

# NYTRO® LIBRA



## SAFETY DATA SHEET

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

#### 1.1 Product identifier

Product name	NYTRO® LIBRA
Product description	Insulating oil
Product type	Liquid.
MARPOL Annex 1	Oils

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

Identified uses	
Distribution of substance - Industrial	
Formulation and (re)packing of substances and mixtures - Industrial	
Use in functional fluids - Industrial	
Use in functional fluids - Professional	
Uses advised against	Reason
This product must not be used in applications other than those recommended in Section 1, without first seeking the advice of the supplier.	-

#### 1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer	Head office: Nynas AB P.O. Box 10700 SE-121 29 Stockholm SWEDEN +46 8 602 12 00 (Office hours 8 am - 4.30 pm (CET)) www.nynas.com
e-mail address of person responsible for this SDS	ProductHSE@nynas.com

#### 1.4 Emergency telephone number

Telephone number	+44 (0) 1235 239 670
Hours of operation	24 hour service
<u>National advisory body/Poison Centre</u>	
Telephone number 020 - 99 60 00 (Kemiakuten, 24h service)	

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Product definition	Mixture
<u>Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]</u>	
Asp. Tox. 1, H304	

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.  
See Section 16 for the full text of the H statements declared above.

## SECTION 2: Hazards identification

See Section 11 for more detailed information on health effects and symptoms.

## 2.2 Label elements

Hazard pictograms



Signal word

Danger

Hazard statements

H304 - May be fatal if swallowed and enters airways.

Precautionary statements

Prevention

Not applicable.

Response

P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.

Storage

P405 - Store locked up.

Disposal

P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Not applicable.

## 2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII

Not applicable.

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

Not applicable.

## SECTION 3: Composition/information on ingredients

## 3.2 Mixtures

Mixture

Product/ingredient name	Identifiers	%	<u>Classification</u>	Type
			Regulation (EC) No. 1272/2008 [CLP]	
Distillates (petroleum), hydrotreated light naphthenic	REACH #: 01-2119480375-34 EC: 265-156-6 CAS: 64742-53-6 Index: 649-466-00-2	50 - 70	Asp. Tox. 1, H304	[1]
Distillates (petroleum), hydrotreated light paraffinic	REACH #: 01-2119487077-29 EC: 265-158-7 CAS: 64742-55-8	0 - 50	Asp. Tox. 1, H304	[1]
Distillates (petroleum), hydrotreated heavy paraffinic	REACH #: 01-2119484627-25 EC: 265-157-1 CAS: 64742-54-7 Index: 649-467-00-8	0 - 50	Not classified.	[6]
Lubricating oils (petroleum), C15-30,	REACH #: 01-2119474878-16	0 - 50	Asp. Tox. 1, H304	[1]

## SECTION 3: Composition/information on ingredients

hydrotreated neutral oil-based	EC: 276-737-9 CAS: 72623-86-0 Index: 649-482-00-X	0 - 5	Not classified.	[6]
Distillates (petroleum), solvent-refined heavy naphthenic	REACH #: 01-2119483621-38 EC: 265-097-6 CAS: 64741-96-4 Index: 649-457-00-3			
			See Section 16 for the full text of the H statements declared above.	

Regulation (EC) No. 1272/2008 [CLP] Annex VI Nota L applies to the base oil(s) in this product. Nota L - The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3 % DMSO extract as measured by IP 346.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII

[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

[5] Substance of equivalent concern

[6] Additional disclosure due to company policy

Occupational exposure limits, if available, are listed in Section 8.

## SECTION 4: First aid measures

## 4.1 Description of first aid measures

Eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation, blurred vision or swelling occurs and persists, obtain medical advice from a specialist.
Inhalation	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If casualty is unconscious and: If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention if adverse health effects persist or are severe. Maintain an open airway.
Skin contact	Wash with soap and water. Remove contaminated clothing and shoes. Handle with care and dispose of in a safe manner. Seek medical attention if skin irritation, swelling or redness develops and persists.
Ingestion	Accidental high pressure injection through the skin requires immediate medical attention. Do not wait for symptoms to develop.  Always assume that aspiration has occurred. Do not induce vomiting. Can enter lungs and cause damage. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Seek professional medical attention or send the casualty to a hospital. Do not wait for symptoms to develop.
Protection of first-aiders	Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.  No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.  Before attempting to rescue casualties, isolate area from all potential sources of ignition including disconnecting electrical supply. Ensure adequate ventilation and check that a safe, breathable atmosphere is present before entry into confined spaces.

