

# NYSWITCHO™ 3X



## SAFETY DATA SHEET

Date of printing	2021-05-27
Date of issue/ Date of revision	2021-05-27
Date of previous issue	2021-02-08
Version	5.01

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

#### 1.1 Product identifier

Product name	NYSWITCHO™ 3X
UFI	060-10RS-H00T-KT4M
Product description	Insulating oil
Product type	Liquid.

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

Identified uses	
<input checked="" type="checkbox"/>	Use in functional fluids - Industrial
<input type="checkbox"/>	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
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e-mail address of person responsible for this SDS: ProductHSE@nynas.com

National contact: NYNAS-TECHNOL Handels-GmbH  
Grieskai 16  
A-8020 Graz  
AUSTRIA  
+43 316 73 46 00

#### 1.4 Emergency telephone number

Telephone number: +44 (0) 1235 239 670  
Hours of operation: 24 hour service

#### National advisory body/Poison Centre

+43 1 406 43 43 (Austrian Poison Control Centre)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Product definition Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Acute Tox. 4, H332

Skin Irrit. 2, H315

Asp. Tox. 1, H304

Aquatic Chronic 2, H411

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

Hazard pictograms



Signal word

Danger

Hazard statements

H304 - May be fatal if swallowed and enters airways.  
 H315 - Causes skin irritation.  
 H332 - Harmful if inhaled.  
 H411 - Toxic to aquatic life with long lasting effects.

#### Precautionary statements

Prevention

P280 - Wear protective gloves: 4 - 8 hours (breakthrough time): nitrile rubber.  
 P273 - Avoid release to the environment.  
 P261 - Avoid breathing vapour.  
 P264 - Wash hands thoroughly after handling.

Response

P391 - Collect spillage.  
 P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell.  
 P301 + P310, P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting.  
 P362 + P364 - Take off contaminated clothing and wash it before reuse.  
 P302 + P352 - IF ON SKIN: Wash with plenty of water.

Storage

Not applicable.

Disposal

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

Hazardous ingredients

Distillate (petroleum), hydrotreated middle

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	%	Regulation (EC) No. 1272/2008 [CLP]	Type
Distillate (petroleum), hydrotreated middle	REACH #: 01-2119489867-12 EC: 265-148-2 CAS: 64742-46-7 Index: 649-221-00-X	>95	Acute Tox. 4, H332 Skin Irrit. 2, H315 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	[1]
Distillate (petroleum), hydrotreated light naphthenic	REACH #: 01-2119480375-34 EC: 265-156-6 CAS: 64742-53-6 Index: 649-466-00-2	1 - 3	Asp. Tox. 1, H304	[1]
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 (M=1) Aquatic Chronic 1, H410 (M=1)  <b>See Section 16 for the full text of the H statements declared above.</b>	[1] [2]

Regulation (EC) No. 1272/2008 [CLP] Annex VI Nota N applies to the base oil(s) in this product. Nota N - The classification as a carcinogen need not apply if the full refining history is known and it can be shown that the substance from which it is produced is not a carcinogen.

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.

#### 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

Get medical attention. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

#### 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. If necessary, call a poison center or physician. Maintain an open airway.

#### Skin contact

Wash skin thoroughly with soap and water or use recognised skin cleanser. Continue to rinse for at least 10 minutes. 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.

## SECTION 4: First aid measures

Ingestion	<p>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.</p> <p>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.</p>
Protection of first-aiders	<p>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. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.</p> <p>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.</p>

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

#### Over-exposure signs/symptoms

Eye contact	<p>Adverse symptoms may include the following:                      pain or irritation                      watering                      redness</p>
Inhalation	<p>Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.</p>
Skin contact	<p>Adverse symptoms may include the following:                      irritation                      redness                      dryness                      cracking</p>
Ingestion	<p>Adverse symptoms may include the following:                      Nausea or vomiting.                      diarrhoea</p>

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

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

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media	<p>Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.</p>
Unsuitable extinguishing media	<p>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.</p>

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

Hazards from the substance or mixture	<p>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.</p>
Hazardous combustion products	<p>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.</p>

### 5.3 Advice for firefighters

## SECTION 5: Firefighting measures

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 also prescribe or limit actions to be taken.

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

### 6.2 Environmental precautions

Water polluting material. Collect spillage. 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.

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.

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.

## SECTION 6: Accidental release measures

### 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

See Section 1 for emergency contact information.  
 See Section 8 for information on appropriate personal protective equipment.  
 See Section 13 for additional waste treatment information.

## 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

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.

### 7.1 Precautions for safe handling

#### Protective measures

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.

