

Exxon Mobil Cat DEO-ULS 15W-40

Caterpillar

Chemwatch Hazard Alert Code: 1

Chemwatch: 4122066

Version No: 5.1

Material Safety Data Sheet according to NOHSC and ADG requirements

Issue Date: 03/30/2022

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

Product Identifier

Product name	Exxon Mobil Cat DEO-ULS 15W-40
Chemical Name	Not Applicable
Synonyms	Not Available
Chemical formula	Not Applicable
Other means of identification	Not Available

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

Relevant identified uses	Diesel engine oil.
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Details of the supplier of the safety data sheet

Registered company name	Caterpillar	Thermo Fisher Scientific	EXXON COMPANY.
Address	1 Caterpillar Drive Tullamarine VIC 3043 Australia	5 Caribbean Drive Scoresby VIC 3179 Australia	PO Box 2180 Houston TX 77252-2180 United States
Telephone	+61 3 9953 9333	+61 1300 735 292 +61 3 9757 4486	+1 713 6563424
Fax	+61 3 9335 3366	+61 1800 067 639	Not Available
Website	Not Available	http://www.thermofisher.com.au/	Not Available
Email	Not Available	auinfo@thermofisher.com	sds.uk@exxonmobil.com

Registered company name	ExxonMobil
Address	3225 Gallows Road Fairfax VA 22037 United States
Telephone	Not Available
Fax	Not Available
Website	http://www.host2.exxonmobil.com/psims/psims.aspx
Email	Not Available

Emergency telephone number

Association / Organisation	Caterpillar	Thermo Fisher Scientific	EXXON COMPANY.
Emergency telephone numbers	13 11 26	03 9757 4559	+1 218 8343296
Other emergency telephone numbers	Not Available	Not Available	Not Available

Association / Organisation	CHEMWATCH EMERGENCY RESPONSE
Emergency telephone numbers	+61 1800 951 288
Other emergency telephone numbers	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

Exxon Mobil Cat DEO-ULS 15W-40

HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

ChemWatch Hazard Ratings

	Min	Max
Flammability	1	1
Toxicity	0	0
Body Contact	1	1
Reactivity	1	1
Chronic	0	0

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

Poisons Schedule	Not Applicable
Risk Phrases [1]	R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI



Relevant risk statements are found in section 2

Indication(s) of danger	N
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Safety advice

S02	Keep out of reach of children.
S29	Do not empty into drains.
S35	This material and its container must be disposed of in a safe way.
S40	To clean the floor and all objects contaminated by this material, use water and detergent.
S56	Dispose of this material and its container at hazardous or special waste collection point.
S57	Use appropriate container to avoid environmental contamination.
S61	Avoid release to the environment. Refer to special instructions/Safety data sheets.

Other hazards

Cumulative effects may result following exposure*.

May produce discomfort of the eyes and skin*.

Limited evidence of a carcinogenic effect*.

Possible skin sensitizer*.

Not Applicable

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
64742-65-0.	1-<5	paraffinic distillate, heavy, solvent-dewaxed (severe)
64742-56-9.	1-<5	paraffinic distillate, light, solvent-dewaxed (severe)
125643-61-0	1-<5	C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate
113706-15-3	0.1-<1	zinc O,O-bis(C3-14-alkyl esters) dithiophosphate
1190625-94-5	0.1-<1	(C14-16-18)alkylphenol
64742-54-7.	NotSpec	paraffinic distillate, heavy, hydrotreated (severe)

Legend: 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 -

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Annex VI; 4. Classification drawn from C&L; * EU IOELVs available

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ 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	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▶ Other measures are usually unnecessary.
Ingestion	<ul style="list-style-type: none"> ▶ Immediately give a glass of water. ▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media

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

Special hazards arising from the substrate or mixture

Fire Incompatibility	<ul style="list-style-type: none"> ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ 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). <p>Combustion products include: carbon dioxide (CO₂) phosphorus oxides (PO_x) sulfur oxides (SO_x) other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.</p> <p>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.</p>
HAZCHEM	Not Applicable

