

NYTRO[®] 10 XN Transformer oil



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 [®] 10 XN
UFI	DRE0-K03W-V00D-F585
Product description	Insulating oil / Transformer oil
Product type	Liquid.

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

Identified uses	
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	ReinhardOil.dk ApS Cottagevej 11, 1. 2900 Hellerup Danmark www.reinhardoil.dk +45 70 26 70 07
e-mail address of person responsible for this SDS	mail@reinhardoil.dk

1.4 Emergency telephone number

National advisory body/Poison Centre

Poison Center
+45 82 12 12 12 (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	
Aquatic Chronic 3, H412	

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.

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

2.2 Label elements

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SECTION 2: Hazards identification

Hazard pictograms



Signal word

Danger

Hazard statements

H304 - May be fatal if swallowed and enters airways.
H412 - Harmful to aquatic life with long lasting effects.Precautionary statements

Prevention

P273 - Avoid release to the environment.

Response

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

Storage

Not applicable.

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

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

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification

Prolonged or repeated contact may dry skin and cause irritation.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Mixture

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
Distillate (petroleum), hydrotreated light naphthenic	REACH #: 01-2119480375-34 EC: 265-156-6 CAS: 64742-53-6	≥97	Asp. Tox. 1, H304	-	[1] [2]
2,6-di-tert-butyl-p-cresol	REACH #: 01-2119555270-46 EC: 204-881-4 CAS: 128-37-0	≤0,3	Aquatic Acute 1, H400 Aquatic Chronic 1, H410 See Section 16 for the full text of the H statements declared above.	M [Acute] = 1 M [Chronic] = 1	[1] [2]

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, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

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SECTION 3: Composition/information on ingredients

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

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 skin thoroughly with soap and water or use recognised skin cleanser. 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. Accidental high pressure injection through the skin requires immediate medical attention. Do not wait for symptoms to develop.
Ingestion	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. 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.
Protection of first-aiders	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.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

Eye contact	Slight irritant
Inhalation	Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.
Skin contact	Adverse symptoms may include the following: irritation dryness cracking
Ingestion	Adverse symptoms may include the following: Nausea or vomiting. diarrhoea

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.

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media Use dry chemical, CO₂, 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. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous combustion products Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H₂S, SO_x (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.

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 also prescribe or limit actions to be taken.

For emergency responders Small spillages: normal antistatic working clothes are usually adequate.

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.

Respiratory protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H₂S) 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.

SECTION 6: Accidental release measures

6.2 Environmental precautions	<p>Water polluting material. May be harmful to the environment if released in large quantities. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). 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. 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> <p>Avoid release to the environment.</p> <p>Nota : See Section 8 for information on appropriate personal protective equipment. See section 13 for waste disposal information.</p>
Advice on general occupational hygiene	<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>

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SECTION 7: Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

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.

Store separately from oxidising agents.

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.

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.

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
Distillate (petroleum), hydrotreated light naphthenic	Working Environment Authority (Denmark, 2/2023). [oil mist, mineral oil particles] TWA: 1 mg/m ³ 8 hours. Form: mist and particles STEL: 2 mg/m ³ 15 minutes. Form: mist and particles
2,6-di-tert-butyl-p-cresol	Working Environment Authority (Denmark, 2/2023). TWA: 10 mg/m ³ 8 hours. STEL: 20 mg/m ³ 15 minutes.
Oil mist	[Air contaminant] Working Environment Authority (Denmark, 2/2023). [oil mist, mineral oil particles] TWA: 1 mg/m ³ 8 hours. Form: mist and particles STEL: 2 mg/m ³ 15 minutes. Form: mist and particles
2,6-di-tert-butyl-p-cresol	[Air contaminant] Working Environment Authority (Denmark, 2/2023). TWA: 10 mg/m ³ 8 hours. STEL: 20 mg/m ³ 15 minutes.

