



## 20326 CENTRAL HYDRAULIC SYSTEM OIL 1L

### Liqui Moly GmbH

Chemwatch: 12-05094

Version No: 3.1.1.1

Safety Data Sheet according to WHMIS 2015 requirements

Chemwatch Hazard Alert Code: 2

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S.GHS.CAN.EN

#### SECTION 1 Identification

##### Product Identifier

Product name	20326 CENTRAL HYDRAULIC SYSTEM OIL 1L
Chemical Name	Not Applicable
Synonyms	Not Available
Chemical formula	Not Applicable
Other means of identification	Not Available

##### Recommended use of the chemical and restrictions on use

Relevant identified uses	Hydraulic oil.
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##### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	Liqui Moly GmbH
Address	Jerg-Wieland-Strasse 4 Ulm D-89081 Germany
Telephone	+49 731 1420 0
Fax	+49 731 1420 82
Website	<a href="http://www.liqui-moly.com/">http://www.liqui-moly.com/</a>
Email	Not Available

##### Emergency phone number

Association / Organisation	INFOTRAC
Emergency telephone numbers	+1800 535 5053 (US, Canada & Mexico)
Other emergency telephone numbers	+1 352 323 3500 (International)

#### SECTION 2 Hazard(s) identification

##### Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

##### Canadian WHMIS Symbols



Classification	Acute Toxicity (Inhalation) Category 4, Eye Irritation Category 2A, Carcinogenicity Category 2, Reproductive Toxicity Category 2, Aspiration Hazard Category 1, Acute Aquatic Hazard Category 3, Chronic Aquatic Hazard Category 3
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##### Label elements

Hazard pictogram(s)	
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Signal word **Danger****Hazard statement(s)**

<b>H332</b>	Harmful if inhaled.
<b>H319</b>	Causes serious eye irritation.
<b>H351</b>	Suspected of causing cancer.
<b>H361</b>	Suspected of damaging fertility or the unborn child.
<b>H304</b>	May be fatal if swallowed and enters airways.
<b>H412</b>	Harmful to aquatic life with long lasting effects.

**Physical and Health hazard(s) not otherwise classified**

Not Applicable

**Precautionary statement(s) Prevention**

<b>P201</b>	Obtain special instructions before use.
<b>P271</b>	Use only outdoors or in a well-ventilated area.
<b>P280</b>	Wear protective gloves/protective clothing/eye protection/face protection.
<b>P261</b>	Avoid breathing mist/vapours/spray.

**Precautionary statement(s) Response**

<b>P301+P310</b>	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider.
<b>P308+P313</b>	IF exposed or concerned: Get medical advice/ attention.
<b>P331</b>	Do NOT induce vomiting.
<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Precautionary statement(s) Storage**

<b>P405</b>	Store locked up.
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**Precautionary statement(s) Disposal**

<b>P501</b>	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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**SECTION 3 Composition / information on ingredients****Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
68649-11-6	60-80	<u>1-decene dimer, hydrogenated</u>
Not Available	0.1-<1	<u>bis(2-methylpentan-2-yl)dithiophosphoric acid/ amines</u>
80584-90-3	0.1-<1	<u>diisooctyl aminomethyl tolyltriazole</u>
128-37-0	0.1-<0.25	<u>2,6-di-tert-butyl-4-methylphenol</u>
95-38-5	0.01-<0.25	<u>2-(8-heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol</u>

**SECTION 4 First-aid measures****Description of first aid measures**

<b>Eye Contact</b>	If this product comes in contact with eyes: <ul style="list-style-type: none"> <li>Wash out immediately with water.</li> <li>If irritation continues, seek medical attention.</li> <li>Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	If skin contact occurs: <ul style="list-style-type: none"> <li>Immediately remove all contaminated clothing, including footwear.</li> <li>Flush skin and hair with running water (and soap if available).</li> <li>Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>If fumes or combustion products are inhaled remove from contaminated area.</li> <li>Lay patient down. Keep warm and rested.</li> <li>Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>Transport to hospital, or doctor.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>Immediately give a glass of water.</li> <li>First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> <li>If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.</li> </ul>

**Indication of any immediate medical attention and special treatment needed**

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is

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considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.  
Treat symptomatically.