## SECTION 4: First aid measures

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

#### Potential acute health effects

Eye contact	Eye contact may cause redness and transient pain.
Inhalation	Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.
Skin contact	No known significant effects or critical hazards.
Ingestion	May be fatal if swallowed and enters airways.

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

Notes to physician	Due to low viscosity there is a risk of aspiration if the product enters the lungs. Treat symptomatically.
Specific treatments	Always assume that aspiration has occurred.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media	Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
Unsuitable extinguishing media	Do not use direct water jets on the burning product; they could cause splattering and spread the fire. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

### 5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	In a fire or if heated, a pressure increase will occur and the container may burst. This substance will float and can be reignited on surface water.
Hazardous thermal decomposition products	Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulfur oxides) or sulfuric acid and unidentified organic and inorganic compounds.

### 5.3 Advice for firefighters

Special precautions for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Avoid breathing vapour or mist. Keep non-involved personnel away from the area of spillage. Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind/keep distance from source. In case of large spillages, alert occupants in downwind areas.
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Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.

Note : recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave/current direction and speed) may significantly influence the choice of appropriate actions. For this reason, local experts should be consulted when necessary. Local regulations may

## SECTION 6: Accidental release measures

	also prescribe or limit actions to be taken.
For emergency responders	<p>Small spillages: normal antistatic working clothes are usually adequate.</p> <p>Large spillages: full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons. Note : gloves made of PVA are not water-resistant, and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots. Goggles and /or face shield, if splashes or contact with eyes is possible or anticipated.</p> <p>Respiratory protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H<sub>2</sub>S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.</p>
6.2 Environmental precautions	<p>Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.</p> <p>In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents.</p> <p>If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities.</p>
6.3 Methods and material for containment and cleaning up	
Small spill	Stop leak if without risk. Absorb spilled product with suitable non-combustible materials.
Large spill	Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use water jet. When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal. Approach the release from upwind. Contaminated absorbent material may pose the same hazard as the spilt product.
6.4 Reference to other sections	<p>See Section 1 for emergency contact information.</p> <p>See Section 8 for information on appropriate personal protective equipment.</p> <p>See Section 13 for additional waste treatment information.</p>

## SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

General information	<p>Obtain special instructions before use. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use and store only outdoors or in a well-ventilated area.</p> <p>Hazard of slipping on spilt product. Avoid release to the environment.</p>
7.1 Precautions for safe handling	
Protective measures	<p>Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.</p> <p>Prevent the risk of slipping. Take precautionary measures against static discharge. Avoid splash filling of bulk volumes when handling hot liquid product. Empty containers retain product residue and can be hazardous.</p>

## SECTION 7: Handling and storage


Advice on general occupational hygiene	<p>Nota : See Section 8 for information on appropriate personal protective equipment. See section 13 for waste disposal information.</p> <p>Ensure that proper housekeeping measures are in place. Contaminated materials should not be allowed to accumulate in the workplaces and should never be kept inside the pockets. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash hands thoroughly after handling. Change contaminated clothes at the end of working shift. See also Section 8 for additional information on hygiene measures.</p>
7.2 Conditions for safe storage, including any incompatibilities	<p>Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Storage installations should be designed with adequate bunds in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations.</p> <p>Store separately from oxidising agents.</p> <p>Recommended materials for containers, or container linings use mild steel, stainless steel. Not suitable : Some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Compatibility should be checked with the manufacturer.</p> <p>Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain harmful, flammable/combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Store locked up. Protect from sunlight.</p>
7.3 Specific end use(s)	
Recommendations	Not available.
Industrial sector specific solutions	Not available.

## SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

## 8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
 Distillates (petroleum), hydrotreated light naphthenic	<b>Work environment authority Regulation 2015:7 (Sweden, 12/2015).</b> TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume
Distillates (petroleum), hydrotreated light paraffinic	<b>Work environment authority Regulation 2015:7 (Sweden, 12/2015).</b> TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume
Distillates (petroleum), hydrotreated heavy paraffinic	<b>Work environment authority Regulation 2015:7 (Sweden, 12/2015).</b> TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	<b>Work environment authority Regulation 2015:7 (Sweden, 12/2015).</b> TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume



## SECTION 8: Exposure controls/personal protection

Distillates (petroleum), solvent-refined heavy naphthenic	<b>Work environment authority Regulation 2015:7 (Sweden, 12/2015).</b> TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume
Oil mist	<b>[Air contaminant]</b> <b>Work environment authority Regulation 2015:7 (Sweden, 12/2015).</b> TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

## DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
Distillate (petroleum), hydrotreated light naphthenic	DNEL	Long term Inhalation	5,4 mg/m <sup>3</sup>	Workers	Local
Distillates (petroleum), hydrotreated light paraffinic	DNEL	Long term Inhalation	5,4 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Inhalation	5,4 mg/m <sup>3</sup>	Workers	Local
Distillate (petroleum), hydrotreated heavy paraffinic	DNEL	Long term Inhalation	5,4 mg/m <sup>3</sup>	Workers	Local

## PNECs

No PNECs available

PNEC Summary

Hydrocarbon Block Method (Petrisk)

## 8.2 Exposure controls

Appropriate engineering controls

Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.

## Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse.

Eye/face protection

Recommended: Safety glasses with side shields.

Skin protection

Hand protection

4 - 8 hours (breakthrough time): nitrile rubber

Body protection

Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**SECTION 8: Exposure controls/personal protection**

Respiratory protection	Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**SECTION 9: Physical and chemical properties**

## 9.1 Information on basic physical and chemical properties

Appearance

Physical state	Liquid.
Colour	Light yellow
Odour	Odourless/Light petroleum.
Odour threshold	Not available.
pH	Not applicable.
Melting point/freezing point	-51°C
Initial boiling point and boiling range	>250°C
Flash point	Closed cup: >140°C [Pensky-Martens.]
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure (Calculated)	<0,01 kPa [room temperature]
Density	0,88 g/cm <sup>3</sup> [15°C]
Solubility(ies)	Insoluble in water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	>270°C
Decomposition temperature	>280°C
Viscosity	Kinematic (40°C): 0,096 cm <sup>2</sup> /s (9,6 cSt)
Explosive properties	Not available.
Oxidising properties	Not available.
DMSO extractable compounds for base oil substance(s) according to IP346	< 3%

**SECTION 10: Stability and reactivity**

10.1 Reactivity	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	Oxidising agent.
10.5 Incompatible materials	Keep away from extreme heat and oxidizing agents.
10.6 Hazardous decomposition products	Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulfur oxides) or sulfuric acid and unidentified organic and inorganic compounds.



## SECTION 11: Toxicological information

## 11.1 Information on toxicological effects

## Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure	Remarks
Distillates (petroleum), hydrotreated light naphthenic	LC50 Inhalation Dusts and mists	Rat - Male, Female	>5,53 mg/l	4 hours	EMBSI 1988a (similar material)
	LD50 Dermal	Rabbit	>5000 mg/kg	-	API 1982 (similar material)
	LD50 Oral	Rat	>5000 mg/kg	-	API 1986a (similar material)
Distillates (petroleum), hydrotreated light paraffinic	LC50 Inhalation Dusts and mists	Rat - Male, Female	>5,53 mg/l	4 hours	EMBSI 1988a (similar material)
	LD50 Dermal	Rabbit	>5000 mg/kg	-	API 1982 (similar material)
	LD50 Oral	Rat	>5000 mg/kg	-	API 1986a (similar material)
Distillates (petroleum), hydrotreated heavy paraffinic	LC50 Inhalation Dusts and mists	Rat	>5,53 mg/l	4 hours	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-	-
	LD50 Oral	Rat	>5000 mg/kg	-	-
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	LC50 Inhalation Dusts and mists	Rat - Male, Female	>5,53 mg/l	4 hours	EMBSI 1988a (similar material)
	LD50 Dermal	Rabbit	>5000 mg/kg	-	API 1982 (similar material)
	LD50 Oral	Rat	>5000 mg/kg	-	API 1986a (similar material)

## Conclusion/Summary

No known significant effects or critical hazards.

## Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Observation	Remarks
Distillates (petroleum), hydrotreated light naphthenic	Skin - Non-irritant to skin.	Rabbit	0 to 0,8	24 to 72 hours	UBTL 1984e (similar material)
	Eyes - Non-irritating to the eyes.	Rabbit	0,17 to 0,33	24 to 72 hours	UBTL 1984i (similar material)
Distillates (petroleum), hydrotreated light paraffinic	Skin - Non-irritant to skin.	Rabbit	0 to 0,8	24 to 72 hours	UBTL 1984e (similar material)
	Eyes - Non-irritating to the eyes.	Rabbit	0,17 to 0,33	24 to 72 hours	UBTL 1984i (similar material)
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	Eyes - Non-irritating to the eyes.	Rabbit	0,17 to 0,33	24 to 72 hours	UBTL 1984i (similar material)

Skin

No known significant effects or critical hazards.

Eyes

No known significant effects or critical hazards.

Respiratory

No known significant effects or critical hazards.