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Minor Spills	<ul style="list-style-type: none"> ▶ 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.
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Major Spills	<p>Moderate hazard.</p> <ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves.
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Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	<p>Hydrogen sulfide (H₂S or Sour Gas) may be present when loading and unloading transport vessels. Stay upwind and away from newly opened hatches and allow to vent thoroughly before handling material. Steam may be used to vent hatches. Keep all sources of ignition away from loading area.</p> <ul style="list-style-type: none"> ▶ DO NOT allow clothing wet with material to stay in contact with skin ▶ 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	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ Metal can or drum ▶ Packaging as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	<ul style="list-style-type: none"> ▶ 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
Australia Exposure Standards	paraffinic distillate, heavy, solvent-dewaxed (severe)	Oil mist, refined mineral	5 mg/m ³	Not Available	Not Available	Not Available
Australia Exposure Standards	paraffinic distillate, light, solvent-dewaxed (severe)	Oil mist, refined mineral	5 mg/m ³	Not Available	Not Available	Not Available
Australia Exposure Standards	paraffinic distillate, heavy, hydrotreated (severe)	Oil mist, refined mineral	5 mg/m ³	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
paraffinic distillate, heavy, solvent-dewaxed (severe)	140 mg/m ³	1,500 mg/m ³	8,900 mg/m ³
paraffinic distillate, light, solvent-dewaxed (severe)	140 mg/m ³	1,500 mg/m ³	8,900 mg/m ³
paraffinic distillate, heavy, hydrotreated (severe)	140 mg/m ³	1,500 mg/m ³	8,900 mg/m ³

Ingredient	Original IDLH	Revised IDLH
paraffinic distillate, heavy, solvent-dewaxed (severe)	2,500 mg/m ³	Not Available
paraffinic distillate, light, solvent-dewaxed (severe)	2,500 mg/m ³	Not Available
C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinamate	Not Available	Not Available

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Ingredient	Original IDLH	Revised IDLH
zinc O,O-bis(C3-14-alkyl esters) dithiophosphate	Not Available	Not Available
(C14-16-18)alkylphenol	Not Available	Not Available
paraffinic distillate, heavy, hydrotreated (severe)	2,500 mg/m3	Not Available

Occupational Exposure Banding


Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
zinc O,O-bis(C3-14-alkyl esters) dithiophosphate	E	≤ 0.01 mg/m ³
(C14-16-18)alkylphenol	E	≤ 0.01 mg/m ³

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.

MATERIAL DATA

NOTE L: The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346. European Union (EU) List of harmonised classification and labelling hazardous substances, Table 3.1, Annex VI, Regulation (EC) No 1272/2008 (CLP) - up to the latest ATP

Exposure controls

Appropriate engineering controls	<p>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.</p> <p>The basic types of engineering controls are:</p> <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> ▶ 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 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	<ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber <p>NOTE:</p> <ul style="list-style-type: none"> ▶ 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. <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.</p> <p>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.</p> <p>Personal hygiene is a key element of effective hand care.</p>
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ 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	Brown liquid with characteristic odour; does not mix with water.		
Physical state	Liquid	Relative density (Water = 1)	0.875
Odour	Characteristic	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Applicable	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	-27 (Pour pt)	Viscosity (cSt)	109 @40C
Initial boiling point and boiling range (°C)	>316	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	>215	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	~7	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	~0.9	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	<0.013 @20C	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (Not Available%)	Not Applicable
Vapour density (Air = 1)	>2	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
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	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives
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	<p>using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.</p> <p>Inhalation of oil droplets/ aerosols may cause discomfort and may produce chemical pneumonitis.</p>
Ingestion	<p>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. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health).</p>
Skin Contact	<p>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds 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.</p>
Eye	<p>Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.</p> <p>Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.</p>
Chronic	<p>Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals.</p> <p>Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological, irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even to tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma.</p> <p>Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.</p> <p>On the basis, primarily, of animal experiments, concern has been expressed that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment.</p>

Exxon Mobil Cat DEO-ULS 15W-40	TOXICITY	IRRITATION
	Not Available	Not Available
paraffinic distillate, heavy, solvent-dewaxed (severe)	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
	Inhalation(Rat) LC50; 2.18 mg/14h ^[2]	Skin: no adverse effect observed (not irritating) ^[1]
	Oral (Rat) LD50; >5000 mg/kg ^[2]	
paraffinic distillate, light, solvent-dewaxed (severe)	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
	Inhalation(Rat) LC50; 2.18 mg/14h ^[2]	Skin: no adverse effect observed (not irritating) ^[1]
	Oral (Rat) LD50; >5000 mg/kg ^[2]	
C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1]	Eye (rabbit: non-irritating *
	Oral (Rat) LD50; >200 mg/kg ^[2]	Skin (rat): non-irritating *
zinc O,O-bis(C3-14-alkyl esters) dithiophosphate	TOXICITY	IRRITATION
	dermal (rat) LD50: >5000 mg/kg ^[2]	Eye: adverse effect observed (irritating) ^[1]
	Inhalation(Rat) LC50; >0.5 mg/14h ^[1]	Skin: adverse effect observed (irritating) ^[1]
	Oral (Rat) LD50; >2000 mg/kg ^[2]	
(C14-16-18)alkylphenol	TOXICITY	IRRITATION
	Not Available	Not Available