## SECTION 5 Fire-fighting measures

### Extinguishing media

- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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### Special protective equipment and precautions for fire-fighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ On combustion, may emit toxic fumes of carbon monoxide (CO).</li> </ul> <p>Combustion products include: carbon dioxide (CO<sub>2</sub>) other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.</p>

## SECTION 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

<b>Minor Spills</b>	<p>Slippery when spilt.</p> <ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> </ul>
<b>Major Spills</b>	<p>Slippery when spilt. Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 Handling and storage

### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Electrostatic discharge may be generated during pumping - this may result in fire.</li> <li>▶ Ensure electrical continuity by bonding and grounding (earthing) all equipment.</li> <li>▶ Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<math>\leq 1</math> m/sec until fill pipe submerged to twice its diameter, then <math>\leq 7</math> m/sec).</li> <li>▶ Avoid splash filling.</li> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> </ul>

### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Metal can or drum</li> <li>▶ Packaging as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	▶ Avoid reaction with oxidising agents

## SECTION 8 Exposure controls / personal protection

## Control parameters

## Occupational Exposure Limits (OEL)

## INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	1-decene dimer, hydrogenated	Oil mist, mineral	5 mg/m3	10 mg/m3	Not Available	Not Available
Canada - Nova Scotia Occupational Exposure Limits	1-decene dimer, hydrogenated	Oil mist - mineral	5 mg/m3	10 mg/m3	Not Available	TLV Basis: lung. As sampled by method that does not collect vapor.
Canada - Alberta Occupational Exposure Limits	1-decene dimer, hydrogenated	Oil mist, mineral	5 mg/m3	10 mg/m3	Not Available	Not Available
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	1-decene dimer, hydrogenated	Oil mist, mineral	5 mg/m3	10 mg/m3	Not Available	Not Available
Canada - Manitoba Occupational Exposure Limits	1-decene dimer, hydrogenated	Not Available	Not Available	Not Available	Not Available	TLV® Basis: URT irr
Canada - Manitoba Occupational Exposure Limits	1-decene dimer, hydrogenated	Not Available	5 mg/m3	Not Available	Not Available	TLV® Basis: URT irr
Canada - British Columbia Occupational Exposure Limits	1-decene dimer, hydrogenated	Oil mist - mineral, severely refined	1 mg/m3	Not Available	Not Available	Not Available
Canada - British Columbia Occupational Exposure Limits	1-decene dimer, hydrogenated	Oil mist - mineral, mildly refined	0.2 mg/m3	Not Available	Not Available	Not Available
Canada - Prince Edward Island Occupational Exposure Limits	1-decene dimer, hydrogenated	Mineral oil, excluding metal working fluids - Pure, highly and severely refined	5 mg/m3	Not Available	Not Available	TLV® Basis: URT irr
Canada - Prince Edward Island Occupational Exposure Limits	1-decene dimer, hydrogenated	Mineral oil, excluding metal working fluids - Poorly and mildly refined	Not Available	Not Available	Not Available	TLV® Basis: URT irr
Canada - Northwest Territories Occupational Exposure Limits	1-decene dimer, hydrogenated	Oil mist, mineral	5 mg/m3	10 mg/m3	Not Available	Not Available
Canada - Quebec Permissible Exposure Values for Airborne Contaminants	1-decene dimer, hydrogenated	Mineral oil (mist)	5 mg/m3	10 mg/m3	Not Available	Not Available
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	2,6-di-tert-butyl-4-methylphenol	2,6-Ditert, butyl-p-cresol	10 mg/m3	20 mg/m3	Not Available	Not Available
Canada - Nova Scotia Occupational Exposure Limits	2,6-di-tert-butyl-4-methylphenol	Butylated hydroxytoluene [BHT]	2 mg/m3	Not Available	Not Available	TLV Basis: upper respiratory tract irritation
Canada - Alberta Occupational Exposure Limits	2,6-di-tert-butyl-4-methylphenol	Butylated hydroxytoluene (BHT) (2,6-Di-tert-butyl-p-cresol)	10 mg/m3	Not Available	Not Available	Not Available
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	2,6-di-tert-butyl-4-methylphenol	2,6-Di-tert-butyl-p-cresol (butylated hydroxytoluene or BHT) (inhalable fraction++ and vapour)	2 mg/m3	4 mg/m3	Not Available	Not Available
Canada - Manitoba Occupational Exposure Limits	2,6-di-tert-butyl-4-methylphenol	Not Available	2 mg/m3	Not Available	Not Available	TLV® Basis: URT irr
Canada - British Columbia Occupational Exposure Limits	2,6-di-tert-butyl-4-methylphenol	Butylated hydroxytoluene (BHT), Inhalable, (2,6-Di-tert-butyl-p-cresol)	2 mg/m3	Not Available	Not Available	Not Available
Canada - Prince Edward Island Occupational Exposure Limits	2,6-di-tert-butyl-4-methylphenol	Butylated hydroxytoluene	2 mg/m3	Not Available	Not Available	TLV® Basis: URT irr
Canada - Northwest Territories Occupational Exposure Limits	2,6-di-tert-butyl-4-methylphenol	2,6-Di-tert-butyl-p-cresol (butylated hydroxytoluene or BHT) (inhalable fraction and vapour)	2 mg/m3	4 mg/m3	Not Available	Not Available
Canada - Quebec Permissible Exposure Values for Airborne Contaminants	2,6-di-tert-butyl-4-methylphenol	2,6-Di-tert-butyl-p-cresol	Not Available	10 mg/m3	Not Available	Not Available

