22090, 22083 FULLY SYNTHETIC HYPOID GEAR OIL (GL4/5) 75W-90 1L, 20L
Liqui Moly GmbH

Chemwatch Hazard Alert Code: **2**

Chemwatch: **5395-74**
Version No: **3.1.1.1**
Safety Data Sheet according to WHMIS 2015 requirements

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S.GHS.CAN.EN

SECTION 1 Identification

Product Identifier

Product name	22090, 22083 FULLY SYNTHETIC HYPOID GEAR OIL (GL4/5) 75W-90 1L, 20L
Synonyms	Not Available
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Use according to manufacturer's directions.

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	http://www.liqui-moly.com/
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	Eye Irritation Category 2A, Skin Sensitizer Category 1, Reproductive Toxicity Category 1B, Chronic Aquatic Hazard Category 3

Label elements

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

Hazard statement(s)

Page 1 continued...

H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H360	May damage fertility or the unborn child.
H412	Harmful to aquatic life with long lasting effects.

Physical and Health hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing mist/vapours/spray.
P273	Avoid release to the environment.

Precautionary statement(s) Response

P308+P313	IF exposed or concerned: Get medical advice/ attention.
P321	Specific treatment (see advice on this label).
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P305+P351+P338	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

P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
68037-01-4	30-60	1-decene homopolymer, hydrogenated
64741-88-4.	30-60	paraffinic distillate, heavy, solvent-refined (severe)
68937-96-2	<5	di-tert-butyl polysulfides
Not Available	<2	bis(2-methylpentan-2-yl)dithiophosphoric acid/ amines
597-82-0	<1	O,O,O-triphenyl phosphorothionate
91648-65-6	<1	1,3,4-thiadiazolidine-2,5-dithione, tert-nonanethiol derivs.
13703-82-7	<1	magnesium borate

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Wash out immediately with fresh running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▸ Other measures are usually unnecessary.
Ingestion	▸ Immediately give a glass of water. ▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. ▸ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
- Heavy and persistent skin contamination over many years may lead to dysplastic changes. Pre-existing skin disorders may be aggravated by exposure to this product.
- In general, emesis induction is unnecessary with high viscosity, low volatility products, i.e. most oils and greases.
- High pressure accidental injection through the skin should be assessed for possible incision, irrigation and/or debridement.

NOTE: Injuries may not seem serious at first, but within a few hours tissue may become swollen, discoloured and extremely painful with extensive subcutaneous necrosis. Product may be forced through considerable distances along tissue planes.

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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

Fire Incompatibility	‣ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Special protective equipment and precautions for fire-fighters

Fire Fighting	‣ Alert Fire Brigade and tell them location and nature of hazard. ‣ Wear full body protective clothing with breathing apparatus. ‣ Prevent, by any means available, spillage from entering drains or water course. ‣ Use water delivered as a fine spray to control fire and cool adjacent area.
Fire/Explosion Hazard	‣ Combustible. ‣ Slight fire hazard when exposed to heat or flame. ‣ Heating may cause expansion or decomposition leading to violent rupture of containers. ‣ On combustion, may emit toxic fumes of carbon monoxide (CO). Combustion products include: carbon dioxide (CO_2) phosphorus oxides (POx) sulfur oxides (SOx) other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes. **CARE**: Water in contact with hot liquid may cause foaming and a steam explosion with wide scattering of hot oil and possible severe burns. Foaming may cause overflow of containers and may result in possible fire.