## Sensitisation

## SECTION 11: Toxicological information

Product/ingredient name	Route of exposure	Species	Result	Remarks
Distillates (petroleum), hydrotreated light naphthenic	skin	Guinea pig	Not sensitizing	UBTL 1984j,k,l (similar material)
Distillates (petroleum), hydrotreated light paraffinic	skin	Guinea pig	Not sensitizing	UBTL 1984j,k,l (similar material)
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	skin	Guinea pig	Not sensitizing	UBTL 1984j,k,l (similar material)

Skin No known significant effects or critical hazards.

Respiratory No known significant effects or critical hazards.

Mutagenicity

Product/ingredient name	Test	Experiment	Result	Remarks
Distillates (petroleum), hydrotreated light naphthenic	OECD 473 473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro  Subject: Mammalian-Animal	Negative	-
Distillates (petroleum), hydrotreated light paraffinic	OECD 473 473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro  Subject: Mammalian-Animal	Negative	-
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	OECD 473 473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro  Subject: Mammalian-Animal	Negative	-

Conclusion/Summary No known significant effects or critical hazards.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure	Remarks
Distillates (petroleum), hydrotreated light naphthenic	Negative - Dermal	Mouse - Female	0,22 to 0,25 ml	78 weeks; Various	Doak, 1983, McKee, 1989 (similar material)
Distillates (petroleum), hydrotreated light paraffinic	Negative - Dermal	Mouse - Female	0,22 to 0,25 ml	78 weeks; Various	Doak, 1983, McKee, 1989 (similar material)
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	Negative - Dermal	Mouse - Female	0,22 to 0,25 ml	78 weeks; Various	Doak, 1983, McKee, 1989 (similar material)

Conclusion/Summary The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen.

Reproductive toxicity

Conclusion/Summary Based on available data, the classification criteria are not met.

Teratogenicity

## SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure	Remarks
Distillates (petroleum), hydrotreated light naphthenic	Negative - Dermal	Rat	0 to 2000 mg/kg mg/kg/day	-	(similar material)
Distillates (petroleum), hydrotreated light paraffinic	Negative - Dermal	Rat	0 to 2000 mg/kg mg/kg/day	-	-
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	Negative - Dermal	Rat	0 to 2000 mg/kg mg/kg/day	-	-

Conclusion/Summary No known significant effects or critical hazards.

Aspiration hazard

Product/ingredient name	Result
Distillates (petroleum), hydrotreated light naphthenic Distillates (petroleum), hydrotreated light paraffinic Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Information on likely routes of exposure Not available.

Potential acute health effects

Eye contact	Eye contact may cause redness and transient pain.
Inhalation	Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.
Skin contact	No known significant effects or critical hazards.
Ingestion	May be fatal if swallowed and enters airways.

Potential chronic health effects

General	No known significant effects or critical hazards.
Carcinogenicity	The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	No known significant effects or critical hazards.
Product/ingredient name	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.

Other information Not available.

Specific hazard

Aspiration hazard  
Aspiration means the entry of a liquid substance directly into the trachea and lower respiratory tract.  
Aspiration of hydrocarbon substances can result in severe acute effects such as chemical pneumonitis, varying degree of pulmonary injury or death.  
This property relates to the potential for low viscosity material to spread quickly into the deep lung and cause severe pulmonary tissue damage.  
Classification of a hydrocarbon substance for aspiration hazard is made on the basis of reliable human evidence or on the basis of physical properties.

## SECTION 12: Ecological information

## 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Distillates (petroleum), hydrotreated light naphthenic	Acute LL50 >10000 mg/l	Aquatic invertebrates.	96 hours
Distillates (petroleum), hydrotreated light paraffinic	Acute LL50 >100 mg/l	Fish	96 hours
	Acute NOEL >100 mg/l	Algae	72 hours
	Chronic NOEL 10 mg/l	Aquatic invertebrates.	21 days
	Acute IC50 >100 mg/l	Algae	48 hours
	Acute LC50 >100 mg/l	Fish	96 hours
Distillates (petroleum), hydrotreated heavy paraffinic	Acute LL50 >10000 mg/l	Aquatic invertebrates.	96 hours
	Acute LL50 >100 mg/l	Fish	96 hours
	Acute NOEL >100 mg/l	Algae	72 hours
	Chronic NOEL 10 mg/l	Aquatic invertebrates.	21 days
	Acute EC50 >100 mg/l	Fish	96 hours
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	Acute IC50 >100 mg/l	Algae	48 hours
	Acute LL50 >10000 mg/l	Aquatic invertebrates.	96 hours
	Acute LL50 >100 mg/l	Fish	96 hours
	Acute NOEL >100 mg/l	Algae	72 hours
	Chronic NOEL 10 mg/l	Aquatic invertebrates.	21 days

Conclusion/Summary No known significant effects or critical hazards.