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures

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

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SECTION 8: Exposure controls/personal protection

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 2,6-di-tert-butyl-p-cresol	DNEL	Long term Inhalation	5,58 mg/m ³	Workers	Local
	DNEL	Long term Dermal	0,5 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	1,76 mg/m ³	Workers	Systemic

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
2,6-di-tert-butyl-p-cresol	Soil	0,05 mg/kg wwt	-
	Sewage Treatment Plant	17 mg/l	-
	Fresh water sediment	0,46 mg/kg wwt	-
	Secondary Poisoning	16,7 mg/kg	-
	Marine water	0,02 µg/l	-
	Fresh water	0,2 µg/l	-

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

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. 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.

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

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Physical state

Liquid.

Colour

Light yellow

Odour

Odourless/Light petroleum.

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SECTION 9: Physical and chemical properties

Melting point/freezing point	-60°C
Initial boiling point and boiling range	>240°C (>464°F) [ASTM D 2887]
Flammability	Not available.
Lower and upper explosion limit	Not available.
Flash point	Closed cup: >140°C (>284°F) [Pensky-Martens]
Auto-ignition temperature	>200°C (>392°F)
Decomposition temperature	>280°C
pH	Not applicable.
Viscosity	Kinematic (40°C): 7,6 mm ² /s (7,6 cSt)
Solubility in water	Insoluble in water.
Partition coefficient: n-octanol/water	Not applicable.
Vapour pressure (Calculated)	<0,01 kPa (<0,075006 mm Hg)
Density	0,88 g/cm ³ [15°C (59°F)]
Vapour density	Not available.

9.2 Other information

DMSO extractable compounds for base oil substance(s) according to IP346	< 3%
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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	Keep away from extreme heat and oxidizing agents. Take precautionary measures against static discharge.
10.5 Incompatible materials	Oxidising agent.
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 ₂ S, SO _x (sulfur oxides) or sulfuric acid and unidentified organic and inorganic compounds.

SECTION 11: Toxicological information

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

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure	Remarks
Distillate (petroleum), hydrotreated light naphthenic	LC50 Inhalation Dusts and mists	Rat	>5,53 mg/l	4 hours	EMBSI 1988 (similar material)
	LD50 Dermal	Rabbit	>5000 mg/kg	-	API 1982 (similar material)
	LD50 Oral	Rat	>5000 mg/kg	-	API 1982(similar material)
2,6-di-tert-butyl-p-cresol	LD50 Dermal	Rat	>5000 mg/kg	-	Supplier's information
	LD50 Oral	Rat	>5000 mg/kg	-	Supplier's information

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

NYTRO® 10 XN**SECTION 11: Toxicological information**Acute toxicity estimates

N/A

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Observation	Remarks
Distillate (petroleum), hydrotreated light naphthenic	Eyes - Non-irritating to the eyes.	Rabbit	0 to 0,11	24 to 72 hours	API 1982(similar material)
	Skin - Non-irritant to skin.	Rabbit	0 to 1	24 to 72 hours	API 1982(similar material)
2,6-di-tert-butyl-p-cresol	Eyes - Cornea opacity	Rabbit	0	-	Supplier's information
	Eyes - Oedema of the conjunctivae	Rabbit	0,1	-	Supplier's information
	Eyes - Iris lesion	Rabbit	0	-	Supplier's information
	Eyes - Redness of the conjunctivae	Rabbit	0,5	-	Supplier's information

Skin Based on available data, the classification criteria are not met.

Eyes Based on available data, the classification criteria are not met.

Respiratory Based on available data, the classification criteria are not met.

Sensitisation

Product/ingredient name	Route of exposure	Species	Result	Remarks
Distillate (petroleum), hydrotreated light naphthenic 2,6-di-tert-butyl-p-cresol	skin	Guinea pig	Not sensitizing	API 1982(similar material)
	skin	Human	Not sensitizing	Supplier's information

Skin Based on available data, the classification criteria are not met.