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

Minor Spills	Slippery when spilt. ‣ Remove all ignition sources. ‣ Clean up all spills immediately. ‣ Avoid breathing vapours and contact with skin and eyes. ‣ Control personal contact with the substance, by using protective equipment.
Major Spills	Slippery when spilt. Moderate hazard. ‣ Clear area of personnel and move upwind. ‣ Alert Fire Brigade and tell them location and nature of hazard. ‣ Wear breathing apparatus plus protective gloves.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	‣ **DO NOT** allow clothing wet with material to stay in contact with skin ‣ Electrostatic discharge may be generated during pumping - this may result in fire. ‣ Ensure electrical continuity by bonding and grounding (earthing) all equipment. ‣ Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<=1 m/sec until fill pipe submerged to twice its diameter, then <= 7 m/sec). ‣ Avoid splash filling. ‣ Avoid all personal contact, including inhalation. ‣ Wear protective clothing when risk of exposure occurs. ‣ Use in a well-ventilated area. ‣ Prevent concentration in hollows and sumps.
Other information	‣ Store in original containers. ‣ Keep containers securely sealed. ‣ No smoking, naked lights or ignition sources. ‣ Store in a cool, dry, well-ventilated area.

Conditions for safe storage, including any incompatibilities

Suitable container	‣ Metal can or drum ‣ Packaging as recommended by manufacturer. ‣ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	**CARE**: Water in contact with heated material may cause foaming or a steam explosion with possible severe burns from wide scattering of hot material. Resultant overflow of containers may result in fire.

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	▸ 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 - Nova Scotia Occupational Exposure Limits	magnesium borate	Borate, Inorganic compounds	2 mg/m3	6 mg/m3	Not Available	TLV Basis: upper respiratory tract irritation
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	magnesium borate	Borate compounds, inorganic (inhalable fraction++)	2 mg/m3	6 mg/m3	Not Available	Not Available
Canada - Manitoba Occupational Exposure Limits	magnesium borate	Not Available	2 mg/m3	6 mg/m3	Not Available	TLV® Basis: URT irr
Canada - Prince Edward Island Occupational Exposure Limits	magnesium borate	Borate compounds, inorganic	2 mg/m3	6 mg/m3	Not Available	TLV® Basis: URT irr
Canada - Northwest Territories Occupational Exposure Limits	magnesium borate	Borate compounds, inorganic (inhalable fraction)	2 mg/m3	6 mg/m3	Not Available	Not Available

Emergency Limits

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
1-decene homopolymer, hydrogenated	Decene, 1-, homopolymer, hydrogenated	30 mg/m3	330 mg/m3	2,000 mg/m3

Ingredient	Original IDLH	Revised IDLH
1-decene homopolymer, hydrogenated	Not Available	Not Available
paraffinic distillate, heavy, solvent-refined (severe)	Not Available	Not Available
di-tert-butyl polysulfides	Not Available	Not Available
bis(2-methylpentan-2-yl)dithiophosphoric acid/ amines	Not Available	Not Available
O,O,O-triphenyl phosphorothionate	Not Available	Not Available
1,3,4-thiadiazolidine-2,5-dithione, tert-nonanethiol derivs.	Not Available	Not Available
magnesium borate	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
di-tert-butyl polysulfides	D	> 0.1 to ≤ 1 ppm
bis(2-methylpentan-2-yl)dithiophosphoric acid/ amines	E	≤ 0.01 mg/m³
O,O,O-triphenyl phosphorothionate	E	≤ 0.01 mg/m³
1,3,4-thiadiazolidine-2,5-dithione, tert-nonanethiol derivs.	D	> 0.1 to ≤ 1 ppm
Notes:	*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

Appropriate engineering controls	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.
Personal protection	
Eye and face protection	▸ Safety glasses with side shields. ▸ Chemical goggles. ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing

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	the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	▸ Wear chemical protective gloves, e.g. PVC. ▸ Wear safety footwear or safety gumboots, e.g. Rubber **NOTE:** ▸ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ▸ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. 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.
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ P.V.C apron. ▸ Barrier cream. ▸ Skin cleansing cream.

Respiratory protection

Type A-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	A-AUS P2	-	A-PAPR-AUS / Class 1 P2
up to 50 x ES	-	A-AUS / Class 1 P2	-
up to 100 x ES	-	A-2 P2	A-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(SO2), G = Agricultural chemicals, K = Ammonia(NH3), 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

Appearance	Yellow liquid with characteristic odour; not miscible with water.