## 12.2 Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Distillates (petroleum), hydrotreated light naphthenic	-	-	Inherent
Distillates (petroleum), hydrotreated light paraffinic	-	-	Inherent
Distillates (petroleum), hydrotreated heavy paraffinic	-	-	Inherent
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	-	-	Inherent

Conclusion/Summary Inherently biodegradable.

## 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Distillates (petroleum), hydrotreated light naphthenic	2 to 6	<500	low
Distillates (petroleum), hydrotreated light paraffinic	2 to 6	<500	low
Distillates (petroleum), hydrotreated heavy paraffinic	2 to 6	<500	low
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	2 to 6	<500	low

Conclusion/Summary The product has a potential to bioaccumulate.

## 12.4 Mobility in soil

Mobility High mobility in soil predicted, based on log Kow > 3.0.

## 12.5 Results of PBT and vPvB assessment

Not applicable.

Not applicable.

## SECTION 12: Ecological information

12.6 Other adverse effects Insoluble in water. Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

## SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 13.1 Waste treatment methods

#### Product

Methods of disposal Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. This substance can be burned or incinerated, subject to national/local authorizations, relevant contamination limits, safety regulations and air quality legislation. Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organization, and/or prescribe composition limits and methods for recovery or disposal.

Hazardous waste Yes.

#### European waste catalogue (EWC)

Waste code	Waste designation
13 03 07*	mineral-based non-chlorinated insulating and heat transmission oils

#### Packaging

Methods of disposal The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

## SECTION 14: Transport information

### International transport regulations

	ADR/RID	ADN	IMO/IMDG Classification	ICAO/IATA Classification
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
Additional information	-	-	-	-

### 14.6 Special precautions for user

**Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## SECTION 14: Transport information

14.7 Transport in bulk Oils  
according to Annex I of  
MARPOL 73/78 and the IBC  
Code

## SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles Not applicable.


Other EU regulations

Seveso Directive

This product is not controlled under the Seveso Directive.

International lists

National inventory

Australia	All components are listed or exempted.
Canada	All components are listed or exempted.
China	All components are listed or exempted.
Japan	 <b>Japan inventory (ENCS):</b> Not determined. <b>Japan inventory (ISHL):</b> All components are listed or exempted.
Malaysia	Not determined.
New Zealand	All components are listed or exempted.
Philippines	All components are listed or exempted.
Republic of Korea	All components are listed or exempted.
Taiwan	All components are listed or exempted.
United States	All components are listed or exempted.
Thailand	Not determined.
Turkey	All components are listed or exempted.
Viet Nam	Not determined.

15.2 Chemical safety assessment Complete.

## SECTION 16: Other information

Revision comments Not available.

 Indicates information that has changed from previously issued version.

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE = Acute Toxicity Estimate

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

CMR = Carcinogen, Mutagen or Reproductive toxicant

CSA = Chemical Safety Assessment



## SECTION 16: Other information

CO<sub>2</sub> = carbon dioxide  
 DNEL = Derived No Effect Level  
 EC50 = Half maximal effective concentration  
 EUH statement = CLP-specific Hazard statement  
 IATA = International Air Transport Association  
 IC50 = Half maximal inhibitory concentration  
 IMDG = International Maritime Dangerous Goods  
 LC50 = Median lethal concentration  
 LD50 = Median lethal dose  
 PNEC = Predicted No Effect Concentration  
 PBT = Persistent, Bioaccumulative and Toxic  
 RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
 REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]  
 SCBA = Self-Contained Breathing Apparatus  
 SVHC = Substances of Very High Concern

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Asp. Tox. 1, H304	Calculation method

Sweden

Full text of abbreviated H statements	H304	May be fatal if swallowed and enters airways.
Full text of classifications [CLP/GHS]	Asp. Tox. 1, H304	ASPIRATION HAZARD - Category 1
Date of printing	2018-11-07	
Date of issue/ Date of revision	2018-11-07	
Date of previous issue	2018-08-27	
Version	4	

