up to 1 time(s)/day.

PC13_1 Liquid: automotive refuelling
Covers exposure up to 0.05 hours per event.

PC13_4 Liquid: Garden equipment - Refuelling
PC13_6 Liquid: home space heater fuel
Covers exposure up to 0.033 hours per event.

Human factors not influenced by risk management

Potentially exposed body parts PC13_1 Liquid: automotive refuelling , PC13_6 Liquid: home space heater fuel :
Assumes that potential dermal contact is limited to palm of one hand.

PC13_4 Liquid: Garden equipment - Refuelling :
Assumes that potential dermal contact is limited to inside hands/one hand/palm of hands.

Other given operational conditions affecting Non-industrial exposure

Use as a Fuel - Consumer

Setting PC13_1 Liquid: automotive refuelling : Covers outdoor use.

Other given operational conditions affecting Non-industrial exposure

General measures (skin irritants) Ensure there is no direct skin contact with product. Wash off any skin contamination immediately.

General measures (flammability) For measures to control risks from physicochemical properties, refer to main body of the SDS, section 7 and/or 8.

General measures (aspiration hazard) Do not ingest. If swallowed, then seek immediate medical assistance.

3. Exposure estimation (Environment 1)

Assessment method Used Petrorisk model. (Hydrocarbon Block Method)
Risk-driving RCR - air compartment driven $RCR(\text{air}) \leq 0.045$
Risk-driving RCR - water compartment driven $RCR(\text{water}) \leq 0.11$

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.

3. Exposure estimation (Health 1)

Assessment method The ECETOC TRA tool has been used to estimate consumer exposures, unless otherwise indicated.

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. 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. Available hazard data do not enable the derivation of a DNEL for aspiration effects. Risk Management Measures are based on qualitative risk characterisation.