Physical state	Liquid	**Relative density (Water = 1)**	0.87
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Applicable	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	-57	**Viscosity (cSt)**	106 @ 40C, 15.6 @ 100C
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Applicable
Flash point (°C)	210	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Applicable	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Available	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Available	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water	Immiscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7

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Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation hazard is increased at higher temperatures. Not normally a hazard due to non-volatile nature of product Inhalation of oil droplets or aerosols may cause discomfort and may produce chemical inflammation of the lungs.
Ingestion	The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The liquid may be able to be mixed with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives. Open cuts, abraded or irritated skin should not be exposed to this material The material may accentuate any pre-existing dermatitis condition 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.
Eye	This material can cause eye irritation and damage in some persons.
Chronic	Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Ample evidence exists from experimentation that reduced human fertility is directly caused by exposure to the material. Ample evidence exists, from results in experimentation, that developmental disorders are directly caused by human exposure to the material. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Oil may contact the skin or be inhaled. Extended exposure can lead to eczema, inflammation of hair follicles, pigmentation of the face and warts on the soles of the feet.

	TOXICITY	IRRITATION
22090, 22083 FULLY SYNTHETIC HYPOID GEAR OIL (GL4/5) 75W-90 1L, 20L	Not Available	Not Available
1-decene homopolymer, hydrogenated	**TOXICITY**	**IRRITATION**
	Inhalation (rat) LC50: 1.17 mg/l/1ht[2]	Eye*(rabbit):0-4/110.0-nonirritant
		Skin**(rabbit)-0.5/8.0-nonirritant
paraffinic distillate, heavy, solvent-refined (severe)	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: >5000 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
		Skin: no adverse effect observed (not irritating)[1]
di-tert-butyl polysulfides	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: ~6500 mg/kg[2]	Eye (rabbit): slight;y irritating
	Oral (rat) LD50: >5000 mg/kg[2]	Skin (rabbit): slight;y irritating
bis(2-methylpentan-2-yl)dithiophosphoric acid/ amines	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
O,O,O-triphenyl phosphorothionate	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
1,3,4-thiadiazolidine-2,5-dithione, tert-nonanethiol derivs.	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: >2000 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
	Inhalation (rat) LC50: >2.75 mg/l/4H[2]	Skin: no adverse effect observed (not irritating)[1]
	Oral (rat) LD50: >10000 mg/kg[2]	
magnesium borate	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: >2000 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
	Oral (rat) LD50: 5250 mg/kg[2]	Skin: no adverse effect observed (not irritating)[1]
Legend:	*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*	

1-DECENE HOMOPOLYMER, HYDROGENATED	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. (estimated) * Evidence of conjunctival changes ** No evidence of tissue damage [Inland Vacuum Industries] ^ US EPA HPV Challenge program October 2002