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## Section 1 - Title

Short title of the exposure scenario	Distribution of substance - Industrial
List of use descriptors	<b>Identified use name:</b> Distribution of substance - Industrial <b>Process Category:</b> PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC15 <b>Subsequent service life relevant for that use:</b> No. <b>Environmental Release Category:</b> ERC04, ERC05, ERC06a, ERC06b, ERC06c, ERC06d, ERC07, ESVOC SpERC 1.1b.v1
Environmental contributing scenarios	<b>Use of non-reactive processing aid at industrial site (no inclusion into or onto article) - ERC04</b> <b>Use of reactive processing aid at industrial site (no inclusion into or onto article) - ERC06b</b> <b>Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) - ERC06c</b> <b>Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) - ERC06d</b> <b>Use of functional fluid at industrial site - ERC07</b> <b>Use of intermediate - ERC06a</b> <b>Use at industrial site leading to inclusion into/onto article - ERC05</b>
Health Contributing scenarios	<b>General exposures (open systems) - PROC04</b> <b>General exposures (closed systems) - PROC01, PROC02, PROC03</b> <b>With sample collection - PROC03</b> <b>Laboratory activities - PROC15</b> <b>Bulk transfers - PROC08b</b> <b>Drum and small package filling - PROC09</b> <b>Clean-down and maintenance of equipment - PROC08a</b> <b>Storage - PROC01, PROC02</b>
Industry Association	Concawe - 2017
Processes and activities covered by the exposure scenario	Bulk loading (including marine vessel/barge, rail/road car and IBC loading) of substance within closed or contained systems, including incidental exposures during its sampling, storage, unloading, maintenance and associated laboratory activities.

## Section 2 - Exposure controls

### 2.1 Control of environmental exposure

Amounts used	Annual site tonnage (tonnes/year) 28 Maximum daily site tonnage (kg/day) 1400
Frequency and duration of use	Continuous release Emission days (days per year) 20
Other conditions affecting environmental exposure	Release fraction to air from process (initial release prior to RMM) 0.0001 Release fraction to wastewater from process (initial release prior to RMM) 1.0E-7 Release fraction to soil from process (initial release prior to RMM) 1.0E-5
<u>Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil</u>	Prevent discharge of undissolved substance to or recover from onsite wastewater. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Risk management measures - Air	Treat air emission to provide the required removal efficiency of (%) 90
Risk management measures - Water	Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%) 36
Organisational measures to prevent/limit release from site	Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed.
Date of issue/Date of revision	2018-04-23

## Section 2 - Exposure controls

<u>Conditions and measures related to sewage treatment plant</u>	<p>Estimated substance removal from wastewater via domestic sewage treatment (%) 95,1</p> <p>Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs (%) 95,1</p> <p>Maximum allowable site tonnage (<math>M_{\text{Safe}}</math>) based on release following total wastewater treatment removal (kg/day) 23000</p> <p>Assumed on-site sewage treatment plant flow (<math>\text{m}^3/\text{d}</math>) 2000</p>
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### 2.2 Control of worker exposure

#### General measures applicable to all activities

Concentration of substance in mixture or article	Covers percentage substance in the product up to 100% (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours
Other conditions affecting workers exposure	<p>Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature, unless stated differently.</p> <p>There are no routine anticipated exposures by ingestion related to any supported uses of the substance. The risk arising from aspiration hazard is solely related to the physico-chemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific risk.</p>

#### Risk management measures (RMM)

Clean-down and maintenance of equipment - PROC 8a  
 Drain down system prior to equipment break-in or maintenance.

Storage - PROC 1 & 2  
 Store substance within a closed system.

## Section 3 - Exposure estimation and reference to its source

### 3.1 Environment

Exposure assessment (environment):	<p>The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.</p> <p>Risk Characterisation Ratio (RCR) air 0.009</p> <p>Risk Characterisation Ratio (RCR) water 0.077</p>
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### 3.2 Workers

Exposure assessment (human):	Qualitative approach used to conclude safe use.
Exposure estimation and reference to its source	<p>A DNEL (derived no effect levels) cannot be derived. There are no routine anticipated exposures by ingestion related to any supported uses of the substance. The risk arising from aspiration hazard is solely related to the physico-chemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific risk.</p>

## Section 1 - Title

Short title of the exposure scenario	Formulation and (re)packing of substances and mixtures - Industrial
List of use descriptors	<b>Identified use name:</b> Formulation and (re)packing of substances and mixtures - Industrial <b>Process Category:</b> PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC14, PROC15 <b>Subsequent service life relevant for that use:</b> No. <b>Environmental Release Category:</b> ERC02, ESVOC SpERC 2.2.v1 <b>Formulation into mixture - ERC02</b>
Environmental contributing scenarios	
Health Contributing scenarios	<b>General exposures (open systems) - PROC04</b> <b>General exposures (closed systems) - PROC01, PROC02, PROC03</b> <b>Batch processes at elevated temperatures - PROC03</b> <b>With sample collection - PROC03</b> <b>Laboratory activities - PROC15</b> <b>Bulk transfers - PROC08b</b> <b>Mixing operations (open systems) - PROC05</b> <b>Transfer from/pouring from containers - PROC08a</b> <b>Drum/batch transfers - PROC08b</b> <b>Tabletting, compression, extrusion or pelletisation - PROC14</b> <b>Drum and small package filling - PROC09</b> <b>Clean-down and maintenance of equipment - PROC08a</b> <b>Storage - PROC01, PROC02</b>

Industry Association	Concawe - 2017
Processes and activities covered by the exposure scenario	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.