## Emergency Limits

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
1-decene dimer, hydrogenated	Mineral oil, heavy or light; (paraffin oil; Deobase, deodorized; heavy paraffinic; heavy naphthenic); distillates; includes 64741-53-3, 64741-88-4, 8042-47-5, 8012-95-1; 64742-54-7	140 mg/m3	1,500 mg/m3	8,900 mg/m3


Ingredient	Original IDLH	Revised IDLH
1-decene dimer, hydrogenated	2,500 mg/m3	Not Available
bis(2-methylpentan-2-yl)dithiophosphoric acid/ amines	Not Available	Not Available
diisooctyl aminomethyl tolyltriazole	Not Available	Not Available
2,6-di-tert-butyl-4-methylphenol	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
2-(8-heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol	Not Available	Not Available

**Occupational Exposure Banding**

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
bis(2-methylpentan-2-yl)dithiophosphoric acid/ amines	E	≤ 0.01 mg/m <sup>3</sup>
diisooctyl aminomethyl tolyltriazole	E	≤ 0.1 ppm
2-(8-heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol	E	≤ 0.1 ppm
<b>Notes:</b>	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.	

**Exposure controls**

<b>Appropriate engineering controls</b>	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C apron.</li> <li>▶ Barrier cream.</li> <li>▶ Skin cleansing cream.</li> </ul>

**Respiratory protection**

Type AK-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AK-AUS P2	-	AK-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AK-AUS / Class 1 P2	-
up to 100 x ES	-	AK-2 P2	AK-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

**SECTION 9 Physical and chemical properties****Information on basic physical and chemical properties**

<b>Appearance</b>	Green colour liquid with characteristic odour; not miscible with water.		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	0.825

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<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Applicable	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	19.8, 6.5 @ 100C
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	150	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Immiscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

## SECTION 10 Stability and reactivity

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 Toxicological information

## Information on toxicological effects

<b>Inhaled</b>	Inhalation hazard is increased at higher temperatures. 512r20ll
<b>Ingestion</b>	Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733)
<b>Skin Contact</b>	There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
<b>Eye</b>	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
<b>Chronic</b>	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