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PARAFFINIC DISTILLATE, HEAVY, SOLVENT-REFINED (SEVERE)	The materials included in the Lubricating Base Oils category are related from both process and physical-chemical perspectives; The potential toxicity of a specific distillate base oil is inversely related to the severity or extent of processing the oil has undergone, since: • The adverse effects of these materials are associated with undesirable components, and • The levels of the undesirable components are inversely related to the degree of processing; • Distillate base oils receiving the same degree or extent of processing will have similar toxicities; • The potential toxicity of residual base oils is independent of the degree of processing the oil receives. • The reproductive and developmental toxicity of the distillate base oils is inversely related to the degree of processing. Unrefined & mildly refined distillate base oils contain the highest levels of undesirable components, have the largest variation of hydrocarbon molecules and have shown the highest potential cancer-causing and mutation-causing activities. Highly and severely refined distillate base oils are produced from unrefined and mildly refined oils by removing or transforming undesirable components. In comparison to unrefined and mildly refined base oils, the highly and severely refined distillate base oils have a smaller range of hydrocarbon molecules and have demonstrated very low mammalian toxicity. Testing of residual oils for mutation-causing and cancer-causing potential has shown negative results, supporting the belief that these materials lack biologically active components or the components are largely non-bioavailable due to their molecular size. Toxicity testing has consistently shown that lubricating base oils have low acute toxicities. For highly and severely refined distillate base oils: In animal studies, the acute, oral, semilethal dose is >5g/kg body weight and the semilethal dose by skin contact is >2g/kg body weight. The semilethal concentration for inhalation is 2.18 to >4 mg/L. The materials have varied from “non-irritating” to “moderately irritating” when tested for skin and eye irritation. Testing for sensitisation has been negative. The substance is classified by IARC as Group 3: **NOT** classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
DI-TERT-BUTYL POLYSULFIDES	For di-tertiary-(C9-12) alkyl polysulfides: existing information shows that these substances show a low level of toxicity to toxicity. They have not been shown to cause genetic damage or developmental toxicity. Guinea pig maximization test: not sensitising The material seems to be a sensitiser at challenge but not at rechallenge Ames test: negative with and without metabolic activation * IUCLID Data
BIS(2-METHYLPENTAN-2-YL)DITHIOPHOSPHORIC ACID/ AMINES	Thee 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 Occupatinoal 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
O,O,O-TRIPHENYL PHOSPHOROTHIONATE	Dithiophosphate alkyl esters is corrosive and toxic to the tissues on skin or oral exposure depending on its concentration. Symptoms included diarrhoea, skin and gastrointestinal irritation, lethargy, reduced food intake, staining about the nose and eye; occasionally, there was drooping of the eyelid, hair standing up, inco-ordination and salivation. Toxicity is reduced following inhalation (due to vapour pressure and high viscosity). It may produce reproductive, developmental and genetic toxicity on experimental animals, but no substantive data is available to establish effect on humans. PASS Predicts R63
MAGNESIUM BORATE	for octahydrate:
PARAFFINIC DISTILLATE, HEAVY, SOLVENT-REFINED (SEVERE) & BIS(2-METHYLPENTAN-2-YL)DITHIOPHOSPHORIC ACID/ AMINES & O,O,O-TRIPHENYL PHOSPHOROTHIONATE & 1,3,4-THIADIAZOLIDINE-2,5-DITHIONE, TERT-NONANETHIOL DERIVS.	No significant acute toxicological data identified in literature search.
DI-TERT-BUTYL POLYSULFIDES & BIS(2-METHYLPENTAN-2-YL)DITHIOPHOSPHORIC ACID/ AMINES & 1,3,4-THIADIAZOLIDINE-2,5-DITHIONE, TERT-NONANETHIOL DERIVS.	The following information refers to contact allergens as a group and may not be specific to this product. 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.

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

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22090, 22083 FULLY SYNTHETIC HYPOID GEAR OIL (GL4/5) 75W-90 1L, 20L	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available
1-decene homopolymer, hydrogenated	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available
paraffinic distillate, heavy, solvent-refined (severe)	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	LC50	96	Fish	>100mg/L	2
	EC50	48	Crustacea	>10-mg/L	2
	EC50	96	Algae or other aquatic plants	>1000mg/L	1
	NOEC	504	Crustacea	>1mg/L	1
di-tert-butyl polysulfides	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	LC50	96	Fish	>0.088mg/L	2
	EC50	48	Crustacea	0.24mg/L	2
	EC50	72	Algae or other aquatic plants	0.299mg/L	2
	NOEC	96	Fish	>=0.088mg/L	2
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
O,O,O-triphenyl phosphorothionate	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	LC50	96	Fish	83mg/L	2
	EC50	48	Crustacea	>100mg/L	2
	EC50	72	Algae or other aquatic plants	>100mg/L	2
	NOEC	2088	Fish	0.0044mg/L	2
1,3,4-thiadiazolidine-2,5-dithione, tert-nonanethiol derivs.	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	LC50	96	Fish	>1-mg/L	2
	EC50	48	Crustacea	36mg/L	2
	EC50	72	Algae or other aquatic plants	51mg/L	2
	EL0	24	Crustacea	25mg/L	2
	NOEL	96	Fish	1-mg/L	2
magnesium borate	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	LC50	96	Fish	>50mg/L	2
	EC50	48	Crustacea	>50mg/L	2
	EC50	72	Algae or other aquatic plants	>50mg/L	2
	EL10	72	Algae or other aquatic plants	>50mg/L	2
	NOEC	96	Fish	50mg/L	2
Legend:	*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*				