	TOXICITY	IRRITATION
paraffinic distillate, heavy, hydrotreated (severe)	Dermal (rabbit) LD50: >2000 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
	Inhalation(Rat) LC50; 2.18 mg/l4h ^[2]	Skin: no adverse effect observed (not irritating) ^[1]
	Oral (Rat) LD50; >5000 mg/kg ^[2]	
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	

PARAFFINIC DISTILLATE, HEAVY, SOLVENT-DEWAXED (SEVERE)	<p>Studies indicate that normal, branched and cyclic paraffins are absorbed from the mammalian gastrointestinal tract and that the absorption of n-paraffins is inversely proportional to the carbon chain length, with little absorption above C30. With respect to the carbon chain lengths likely to be present in mineral oil, n-paraffins may be absorbed to a greater extent than iso- or cyclo-paraffins.</p> <p>The major classes of hydrocarbons have been shown to be well absorbed by the gastrointestinal tract in various species. In many cases, the hydrophobic hydrocarbons are ingested in association with dietary lipids. The dependence of hydrocarbon absorption on concomitant triglyceride digestion and absorption, is known as the "hydrocarbon continuum hypothesis", and asserts that a series of solubilising phases in the intestinal lumen, created by dietary triglycerides and their digestion products, afford hydrocarbons a route to the lipid phase of the intestinal absorptive cell (enterocyte) membrane.</p>
C7-9 BRANCHED ALKYL-3,5-DI-TERT-BUTYL-4-HYDROXYHYDROCINNAMATE	<p>Non-sensitising to guinea pig skin * Everspring Chemical MSDS</p> <p>For hindered phenols:</p> <p>Available data shows that acute toxicity of these substances is low.</p> <p>Mutagenicity. Data from bacterial reverse mutation assays and <i>in vitro</i> and <i>in vivo</i> chromosome aberration studies were reviewed. All assays, with and without metabolic activation, were negative. The weight of evidence for mutagenic potential for this category indicates these substances are not mutagenic.</p> <p>In Vitro Chromosome Aberration Studies.</p>
ZINC O,O-BIS(C3-14-ALKYL ESTERS) DITHIOPHOSPHATE	<p>For dithiophosphate alkyl esters and their (zinc) salts:</p> <p>Acute toxicity: Dithiophosphate alkyl esters consist of a phosphorodithioic acid structure with alkyl ester substituent groups. The alkyl groups are saturated hydrocarbon chains that vary in length and extent of branching. While corrosive to tissue the esters demonstrate a low concern for acute systemic toxicity. Data on acute mammalian toxicity of zinc dialkyldithiophosphates in highly refined lubricant base oil also indicate a low concern for acute toxicity.</p>
(C14-16-18)ALKYLPHENOL	<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.</p>
PARAFFINIC DISTILLATE, HEAVY, SOLVENT-DEWAXED (SEVERE) & PARAFFINIC DISTILLATE, LIGHT, SOLVENT-DEWAXED (SEVERE) & ZINC O,O-BIS(C3-14-ALKYL ESTERS) DITHIOPHOSPHATE & (C14-16-18)ALKYLPHENOL	<p>No significant acute toxicological data identified in literature search.</p>
PARAFFINIC DISTILLATE, HEAVY, SOLVENT-DEWAXED (SEVERE) & PARAFFINIC DISTILLATE, LIGHT, SOLVENT-DEWAXED (SEVERE) & PARAFFINIC DISTILLATE, HEAVY, HYDROTREATED (SEVERE)	<p>The materials included in the Lubricating Base Oils category are related from both process and physical-chemical perspectives;</p> <p>The potential toxicity of a specific distillate base oil is inversely related to the severity or extent of processing the oil has undergone, since:</p> <ul style="list-style-type: none"> · 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 <i>residual base oils</i> 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. <p>The degree of refining influences the carcinogenic potential of the oils. Whereas mild acid / earth refining processes are inadequate to substantially reduce the carcinogenic potential of lubricant base oils, hydrotreatment and / or solvent extraction methods can yield oils with no carcinogenic potential.</p> <p>Unrefined and 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 carcinogenic and mutagenic 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.</p> <p>Highly and Severely Refined Distillate Base Oils</p> <p>Acute toxicity: Multiple studies of the acute toxicity of highly & severely refined base oils have been reported. Irrespective of the crude source or the method or extent of processing, the oral LD50s have been observed to be >5 g/kg (bw) and the dermal LD50s have ranged from >2 to >5g/kg (bw). The LC50 for inhalation toxicity ranged from 2.18 mg/l to > 4 mg/l. When tested for skin and eye irritation, the materials have been reported as "non-irritating" to "moderately irritating"</p> <p>Testing in guinea pigs for sensitization has been negative</p> <p>Repeat dose toxicity: . Several studies have been conducted with these oils.</p> <p>The substance is classified by IARC as Group 3:</p> <p>NOT classifiable as to its carcinogenicity to humans.</p>