20326 CENTRAL HYDRAULIC SYSTEM OIL 1L	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation (None) LC50: 14.5 mg/l/4h <sup>[2]</sup>	Not Available
	Inhalation (None) LC50: 2.38 mg/l/4h <sup>[2]</sup>	
1-decene dimer, hydrogenated	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
bis(2-methylpentan-2-yl)dithiophosphoric acid/ amines	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
diisooctyl aminomethyl tolyltriazole	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral(Rat) LD50 3300 mg/kg <sup>[2]</sup>	Not Available
2,6-di-tert-butyl-4-methylphenol	<b>TOXICITY</b>	<b>IRRITATION</b>
	=10700 mg/kg <sup>[2]</sup>	Eye (rabbit): 100 mg/24h-moderate
	=2500 mg/kg <sup>[2]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	138-1739 mg/kg <sup>[2]</sup>	Skin (human): 500 mg/48h - mild
	200 mg/kg <sup>[2]</sup>	Skin (rabbit):500 mg/48h-moderate
	3550 mg/kg <sup>[2]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>

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	400 mg/kg <sup>[2]</sup>	
	80 mg/kg <sup>[2]</sup>	
	8000 mg/kg <sup>[2]</sup>	
	940-2100 mg/kg <sup>[2]</sup>	
	Dermal (rabbit) LD50: >2000 mg/kg <sup>[2]</sup>	
	Oral(Mouse) LD50 =1800 mg/kg <sup>[2]</sup>	
	Oral(Mouse) LD50 =2000 mg/kg <sup>[2]</sup>	
	Oral(Rabbit) LD50 =3200 mg/kg <sup>[2]</sup>	
	Oral(Rat) LD50 =1906 mg/kg <sup>[2]</sup>	
	Oral(Rat) LD50 =1970 mg/kg <sup>[2]</sup>	
	Oral(Rat) LD50 =2255 mg/kg <sup>[2]</sup>	
	Oral(Rat) LD50 =5800 mg/kg <sup>[2]</sup>	
	Oral(Rat) LD50 >10000 mg/kg <sup>[2]</sup>	
	Oral(Rat) LD50 >2000 mg/kg <sup>[2]</sup>	
	Oral(Rat) LD50 890 mg/kg <sup>[2]</sup>	
2-(8-heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral(Rat) LD50 870 mg/kg <sup>[2]</sup>	Eye (rabbit): Severe *
		Skin (rabbit): Severe *
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