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
1-decene homopolymer, hydrogenated	LOW	LOW
O,O,O-triphenyl phosphorothionate	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
1-decene homopolymer, hydrogenated	HIGH (LogKOW = 5.116)
O,O,O-triphenyl phosphorothionate	HIGH (LogKOW = 6.4658)

Continued...

Mobility in soil

Ingredient	Mobility
1-decene homopolymer, hydrogenated	LOW (KOC = 1724)
O,O,O-triphenyl phosphorothionate	LOW (KOC = 215700)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	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. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Authority for disposal. ▸ Bury or incinerate residue at an approved site. ▸ Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 Transport information

Labels Required

Marine Pollutant	NO

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

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

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

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

Canada Categorization decisions for all DSL substances | Canada Domestic Substances List (DSL)

paraffinic distillate, heavy, solvent-refined (severe) is found on the following regulatory lists

Canada Categorization decisions for all DSL substances | Chemical Footprint Project - Chemicals of High Concern List
Canada Domestic Substances List (DSL)

di-tert-butyl polysulfides is found on the following regulatory lists

Canada Categorization decisions for all DSL substances | Canada Domestic Substances List (DSL)

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

Not Applicable

O,O,O-triphenyl phosphorothionate is found on the following regulatory lists

Canada Categorization decisions for all DSL substances | Canada Domestic Substances List (DSL)

1,3,4-thiadiazolidine-2,5-dithione, tert-nonanethiol derivs. is found on the following regulatory lists

Canada Categorization decisions for all DSL substances | Canada Domestic Substances List (DSL)

magnesium borate is found on the following regulatory lists

Canada Categorization decisions for all DSL substances | Canada Non-Domestic Substances List (NDSL)
Canada Domestic Substances List (DSL)

National Inventory Status

National Inventory	Status
Australia - AIIC	Yes
Australia - Non-Industrial Use	No (1-decene homopolymer, hydrogenated; paraffinic distillate, heavy, solvent-refined (severe); di-tert-butyl polysulfides; O,O,O-triphenyl phosphorothionate; 1,3,4-thiadiazolidine-2,5-dithione, tert-nonanethiol derivs.; magnesium borate)

Continued...

National Inventory	Status
Canada - DSL	Yes
Canada - NDSL	No (1-decene homopolymer, hydrogenated; paraffinic distillate, heavy, solvent-refined (severe); di-tert-butyl polysulfides; O,O,O-triphenyl phosphorothionate; 1,3,4-thiadiazolidine-2,5-dithione, tert-nonanethiol derivs.)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (di-tert-butyl polysulfides; 1,3,4-thiadiazolidine-2,5-dithione, tert-nonanethiol derivs.; magnesium borate)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	No (magnesium borate)
Taiwan - TCSI	Yes
Mexico - INSQ	No (di-tert-butyl polysulfides; O,O,O-triphenyl phosphorothionate; 1,3,4-thiadiazolidine-2,5-dithione, tert-nonanethiol derivs.; magnesium borate)
Vietnam - NCI	No (magnesium borate)
Russia - ARIPS	No (1,3,4-thiadiazolidine-2,5-dithione, tert-nonanethiol derivs.; magnesium borate)
Legend:	*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

Revision Date	03/09/2020
Initial Date	23/04/2020

SDS Version Summary

Version	Issue Date	Sections Updated
3.1.1.1	03/09/2020	Classification change due to full database hazard calculation/update.

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
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