## Section 2 - Exposure controls

### 2.1 Control of environmental exposure

Amounts used	Annual site tonnage (tonnes/year) 13000 Maximum daily site tonnage (kg/day) 42000
Frequency and duration of use	Continuous release Emission days (days per year) 300
Other conditions affecting environmental exposure	Release fraction to air from process (initial release prior to RMM) 0.0025 Release fraction to wastewater from process (initial release prior to RMM) 5.0E-6 Release fraction to soil from process (initial release prior to RMM) 0.0001
<u>Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil</u>	Prevent discharge of undissolved substance to or recover from onsite wastewater. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Risk management measures - Water	Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%) 94,3
Organisational measures to prevent/limit release from site	Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed.

## Section 2 - Exposure controls

### Conditions and measures related to sewage treatment plant

Estimated substance removal from wastewater via domestic sewage treatment (%) 95,1  
 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs (%) 95,1  
 Maximum allowable site tonnage ( $M_{\text{safe}}$ ) based on release following total wastewater treatment removal (kg/day) 61165  
 Assumed on-site sewage treatment plant flow ( $\text{m}^3/\text{d}$ ) 2000

### 2.2 Control of worker exposure

#### General measures applicable to all activities

Concentration of substance in mixture or article	Covers percentage substance in the product up to 100% (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours
Other conditions affecting workers exposure	Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature, unless stated differently. There are no routine anticipated exposures by ingestion related to any supported uses of the substance. The risk arising from aspiration hazard is solely related to the physico-chemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific risk.

#### Risk management measures (RMM)

Clean-down and maintenance of equipment - PROC 8a  
 Drain down system prior to equipment break-in or maintenance.

Storage - PROC 1 & 2  
 Store substance within a closed system.

## Section 3 - Exposure estimation and reference to its source

### 3.1 Environment

Exposure assessment (environment):	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. Risk Characterisation Ratio (RCR) air 0.11 Risk Characterisation Ratio (RCR) water 0.87
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### 3.2 Workers

Exposure assessment (human):	Qualitative approach used to conclude safe use.
Exposure estimation and reference to its source	A DNEL (derived no effect levels) cannot be derived. There are no routine anticipated exposures by ingestion related to any supported uses of the substance. The risk arising from aspiration hazard is solely related to the physico-chemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific risk.

## Section 1 - Title

Short title of the exposure scenario	Use in functional fluids - Industrial
List of use descriptors	<b>Identified use name:</b> Use in functional fluids - Industrial <b>Process Category:</b> PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09 <b>Subsequent service life relevant for that use:</b> No. <b>Environmental Release Category:</b> ERC07
Environmental contributing scenarios	<b>Use of functional fluid at industrial site - ERC07</b>
Health Contributing scenarios	<b>General exposures (closed systems) - PROC02</b> <b>Bulk transfers - PROC01, PROC02, PROC03</b> <b>Storage - PROC01, PROC02</b> <b>Drum/batch transfers - PROC08b</b> <b>Filling of articles/equipment - PROC09</b> <b>Filling/preparation of equipment from drums or containers - PROC08a</b> <b>General exposures (open systems) - PROC04</b> <b>Remanufacture of reject articles - PROC09</b>
Industry Association	Concawe - 2017
Processes and activities covered by the exposure scenario	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.

## Section 2 - Exposure controls

### 2.1 Control of environmental exposure

Amounts used	Annual site tonnage (tonnes/year) 10 Maximum daily site tonnage (kg/day) 500
Frequency and duration of use	Continuous release Emission days (days per year) 20
Other conditions affecting environmental exposure	Release fraction to air from process (initial release prior to RMM) 0.0005 Release fraction to wastewater from process (initial release prior to RMM) 1.0E-6 Release fraction to soil from process (initial release prior to RMM) 0.001
<u>Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil</u>	Prevent discharge of undissolved substance to or recover from onsite wastewater. If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Risk management measures - Water	Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%) 36.6
Organisational measures to prevent/limit release from site	Do not apply industrial sludge to natural soils. Sewage sludge should be incinerated, contained or reclaimed.
<u>Conditions and measures related to sewage treatment plant</u>	Estimated substance removal from wastewater via domestic sewage treatment (%) 95.1 Total efficiency of removal from wastewater after on-site and off-site (municipal treatment plant) RMMs (%) 95.1 Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal (kg/day) 6400 Assumed on-site sewage treatment plant flow ( $\text{m}^3/\text{d}$ ) 2000