Respiratory Based on available data, the classification criteria are not met.

Mutagenicity

Product/ingredient name	Test	Experiment	Result	Remarks
2,6-di-tert-butyl-p-cresol	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative	Supplier's information
	476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	Supplier's information
	473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	Supplier's information

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

Carcinogenicity

Conclusion/Summary The base oil(s) in this product is based on an severely hydrotreated distillate. Based on available data, the classification criteria are not met.

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SECTION 11: Toxicological information

Reproductive toxicity

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

Teratogenicity

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

Aspiration hazard

Product/ingredient name	Result
Nytro 10 XN Distillate (petroleum), hydrotreated light naphthenic	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Distillate (petroleum), hydrotreated light naphthenic	Sub-chronic LOAEL Oral	Rat	125 mg/kg	-
	Sub-chronic NOAEL Dermal Sub-acute NOEL Inhalation Dusts and mists	Rat Rat	>2000 mg/kg 220 mg/m ³	- 6 hours; 5 days per week
2,6-di-tert-butyl-p-cresol	Sub-acute NOAEL Oral	Rat	25 mg/kg	28 days; 7 days per week

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

11.2.2 Other information

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
Distillate (petroleum), hydrotreated light naphthenic 2,6-di-tert-butyl-p-cresol	Acute EL50 >10000 mg/l	Daphnia	48 hours
	Acute LL50 >100 mg/l	Fish	96 hours
	Acute NOEL >100 mg/l	Algae	72 hours
	Chronic NOEL 10 mg/l Fresh water	Daphnia	21 days
	Acute EC50 0,61 mg/l	Daphnia - <i>Magna</i>	48 hours
	Acute IC50 >0,4 mg/l	Algae - <i>Desmodesmus Subspicatus</i>	72 hours
	Acute LC50 >0,57 mg/l	Fish - <i>Danio-erio</i>	96 hours
	Chronic NOEC 0,316 mg/l	Daphnia - <i>Magna</i>	21 days

Conclusion/Summary Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
2,6-di-tert-butyl-p-cresol	OECD 301C Ready Biodegradability - Modified MITI Test (I)	4,5 % - 28 days	-	-

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SECTION 12: Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Distillate (petroleum), hydrotreated light naphthenic 2,6-di-tert-butyl-p-cresol	-	-	Not readily
	-	-	Not readily

Conclusion/Summary Not readily biodegradable. This product is inherently biodegradable.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Distillate (petroleum), hydrotreated light naphthenic 2,6-di-tert-butyl-p-cresol	2 to 6	<500	Low
	5,1	-	High

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

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

Not available.

12.7 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.

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SECTION 14: Transport information

International transport regulations

	ADR/RID	ADN	IMO/IMDG Classification	ICAO/IATA Classification
14.1 UN number or ID number	Not regulated.	9006	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,6-di-tert-butyl-p-cresol)	-	-
14.3 Transport hazard class(es)	-	9	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	Yes.	No.	No.

Physical state

ADN

The product is only regulated as a dangerous good when transported in tank vessels.

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.

14.7 Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 - Oils

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

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

Labelling Not applicable.

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air Not listed

Industrial emissions (integrated pollution prevention and control) - Water Not listed

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

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SECTION 15: Regulatory information

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

Restrictions on use Not to be used by professional users below 18 years of age. See the National Working Environment Authorities Executive Order regarding Young People At Work.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

National inventory

Australia	All components are listed or exempted.
Canada	All components are listed or exempted.
China	All components are listed or exempted.
Eurasian Economic Union	Russian Federation inventory: All components are listed or exempted.
Japan	Japan inventory (CSCL): All components are listed or exempted. Japan inventory (ISHL): All components are listed or exempted.
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.
Thailand	All components are listed or exempted.
Turkey	All components are listed or exempted.
United States	All components are active or exempted.
Viet Nam	All components are listed or exempted.