Prevent the risk of slipping. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.

Avoid release to the environment. Use only bottom loading of tankers, in compliance with national or local legislation.

Nota : See Section 8 for information on appropriate personal protective equipment. See section 13 for waste disposal information.

#### Advice on general occupational hygiene

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.

### 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,

## SECTION 7: Handling and storage

reuse or dispose of containers unless adequate precautions are taken against these hazards. Store locked up. Protect from sunlight.

Seveso Directive - Reporting thresholds

### Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
E2	200 tonne	500 tonne

### 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
2,6-di-tert-butyl-p-cresol	<b>Regulation on Limit Values - MAC (Austria, 9/2020).</b> TWA: 10 mg/m <sup>3</sup> 8 hours.
2,6-di-tert-butyl-p-cresol	<b>[Air contaminant]</b> <b>Regulation on Limit Values - MAC (Austria, 9/2020).</b> TWA: 10 mg/m <sup>3</sup> 8 hours.

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 middle	DNEL	Short term Inhalation	5002,7 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Dermal	2,91 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	16,4 mg/m <sup>3</sup>	Workers	Systemic
Distillate (petroleum), hydrotreated light naphthenic 2,6-di-tert-butyl-p-cresol	DNEL	Long term Inhalation	5,58 mg/m <sup>3</sup>	Workers	Local
	DNEL	Long term Inhalation	5,8 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Inhalation	1,74 mg/m <sup>3</sup>	General population [Consumers]	Systemic
	DMEL	Long term Dermal	8,3 mg/kg bw/day	Workers	Systemic

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

	DMEL	Long term Dermal	5 mg/kg bw/day	General population [Consumers]	Systemic
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PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
2,6-di-tert-butyl-p-cresol	Soil	1,04 mg/kg wwt	Equilibrium Partitioning Assessment Factors
	Sewage Treatment Plant	100 mg/l	
	Sediment	1,29 mg/kg wwt	Equilibrium Partitioning Assessment Factors
	Secondary Poisoning	16,7 mg/kg	
	Marine water	0,4 µg/l	
Fresh water	4 µg/l	Assessment Factors	

PNEC Summary Hydrocarbon Block Method (Petrisk)

8.2 Exposure controls

Appropriate engineering controls

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. 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 gloves/protective clothing/eye protection/face protection. 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

Appearance

Physical state	Liquid.
Colour	Light yellow
Odour	Odourless/Light petroleum.
Odour threshold	Not applicable.
pH	Not applicable.
Melting point/freezing point	<-70°C



## SECTION 9: Physical and chemical properties

Initial boiling point and boiling range	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	Not available.
Flash point	Closed cup: >94°C (>201,2°F) [Pensky-Martens]
Auto-ignition temperature	>200°C (>392°F)
Decomposition temperature	>280°C
Viscosity	✓ Kinematic (40°C): 2,9 mm <sup>2</sup> /s (2,9 cSt)
Solubility(ies)	Insoluble in water.
Solubility in water	Not available.
Partition coefficient: n-octanol/ water	Not applicable.

Vapour pressure (Calculated)

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
2,6-di-tert-butyl-p-cresol	0,00975	0,0013				

Evaporation rate	Not available.
Relative density	Not available.
Density	0,86 g/cm <sup>3</sup> [15°C]
Explosive properties	Not available.
Oxidising properties	Not available.

## 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 <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
Distillate (petroleum), hydrotreated middle	LC50 Inhalation Dusts and mists	Rat - Male	4,6 mg/l	4 hours	API 1983(similar material)
	LD50 Dermal	Rabbit	>5000 mg/kg	-	API 1982 (similar material)
	LD50 Oral	Rat	>5000 mg/kg	-	API 1982 (similar material)
Distillate (petroleum), hydrotreated light	LC50 Inhalation Dusts and mists	Rat	>5,53 mg/l	4 hours	EMBSI 1988 (similar material)

**SECTION 11: Toxicological information**

naphthenic	LD50 Dermal	Rabbit	>5000 mg/kg	-	API 1982 (similar material) API 1982(similar material) Supplier's information Supplier's information
	LD50 Oral	Rat	>5000 mg/kg	-	
2,6-di-tert-butyl-p-cresol	LD50 Dermal	Rat	>5000 mg/kg	-	
	LD50 Oral	Rat	>5000 mg/kg	-	

Conclusion/Summary Harmful if inhaled.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
N/A	N/A	N/A	N/A	N/A	4,8
Distillate (petroleum), hydrotreated middle	N/A	N/A	N/A	N/A	4,6

Irritation/Corrosion

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

Skin Causes skin irritation.