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Evidence of carcinogenicity may be inadequate or limited in animal testing.

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

Exxon Mobil Cat DEO-ULS 15W-40	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
paraffinic distillate, heavy, solvent-dewaxed (severe)	Endpoint	Test Duration (hr)	Species	Value	Source
	ErC50	72h	Algae or other aquatic plants	>1000mg/l	1
	NOEC(ECx)	504h	Crustacea	>1mg/l	1
	EC50	48h	Crustacea	>1000mg/l	1
paraffinic distillate, light, solvent-dewaxed (severe)	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	504h	Crustacea	>1mg/l	1
C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	3mg/l	Not Available
	EC50(ECx)	72h	Algae or other aquatic plants	3mg/l	Not Available
	EC50	48h	Crustacea	>0.008mg/l	2
zinc O,O-bis(C3-14-alkyl esters) dithiophosphate	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	504h	Crustacea	0.4mg/l	2
	EC50	72h	Algae or other aquatic plants	2mg/l	2
	EC50	96h	Algae or other aquatic plants	2mg/l	2
	EC50	48h	Crustacea	5.4mg/l	2
(C14-16-18)alkylphenol	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
paraffinic distillate, heavy, hydrotreated (severe)	Endpoint	Test Duration (hr)	Species	Value	Source
	ErC50	72h	Algae or other aquatic plants	>1000mg/l	1
	NOEC(ECx)	504h	Crustacea	>1mg/l	1
	EC50	48h	Crustacea	>1000mg/l	1
	EC50	96h	Algae or other aquatic plants	>1000mg/l	1

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 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

Toxic 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.

When spilled this product may act as a typical oil, causing a film, sheen, emulsion or sludge at or beneath the surface of the body of water. The oil film on water surface may physically affect the aquatic organisms, due to the interruption of the oxygen transfer between the air and the water

Oils of any kind can cause:

- drowning of water-fowl due to lack of buoyancy, loss of insulating capacity of feathers, starvation and vulnerability to predators due to lack of mobility
- lethal effects on fish by coating gill surfaces, preventing respiration
- asphyxiation of benthic life forms when floating masses become engaged with surface debris and settle on the bottom and
- adverse aesthetic effects of fouled shoreline and beaches

In case of accidental releases on the soil, a fine film is formed on the soil, which prevents the plant respiration process and the soil particle saturation. It may cause deep water infestation.

for lubricating oil base stocks:

Vapor Pressure Vapor pressures of lubricating base oils are reported to be negligible. In one study, the experimentally measured vapour pressure of a solvent-dewaxed heavy paraffinic distillate base oil was 1.7×10^{-4} Pa. Since base oils are mixtures of C15 to C50 paraffinic, naphthenic, and aromatic hydrocarbon isomers, representative components of those structures were selected to calculate a range of vapor pressures. The estimated vapor pressure values for these selected components of base oils ranged from 4.5×10^{-1} Pa to 2×10^{-13} Pa.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
zinc O,O-bis(C3-14-alkyl esters) dithiophosphate	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
zinc O,O-bis(C3-14-alkyl esters) dithiophosphate	HIGH (LogKOW = 6.0235)

Mobility in soil

Ingredient	Mobility
zinc O,O-bis(C3-14-alkyl esters) dithiophosphate	LOW (KOC = 3509)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> ▸ Containers may still present a chemical hazard/ danger when empty. ▸ Return to supplier for reuse/ recycling if possible. <p>Otherwise:</p> <ul style="list-style-type: none"> ▸ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. ▸ Where possible retain label warnings and SDS and observe all notices pertaining to the product. <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"> ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) <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"> ▸ 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.
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SECTION 14 Transport information