15.2 Chemical safety assessment Complete.

SECTION 16: Other information

Revision comments Not available.

🔍 Indicates information that has changed from previously issued version.

Abbreviations and acronyms ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 N/A = Not available
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 SGG = Segregation Group

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SECTION 16: Other information

vPvB = Very Persistent and Very Bioaccumulative

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

Classification	Justification
Asp. Tox. 1, H304	Expert judgment
Aquatic Chronic 3, H412	Expert judgment

Denmark

Full text of abbreviated H statements	H304	May be fatal if swallowed and enters airways.
	H400	Very toxic to aquatic life.
	H410	Very toxic to aquatic life with long lasting effects.
	H412	Harmful to aquatic life with long lasting effects.
Full text of classifications [CLP/GHS]	Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
	Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
	Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
	Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Date of printing	2023-11-28	
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Version	7.02	

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Section 1 - Title

Short title of the exposure scenario	Use in functional fluids - Professional
List of use descriptors	Identified use name: Use in functional fluids - Professional Process Category: PROC01, PROC02, PROC08a, PROC20 Subsequent service life relevant for that use: No. Environmental Release Category: ERC09a
Environmental contributing scenarios	Widespread use of functional fluid (indoor) - ERC09a
Health Contributing scenarios	Drum/batch transfers - PROC08a Operation of equipment containing engine oils and similar - PROC20 Equipment cleaning and maintenance - PROC08a Storage - PROC01, PROC02 General exposures (closed systems) - PROC01, PROC02
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) 0.005 Maximum daily site tonnage (kg/day) 0.014
Frequency and duration of use	Continuous release Emission days (days per year) 365
Other conditions affecting environmental exposure	Release fraction to air from wide dispersive use (regional only) 0.0005 Release fraction to wastewater from wide dispersive use 0.0005 Release fraction to soil from wide dispersive use (regional only) 0.001
<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 81.2%
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 (%): 94.8 Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 94.8 Maximum allowable site tonnage (M_{Safe}) based on release following total wastewater treatment removal (kg/day) 0.42 Assumed on-site sewage treatment plant flow (m^3/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 %.
Frequency and duration of use	Covers daily exposures up to 8 hours

Section 2 - Exposure controls

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. 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)

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

General exposures (closed systems) - PROC 1, PROC 2
Sample via a closed loop or other system to avoid exposure.

Operation of equipment containing engine oils and similar Closed system - PROC 20
Handle substance within a closed system.

Operation of equipment containing engine oils and similar Closed system Elevated temperature - PROC 20
Assumes process temperature up to 80.0 °C.

Equipment cleaning and maintenance - PROC 8a
Drain down and flush system prior to equipment break-in or maintenance.

Storage - PROC 1, PROC 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.

3.2 Workers

Exposure assessment (human): The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. 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	Identified use name: Use in functional fluids - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09 Subsequent service life relevant for that use: No. Environmental Release Category: ERC07
Environmental contributing scenarios	Use of functional fluid at industrial site - ERC07
Health Contributing scenarios	General exposures (closed systems) - PROC02 Bulk transfers - PROC01, PROC02, PROC03 Storage - PROC01, PROC02 Drum/batch transfers - PROC08b Filling of articles/equipment - PROC09 Filling of equipment from drums or containers - PROC08a General exposures (open systems) - PROC04 Remanufacture of reject articles - PROC09

Industry Association	Concawe
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) 2000 Maximum daily site tonnage (kg/day) 20000
Frequency and duration of use	Continuous release Emission days (days per year) 100
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 - Air	Treat air emission to provide a typical removal efficiency of 70%
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 (%) 88,9 Maximum allowable site tonnage (M _{safe}) based on release following total wastewater treatment removal (kg/day) 237000 Assumed on-site sewage treatment plant flow (m ³ /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 %.
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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. 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):	The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. Risk Characterisation Ratio (RCR) air 0.002 Risk Characterisation Ratio (RCR) water 0.084
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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.

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