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 middle	skin	Guinea pig	Not sensitizing	API 1984(similar material) API 1982(similar material)
Distillate (petroleum), hydrotreated light naphthenic	skin	Guinea pig	Not sensitizing	
2,6-di-tert-butyl-p-cresol	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

**SECTION 11: Toxicological information**

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	-
	476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	-
	473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Animal	Negative	-

**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. The product should not be regarded as a carcinogen.

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
Distillate (petroleum), hydrotreated middle	ASPIRATION HAZARD - Category 1
Distillate (petroleum), hydrotreated light naphthenic	ASPIRATION HAZARD - Category 1

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Distillate (petroleum), hydrotreated middle	Sub-chronic NOAEL Dermal	Rat - Male	25 mg/kg	5 days per week
	Sub-chronic NOAEL Dermal	Rat - Female	125 mg/kg	5 days per week
Distillate (petroleum), hydrotreated light naphthenic	Sub-chronic NOAEL Inhalation	Rat	>1,71 mg/l	4 hours; 2 days per week
	Dusts and mists Sub-chronic LOAEL Oral	Rat	125 mg/kg	-
	Sub-chronic NOAEL Dermal	Rat	>2000 mg/kg	-
2,6-di-tert-butyl-p-cresol	Sub-acute NOEL Inhalation	Rat	220 mg/m <sup>3</sup>	6 hours; 5 days per week
	Dusts and mists Sub-acute NOAEL Oral	Rat	25 mg/kg	28 days; 7 days per week

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
Distillate (petroleum), hydrotreated middle	Acute EL50 1,714 mg/l	Algae	72 hours
	Acute EL50 7,385 mg/l	Daphnia	48 hours
	Acute LL50 1,13 mg/l	Fish	96 hours
	Chronic NOEL 0,163 mg/l	Aquatic invertebrates.	21 days
	Chronic NOEL 0,069 mg/l Fresh water	Fish	14 days
Distillate (petroleum), hydrotreated light naphthenic	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
2,6-di-tert-butyl-p-cresol	Acute EC50 0,61 mg/l	Daphnia - Magna	48 hours
	Acute IC50 >0,4 mg/l	Algae - Desmodesmus Subspicatus	72 hours
	Acute LC50 >0,57 mg/l	Fish - Danio-erio	96 hours
	Chronic NOEC 0,316 mg/l	Daphnia - Magna	21 days

Conclusion/Summary Toxic to aquatic life with long lasting effects. Water polluting material.

12.2 Persistence and degradability

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

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

Conclusion/Summary Inherently biodegradable.

12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Distillate (petroleum), hydrotreated middle	>4	<500	low
Distillate (petroleum), hydrotreated light naphthenic	2 to 6	<500	low
2,6-di-tert-butyl-p-cresol	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

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

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

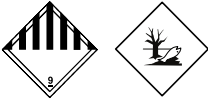
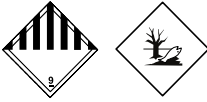
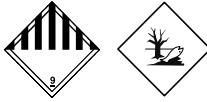

#### Packaging

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
<b>14.1 UN number</b>	UN3082	UN3082	UN3082	UN3082
<b>14.2 UN proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Distillate (petroleum), hydrotreated middle , liquid)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Distillate (petroleum), hydrotreated middle , liquid)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Distillate (petroleum), hydrotreated middle , liquid)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Distillate (petroleum), hydrotreated middle , liquid)
<b>14.3 Transport hazard class(es)</b>	9 	9 	9 	9 
<b>14.4 Packing group</b>	III	III	III	III
<b>14.5 Environmental hazards</b>	Yes.	Yes.	Yes.	Yes.

#### Additional information

ADR/RID

This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

**Hazard identification number** 90

**Special provisions** 274;335;375;601

**Tunnel code** -

## SECTION 14: Transport information

ADN	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. <b>Special provisions</b> 274;335;375;601
IMDG	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. <b>Emergency schedules</b> F-A, S-F <b>Special provisions</b> 274;335;969 <b>Remarks</b> Marine pollutant
IATA	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8. <b>Quantity limitation</b> Passenger and Cargo Aircraft: 450 L. Packaging instructions: 964. Cargo Aircraft Only: 450 L. Packaging instructions: 964. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: 964Y. <b>Special provisions</b> A97;A158;A197
14.6 Special precautions for user	<b>Transport within user's premises:</b> 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 Transport in bulk according to IMO instruments	Not applicable.
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

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.

#### Persistent Organic Pollutants

Not listed.