Exxon Mobil Cat DEO-ULS 15W-40

Labels Required

Marine Pollutant	
HAZCHEM	Not Applicable

Land transport (ADG): 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

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
paraffinic distillate, heavy, solvent-dewaxed (severe)	Not Available
paraffinic distillate, light, solvent-dewaxed (severe)	Not Available
C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate	Not Available
zinc O,O-bis(C3-14-alkyl esters) dithiophosphate	Not Available
(C14-16-18)alkylphenol	Not Available
paraffinic distillate, heavy, hydrotreated (severe)	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
paraffinic distillate, heavy, solvent-dewaxed (severe)	Not Available
paraffinic distillate, light, solvent-dewaxed (severe)	Not Available
C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate	Not Available
zinc O,O-bis(C3-14-alkyl esters) dithiophosphate	Not Available
(C14-16-18)alkylphenol	Not Available
paraffinic distillate, heavy, hydrotreated (severe)	Not Available

SECTION 15 Regulatory information

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

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

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

Chemical Footprint Project - Chemicals of High Concern List

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

paraffinic distillate, light, solvent-dewaxed (severe) is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

Chemical Footprint Project - Chemicals of High Concern List

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

C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate is found on the following regulatory lists

Continued...

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

zinc O,O-bis(C3-14-alkyl esters) dithiophosphate is found on the following regulatory lists

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4

Australian Inventory of Industrial Chemicals (AIIC)

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

(C14-16-18)alkylphenol is found on the following regulatory lists

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

paraffinic distillate, heavy, hydrotreated (severe) is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIIC)

Chemical Footprint Project - Chemicals of High Concern List

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

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	No ((C14-16-18)alkylphenol)
Canada - DSL	No ((C14-16-18)alkylphenol)
Canada - NDSL	No (paraffinic distillate, heavy, solvent-dewaxed (severe); paraffinic distillate, light, solvent-dewaxed (severe); C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate; zinc O,O-bis(C3-14-alkyl esters) dithiophosphate; (C14-16-18)alkylphenol; paraffinic distillate, heavy, hydrotreated (severe))
China - IECSC	No ((C14-16-18)alkylphenol)
Europe - EINEC / ELINCS / NLP	No (C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate; (C14-16-18)alkylphenol)
Japan - ENCS	No (paraffinic distillate, light, solvent-dewaxed (severe); C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate)
Korea - KECI	No ((C14-16-18)alkylphenol)
New Zealand - NZIoC	No ((C14-16-18)alkylphenol)
Philippines - PICCS	No ((C14-16-18)alkylphenol)
USA - TSCA	No ((C14-16-18)alkylphenol)
Taiwan - TCSI	No ((C14-16-18)alkylphenol)
Mexico - INSQ	No (paraffinic distillate, light, solvent-dewaxed (severe); zinc O,O-bis(C3-14-alkyl esters) dithiophosphate; (C14-16-18)alkylphenol)
Vietnam - NCI	No ((C14-16-18)alkylphenol)
Russia - FBEPH	No (paraffinic distillate, light, solvent-dewaxed (severe); C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate; zinc O,O-bis(C3-14-alkyl esters) dithiophosphate; (C14-16-18)alkylphenol)
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

SECTION 16 Other information

Revision Date	03/30/2022
Initial Date	02/06/2013

SDS Version Summary

Version	Date of Update	Sections Updated
4.1	11/01/2019	One-off system update. NOTE: This may or may not change the GHS classification
5.1	03/30/2022	Appearance, Chronic Health, Classification, Disposal, Environmental, Fire Fighter (extinguishing media), Fire Fighter (fire/explosion hazard), Fire Fighter (fire fighting), Handling Procedure, Ingredients, Physical Properties, Spills (major), Spills (minor), Storage (storage requirement), Storage (suitable container), Use

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

Continued...

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

ES: Exposure Standard

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

AIIIC: Australian Inventory of Industrial Chemicals

DSL: Domestic Substances List

NDSL: Non-Domestic Substances List

IECSC: Inventory of Existing Chemical Substance in China

EINECS: European INventory of Existing Commercial chemical Substances

ELINCS: European List of Notified Chemical Substances

NLP: No-Longer Polymers

ENCS: Existing and New Chemical Substances Inventory

KECI: Korea Existing Chemicals Inventory

NZIoC: New Zealand Inventory of Chemicals

PICCS: Philippine Inventory of Chemicals and Chemical Substances

TSCA: Toxic Substances Control Act

TCSI: Taiwan Chemical Substance Inventory

INSQ: Inventario Nacional de Sustancias Químicas

NCI: National Chemical Inventory

FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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