<b>1-DECENE DIMER, HYDROGENATED</b>	For poly-alpha-olefins (PAOs): PAOs are highly branched, isoparaffinic chemicals produced by oligomerisation of 1-octene, 1-decene and/or 1-dodecene. The crude polyalphaolefin mixture is then distilled into appropriate product fractions to meet specific viscosity specifications and hydrogenated. In existing data, there appears to be no data to show that these structural analogs cause health effects. In addition, there is evidence in the literature that alkanes with 30 or more carbon atoms are unlikely to be absorbed when given by mouth.
<b>BIS(2-METHYLPENTAN-2-YL)DITHIOPHOSPHORIC ACID/ AMINES</b>	These rat oral LD50 is greater than 10 ml/kg bw. No mortality occurred. No signs of systemic toxicity, or behavioral changes were reported during the study, and no abnormalities were noted at necropsy. In a second study this substance shows evidence of toxicity when tested in accordance with OECD 401. The dermal route for acute toxicity is appropriate if the physicochemical properties suggest there is potential for a significant rate of absorption through the skin. The scientific literature regarding dermal toxicity states that for those substances with a log Kow greater than 5 there is very limited potential for dermal absorption (e.g., 10% absorption) (Annals of Occupational Hygiene, 47(8):641-652, 2003). The test material has a Log Kow greater than 7.1 (small portion < 0.3) thereby demonstrating that it has very limited dermal absorption potential. In contrast, oral absorption can be relatively fast due to contact surface areas in the GI tract resulting in a peak concentration in the body, and GI tract has been regarded as the route resulting in higher bioavailability. Skin sensitisation: EC3 value was determined to be 9.39%. Per the CLP guidance, substances are to be classified as skin sensitization 1A when the EC3 value is less than 2% and are to be classified as skin sensitization 1B when the EC3 value is greater than 2%. Repeat dose toxicity: Oral administration of the test substance to rats by gavage in accordance with OECD Test Guideline 407 (1995) produces treatment related microscopic changes in the adrenal glands of the male and female rats and kidneys of the male rats of the 150 and 500 mg/kg/day groups. The adrenal gland changes are accompanied by an increase in adrenal weight only at the high doses level. The male kidney effects are accompanied by an increase in hyaline droplets which is consistent with male rat species specific effect resulting from the excessive accumulation of a2-microglobulin in renal proximal tubular epithelial cells. Microscopic changes also are present in the stomach of the male and female rats of the 500 mg/kg/day group and these changes were possibly treatment related. * REACH Dossier
<b>DIISOCTYL AMINOMETHYL TOLYLTRIAZOLE</b>	* RT Vanderbilt MSDS for Cuvan 303 CAS 94270-86-7 (mixture of isomers)
<b>2,6-DI-TERT-BUTYL-4-METHYLPHENOL</b>	for bridged alkyl phenols: <b>Acute toxicity:</b> Acute oral and dermal toxicity data are available for all but two of the substances in the group. The data show that acute toxicity of these substances is low. The testing for acute toxicity spans five decades <b>Repeat dose toxicity:</b> Repeat dose studies on the members of this category include both subchronic and chronic exposures. The liver is identified as the target organ in rats for all of the substances tested. Data show that acute toxicity following oral and topical use of hindered phenols is low. They are not proven to cause mutations. However, long term use may affect the liver, thyroid, kidney and lymph nodes. Liver tumours have been reported. The substance is classified by IARC as Group 3: <b>NOT</b> classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. <b>NOTE:</b> Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA. * Degussa SDS Effects such as behavioral changes, reduction in body weight gain, and decrement in body weight have been observed after long-term administration of BHT to mice and rats. Toxic effects may be attributed more to BHT metabolites than to their parent compound, only a few studies have focused on their carcinogenicity and toxicity, and not only on that of BHT. The metabolite BHT-QM (syn: 2,6-di-tert-butyl-1,4-methylene-2,5-cyclohexadien-1-one, CAS RN: 2607-52-5) is a very reactive compound which is considered to play a significant role in hepatotoxicity, pneumotoxicity, and skin tumor promotion in mice. In addition, it was reported that another quinone derivative, BHT-OH(t)QM (syn 2-tert-butyl-6-(2-hydroxy-tert-butyl-4-methylene-2,5-cyclohexadien-1-one, CAS RN: 124755-19-7), is chemically more reactive than BHT-QM, and it has been recognized as the principal metabolite responsible for lung tumor promotion activity of BHT in mice. BHT has been reported to exert prooxidant effects under certain conditions. Thus, when BHT was added in excess to a wheat seedling medium in aerobic conditions, an enhancement of the generation rate of superoxide anion was observed. This is a reactive particle that may damage cellular structures at high concentrations. In addition, an increase in hepatic microsomal lipid peroxidation was observed in rats fed with diets containing 0.2% of BHT for 30 days. Due to this ability of BHT to exert prooxidant effects at high concentrations, it has been used to induce experimental models of oxidative stress in several animals and fungi in order to study the protective effects of other compounds. Some authors have reported that at high aeration rate, BHT can react with molecular oxygen rather than with the reactive oxygen species present, yielding BHT-phenoxyl radical and superoxide anion. In addition, the phenolic radical itself may undergo redox recycling which can be a critical factor depending on the reductant involved. However, it has to be noted that BHT-phenoxyl radical has been reported to be relatively stable. Furthermore, the potential reactivity of BHT-derived metabolites should be taken into account; some studies reported that not only BHT but also its metabolites, such as BHT-Q and