#### Seveso Directive

## SECTION 15: Regulatory information

This product is controlled under the Seveso Directive.

### Danger criteria

#### Category

E2

VbF class Not regulated.

Limitation of the use of organic solvents Permitted.

### 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.
Japan	<b>Japan inventory (CSCL):</b> All components are listed or exempted. <b>Japan inventory (ISHL):</b> 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.
United States	All components are active or exempted.
Thailand	All components are listed or exempted.
Turkey	All components are listed 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

**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
Acute Tox. 4, H332 Skin Irrit. 2, H315 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	Calculation method Calculation method Calculation method Calculation method

Full text of abbreviated H statements	H304 H315 H332 H400 H410 H411	May be fatal if swallowed and enters airways. Causes skin irritation. Harmful if inhaled. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. Toxic to aquatic life with long lasting effects.
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Full text of classifications [CLP/GHS]	Acute Tox. 4 Aquatic Acute 1  Aquatic Chronic 1 Aquatic Chronic 2  Asp. Tox. 1 Skin Irrit. 2	ACUTE TOXICITY - Category 4 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1  LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2  ASPIRATION HAZARD - Category 1 SKIN CORROSION/IRRITATION - Category 2
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Date of printing 2021-05-27

Date of issue/ Date of revision 2021-05-27

Date of previous issue 2021-02-08

Version 5.01

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## 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, 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</b> <b>Storage - PROC01, PROC02</b> <b>Drum/batch transfers - PROC08b</b> <b>Filling of articles/equipment - PROC09</b> <b>Remanufacture of reject articles - PROC09</b>
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) 0.0001 Release fraction to wastewater from process (initial release prior to RMM) 3.0E-5 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. No wastewater treatment required. Floors should be impervious, resistant to liquids and easy to clean.
Risk management measures - Air	Treat air emissions. >= 70%.
Risk management measures - Water	Water - minimum efficiency of 70.0 %.
Risk management measures - Soil	Soil - minimum 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 (%): 94.9. Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 94.9. Maximum allowable site tonnage (M <sub>safe</sub> ) based on release following total wastewater treatment removal (kg/day): 90 000 Assumed on-site sewage treatment plant flow (m <sup>3</sup> /d): 2000

### 2.2 Control of worker exposure

#### General measures applicable to all activities

Concentration of substance in mixture or article	Covers use 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)

- Bulk transfers - PROC 1, PROC 2  
Handle substance within a closed system.
- Drum/batch transfers Dedicated facility - PROC 8b  
Use drum pumps.
- Filling of articles/equipment Closed system - PROC 9  
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Transfer via enclosed lines.
- General exposures (closed systems) - PROC 2  
Sample via a closed loop or other system to avoid exposure.
- Remanufacture of reject articles - PROC 9  
Drain or remove substance from equipment prior to 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.
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### 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	Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for aspiration effects. Available hazard data do not enable the derivation of a DNEL for eye irritant effects. Risk management measures are based on qualitative risk characterisation.

## 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, PROC08a, PROC20, PROC08b <b>Subsequent service life relevant for that use:</b> No. <b>Environmental Release Category:</b> ERC09a
Environmental contributing scenarios	<b>Widespread use of functional fluid (indoor)</b> - ERC09a
Health Contributing scenarios	<b>Drum/batch transfers</b> - PROC08a <b>Operation of equipment containing engine oils and similar</b> - PROC20 <b>Equipment cleaning and maintenance</b> - PROC08a <b>Storage</b> - PROC01, PROC02 <b>General exposures (closed systems)</b> - 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) 0.0005 Maximum daily site tonnage (kg/day) 0.0013
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) 0.0005 Release fraction to wastewater from process (initial release prior to RMM) 0.0005 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>	No wastewater treatment required.
Risk management measures - Water	Water - minimum efficiency of 63.06%.
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 (%): 94.9. Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 94.9. Maximum allowable site tonnage ( $M_{\text{Safe}}$ ) based on release following total wastewater treatment removal ( kg/day): 0.33. Assumed domestic sewage treatment plant flow ( m <sup>3</sup> /day): 2000.

### 2.2 Control of worker exposure

#### General measures applicable to all activities

Concentration of substance in mixture or article	Covers use 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  
Provide a good standard of controlled ventilation (5 to 10 air changes per hour). Assumes process temperature up to 80.0 °C.

Equipment cleaning and maintenance - PROC 8a  
Covers use up to 4.0 hours per day 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      Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Available hazard data do not enable the derivation of a DNEL for aspiration effects. Available hazard data do not enable the derivation of a DNEL for eye irritant effects. Risk management measures are based on qualitative risk characterisation.