### 2.2 Control of worker exposure

General measures applicable to all activities



## Section 2 - Exposure controls

Frequency and duration of use	Covers daily exposures up to 8 hours
Other conditions affecting workers exposure	Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature, unless stated differently. There are no routine anticipated exposures by ingestion related to any supported uses of the substance. The risk arising from aspiration hazard is solely related to the physico-chemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific risk.

### Risk management measures (RMM)

General exposures (open systems), Elevated temperature - PROC 04

Restrict area of openings to equipment. Provide extract ventilation to points where emissions occur. Local exhaust ventilation - efficiency of at least 90 %.

Clean-down and maintenance of equipment - PROC 8a

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

Storage - PROC 1, 2

Store substance within a closed system.

## Section 3 - Exposure estimation and reference to its source

### 3.1 Environment

Exposure assessment (environment):	Not available.
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### 3.2 Workers

Exposure assessment (human):	Qualitative approach used to conclude safe use.
Exposure estimation and reference to its source	A DNEL (derived no effect levels) cannot be derived. There are no routine anticipated exposures by ingestion related to any supported uses of the substance. The risk arising from aspiration hazard is solely related to the physico-chemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific risk.

## Section 1 - Title

Short title of the exposure scenario	Use in functional fluids - Professional
List of use descriptors	<b>Identified use name:</b> Use in functional fluids - Professional <b>Process Category:</b> PROC01, PROC02, PROC03, PROC08a, PROC09, PROC20 <b>Subsequent service life relevant for that use:</b> No. <b>Environmental Release Category:</b> ERC09a, ERC09b, ESVOC SpERC 9.13b.v1
Environmental contributing scenarios	<b>Widespread use of functional fluid (outdoor)</b> - ERC09b <b>Widespread use of functional fluid (indoor)</b> - ERC09a
Health Contributing scenarios	<b>Drum/batch transfers</b> - PROC08a <b>Transfer from/pouring from containers</b> - PROC09 <b>Operation of equipment containing engine oils and similar</b> - PROC01, PROC02, PROC03, PROC20 <b>Remanufacture of reject articles</b> - PROC09 <b>Equipment cleaning and maintenance</b> - PROC08a <b>Storage</b> - PROC01, PROC02
Industry Association	Concawe - 2017
Processes and activities covered by the exposure scenario	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.

## Section 2 - Exposure controls

### 2.1 Control of environmental exposure

Amounts used	Annual site tonnage (tonnes/year) 0,016 Maximum daily site tonnage (kg/day) 0,044
Frequency and duration of use	Continuous release Emission days (days per year) 365
Other conditions affecting environmental exposure	Release fraction to air from process (initial release prior to RMM) 0.05 Release fraction to wastewater from process (initial release prior to RMM) 0.013 Release fraction to soil from process (initial release prior to RMM) 0.025
<u>Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil</u>	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
Risk management measures - Water	Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%) 89.1

### 2.2 Control of worker exposure

#### General measures applicable to all activities

Concentration of substance in mixture or article	Covers percentage substance in the product up to 100% (unless stated differently).
Frequency and duration of use	Covers daily exposures up to 8 hours
Other conditions affecting workers exposure	Assumes a good basic standard of occupational hygiene is implemented Assumes use at not more than 20°C above ambient temperature, unless stated differently. There are no routine anticipated exposures by ingestion related to any supported uses of the substance. The risk arising from aspiration hazard is solely related to the physico-chemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific risk.

#### Risk management measures (RMM)

## Section 2 - Exposure controls

Drum/batch transfers - PROC 8a  
Use drum pumps.

Clean-down and maintenance of equipment - PROC 8a  
Drain down system prior to equipment break-in or maintenance.

Storage - PROC 1, 2  
Store substance within a closed system.

## Section 3 - Exposure estimation and reference to its source

### 3.1 Environment

Exposure assessment (environment):	Not available.
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### 3.2 Workers

Exposure assessment (human):	Qualitative approach used to conclude safe use.
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Exposure estimation and reference to its source	A DNEL (derived no effect levels) cannot be derived. There are no routine anticipated exposures by ingestion related to any supported uses of the substance. The risk arising from aspiration hazard is solely related to the physico-chemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific risk.
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