	<p>BHT-QM, can act as prooxidant. As BHT undergoes several reactions during biotransformation, a large number of intermediate metabolites have been identified. However, their nature and concentration depend on the environmental conditions and on the animal species. Although the changes undergone by BHT during in vivo digestion processes have not been studied, after submission of a fluid deep-frying fat containing BHT and BHT-QM to an in vitro gastrointestinal digestion model, both these were detected in the digested samples. These results indicate that BHT and its toxic metabolite could remain bioaccessible for intestinal absorption. Studies concerning BHT metabolism have shown that, unlike other synthetic antioxidants, BHT is a potent inducer of the microsomal monooxygenase system and its major route of degradation is oxidation catalyzed by cytochrome P450. Studies have reported potential toxicity derived from the ingestion or administration of BHT. As for acute oral toxicity, although this is considered low in animals, it must be noted that 2 clinical cases were reported in patients who suffered acute neurotoxicity and gastritis after ingesting a high dose of BHT (4 and 80 g without medical prescription) to cure recurrent genital herpes. Regarding short-term subchronic toxicity studies, it has been reported that BHT causes dose-related increase in the incidence and severity of</p>
2-(8-HEPTADECENYL)-4,5-DIHYDRO-1H-IMIDAZOLE-1-ETHANOL	<p>For imidazoline surfactants (amidoamine/ imidazoline - AAI)s</p> <p>All substances within the AAI group show the same reactive groups, show similar composition of amide, imidazoline, and some dimer structures of both, with the length of original EA amines used for production as biggest difference. Inherent reactivity and toxicity is not expected to differ much between these substances.</p> <p>All in vivo skin irritation/corrosion studies performed on AAI substances all indicate them to be corrosive following 4 hour exposure. There do not seem to be big differences in response with the variation on EA length used for the production of the AAI.</p> <p>The available data available for AAI substances indicate that for AAI based on shorter polyethyleneamines (EA), higher toxicity is observed compared to AAI based on longer EA.</p> <p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.</p> <p>Generally these amphoteric surfactants do not seem to irritate the skin, but they mildly irritate the eye. They also do not cause mutations.</p> <p>Information on effects on reproduction and ability to cause cancer is unavailable.</p>
1-DECENE DIMER, HYDROGENATED & BIS(2-METHYLPENTAN-2-YL)DITHIOPHOSPHORIC ACID/ AMINES & DIISOCTYL AMINOMETHYL TOLYLTRIAZOLE & 2-(8-HEPTADECENYL)-4,5-DIHYDRO-1H-IMIDAZOLE-1-ETHANOL	No significant acute toxicological data identified in literature search.
BIS(2-METHYLPENTAN-2-YL)DITHIOPHOSPHORIC ACID/ AMINES & DIISOCTYL AMINOMETHYL TOLYLTRIAZOLE & 2-(8-HEPTADECENYL)-4,5-DIHYDRO-1H-IMIDAZOLE-1-ETHANOL	<p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important.</p>
2,6-DI-TERT-BUTYL-4-METHYLPHENOL & 2-(8-HEPTADECENYL)-4,5-DIHYDRO-1H-IMIDAZOLE-1-ETHANOL	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.</p> <p>The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.</p>

Acute Toxicity	✓	Carcinogenicity	✓
Skin Irritation/Corrosion	✗	Reproductivity	✓
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✓

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## SECTION 12 Ecological information

### Toxicity

20326 CENTRAL HYDRAULIC SYSTEM OIL 1L	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
1-decene dimer, hydrogenated	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
bis(2-methylpentan-2-yl)dithiophosphoric acid/ amines	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
diisooctyl aminomethyl tolyltriazole	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available



## 20326 CENTRAL HYDRAULIC SYSTEM OIL 1L

2,6-di-tert-butyl-4-methylphenol	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	0.199mg/L	2
	EC50	48	Crustacea	>0.17mg/L	2
	EC50	72	Algae or other aquatic plants	>0.24mg/L	2
	NOEC	504	Crustacea	0.023mg/L	2
2-(8-heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48	Crustacea	0.163mg/L	2
	EC50	72	Algae or other aquatic plants	0.017mg/L	2
	EC10	72	Algae or other aquatic plants	0.012mg/L	2
	NOEC	72	Algae or other aquatic plants	0.011mg/L	2
<b>Legend:</b> Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data					

**DO NOT** discharge into sewer or waterways.

## Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
2,6-di-tert-butyl-4-methylphenol	HIGH	HIGH
2-(8-heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol	LOW	LOW

## Bioaccumulative potential

Ingredient	Bioaccumulation
2,6-di-tert-butyl-4-methylphenol	HIGH (BCF = 2500)
2-(8-heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol	LOW (LogKOW = 7.5137)

## Mobility in soil

Ingredient	Mobility
2,6-di-tert-butyl-4-methylphenol	LOW (KOC = 23030)
2-(8-heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol	LOW (KOC = 206300)

## SECTION 13 Disposal considerations

## Waste treatment methods

<b>Product / Packaging disposal</b>	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▶ Reduction</li> <li>▶ Reuse</li> <li>▶ Recycling</li> <li>▶ Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</p> <ul style="list-style-type: none"> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▶ Consult State Land Waste Authority for disposal.</li> <li>▶ Bury or incinerate residue at an approved site.</li> <li>▶ Recycle containers if possible, or dispose of in an authorised landfill.</li> </ul>
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## SECTION 14 Transport information

## Labels Required

<b>Marine Pollutant</b>	NO
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**Land transport (TDG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

## SECTION 15 Regulatory information

Continued...

**Safety, health and environmental regulations / legislation specific to the substance or mixture**

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

**1-decene dimer, hydrogenated is found on the following regulatory lists**

Canada Categorization decisions for all DSL substances

Canada Domestic Substances List (DSL)

Chemical Footprint Project - Chemicals of High Concern List

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans

**bis(2-methylpentan-2-yl)dithiophosphoric acid/ amines is found on the following regulatory lists**

Not Applicable

**diisooctyl aminomethyl tolyltriazole is found on the following regulatory lists**

Canada Categorization decisions for all DSL substances

Canada Domestic Substances List (DSL)

**2,6-di-tert-butyl-4-methylphenol is found on the following regulatory lists**

Canada Categorization decisions for all DSL substances

Canada Domestic Substances List (DSL)

Canada Non-Domestic Substances List (NDSL)

Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

**2-(8-heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol is found on the following regulatory lists**

Canada Categorization decisions for all DSL substances

Canada Domestic Substances List (DSL)

Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS

**National Inventory Status**

National Inventory	Status
Australia - AIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (1-decene dimer, hydrogenated; diisooctyl aminomethyl tolyltriazole; 2-(8-heptadecenyl)-4,5-dihydro-1H-imidazole-1-ethanol)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	No (diisooctyl aminomethyl tolyltriazole)
Taiwan - TCSI	Yes
Mexico - INSQ	No (1-decene dimer, hydrogenated; diisooctyl aminomethyl tolyltriazole)
Vietnam - NCI	Yes
Russia - ARIPS	No (diisooctyl aminomethyl tolyltriazole)
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

**SECTION 16 Other information**

<b>Revision Date</b>	01/11/2019
<b>Initial Date</b>	09/07/2018

**SDS Version Summary**

Version	Issue Date	Sections Updated
3.1.1.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

**Definitions and abbreviations**

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

ACGIH: American Conference of Governmental Industrial Hygienists

**20326 CENTRAL HYDRAULIC SYSTEM OIL 1L**

STEL: Short Term Exposure Limit  
TEEL: Temporary Emergency Exposure Limit.  
IDLH: Immediately Dangerous to Life or Health Concentrations  
OSF: Odour Safety Factor  
NOAEL :No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index

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