

# Lubrication Engineers 5182 Pyroshield

Lubrication Engineers NZ Ltd

Chemwatch Hazard Alert Code: 2

Chemwatch: 8019-19

Issue Date: 09/01/2015

Version No: 9.1.1.1

Print Date: 08/03/2018

Safety Data Sheet according to HSNO Regulations

S.GHS.NZL.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

<b>Product name</b>	Lubrication Engineers 5182 Pyroshield
<b>Synonyms</b>	Not Available
<b>Other means of identification</b>	Not Available

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

<b>Relevant identified uses</b>	Use according to manufacturer's directions. Lubricant.
---------------------------------	---

### Details of the supplier of the safety data sheet

<b>Registered company name</b>	Lubrication Engineers NZ Ltd
<b>Address</b>	11F Piermark Drive North Harbour Industrial Estate Albany, Auckland New Zealand
<b>Telephone</b>	+64 09 415 9411
<b>Fax</b>	+64 09 4158411
<b>Website</b>	Not Available
<b>Email</b>	Not Available

### Emergency telephone number

<b>Association / Organisation</b>	Not Available
<b>Emergency telephone numbers</b>	+64 21 3385487
<b>Other emergency telephone numbers</b>	Not Available

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation. Not regulated for transport of Dangerous Goods.**

#### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	1	1
Toxicity	1	1
Body Contact	2	2
Reactivity	1	1
Chronic	0	0

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

<b>Classification [1]</b>	Acute Toxicity (Oral) Category 5, Acute Toxicity (Inhalation) Category 5, Skin Corrosion/Irritation Category 3, Eye Irritation Category 2B, Acute Aquatic Hazard Category 3, Chronic Aquatic Hazard Category 3
<b>Legend:</b>	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

Lubrication Engineers 5182 Pyroshield

Determined by  
Chemwatch using  
GHS/HSNO criteria

6.1E (inhalation), 6.1E (oral), 6.3B, 6.4A (mild), 9.1C, 9.1D

Label elements

Hazard pictogram(s)	Not Applicable
---------------------	----------------

SIGNAL WORD	<b>WARNING</b>
-------------	----------------

Hazard statement(s)

H303	May be harmful if swallowed.
H333	May be harmful if inhaled.
H316	Causes mild skin irritation.
H320	Causes eye irritation.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s) Prevention

P273	Avoid release to the environment.
P264	Wash all exposed external body areas thoroughly after handling.

Precautionary statement(s) Response

P304+P312	IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
------	---

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
8042-47-5	NotSpec	<u>white mineral oil (petroleum)</u>
15890-25-2	1-5	<u>antimony diamylthiocarbamate</u>
123-42-2	NotSpec	<u>diacetone alcohol</u>
14808-60-7	NotSpec	<u>silica crystalline - quartz</u>
12001-26-2	NotSpec	<u>mica</u>
	NotSpec	pigment as
13463-67-7		<u>titanium dioxide</u>
471-34-1	NotSpec	<u>calcium carbonate</u>
1309-37-1	NotSpec	<u>ferric oxide</u>
91-20-3	NotSpec	<u>naphthalene</u>
	balance	Ingredients determined not to be hazardous

SECTION 4 FIRST AID MEASURES

## Lubrication Engineers 5182 Pyroshield

### Description of first aid measures

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with fresh running water.</li> <li>▶ 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.</li> <li>▶ Seek medical attention without delay; if pain persists or recurs 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>	<p>If skin contact occurs:</p> <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, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Seek medical advice.</li> </ul>

### 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.

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

- ▶ Alcohol stable foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

**Do not** use a water jet to fight fire.

### Special hazards arising from the substrate or mixture

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

### Advice for firefighters

<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 breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</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:</p> <ul style="list-style-type: none"> <li>, carbon dioxide (CO<sub>2</sub>)</li> <li>, sulfur oxides (SO<sub>x</sub>)</li> <li>, metal oxides</li> <li>, other pyrolysis products typical of burning organic material.</li> </ul> <p>May emit poisonous fumes.</p> <p><b>CARE:</b> 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>

## 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>	Slippery when spilt. † Clean up all spills immediately. † Avoid contact with skin and eyes. † Wear impervious gloves and safety goggles. † Trowel up/scrape up.
<b>Major Spills</b>	† Clear area of personnel and move upwind. † Alert Fire Brigade and tell them location and nature of hazard. † Wear breathing apparatus plus protective gloves. † Prevent, by any means available, spillage from entering drains or water course. Slippery when spilt.

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>	† 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.
<b>Other information</b>	† Store in original containers. † Keep containers securely sealed. † Store in a cool, dry, well-ventilated area. † Store away from incompatible materials and foodstuff containers.

### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	† Metal can or drum † Packaging as recommended by manufacturer. † Check all containers are clearly labelled and free from leaks.
<b>Storage incompatibility</b>	† Avoid strong acids, bases. † Avoid reaction with oxidising agents



+ X + O X + +

X — Must not be stored together

O — May be stored together with specific preventions

+ — May be stored together

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	white mineral oil (petroleum)	Oil mist, mineral	5 mg/m3	10 mg/m3	Not Available	(om) - Sampled by a method that does not collect vapour.
New Zealand Workplace Exposure Standards (WES)	antimony diamylthiocarbamate	Antimony and compounds, as Sb	0.5 mg/m3	Not Available	Not Available	Not Available

## Lubrication Engineers 5182 Pyroshield

New Zealand Workplace Exposure Standards (WES)	diacetone alcohol	Diacetone alcohol (4-Hydroxy-4-methyl-2-pentanone)	238 mg/m <sup>3</sup> / 50 ppm	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	silica crystalline - quartz	Silica-Crystalline (all forms) quartz and cristobalite are confirmed carcinogens	0.1 mg/m <sup>3</sup>	Not Available	Not Available	6.7A - Confirmed carcinogen; (r) - The value for respirable dust.
New Zealand Workplace Exposure Standards (WES)	mica	Mica	3 mg/m <sup>3</sup>	Not Available	Not Available	(r) - The value for respirable dust.
New Zealand Workplace Exposure Standards (WES)	titanium dioxide	Titanium dioxide	10 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	calcium carbonate	Calcium carbonate (Limestone, Marble)	10 mg/m <sup>3</sup>	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	ferric oxide	Rouge	10 mg/m <sup>3</sup>	Not Available	Not Available	(w) - A range of airborne contaminants are associated with gas and arc welding. The type of metal being welded, the electrode employed and the welding process will all influence the composition and amount of fume. Gaseous products such as oxides of nitrogen, carbon monoxide and ozone may also be produced. In the absence of specific substances such as chromium, and where conditions do not support the generation of toxic gases, the fume concentration inside the welder's helmet should not exceed 5 mg/m <sup>3</sup> .
New Zealand Workplace Exposure Standards (WES)	ferric oxide	Iron oxide dust and fume (Fe <sub>2</sub> O <sub>3</sub> ), as Fe	5 mg/m <sup>3</sup>	Not Available	Not Available	(w) - A range of airborne contaminants are associated with gas and arc welding. The type of metal being welded, the electrode employed and the welding process will all influence the composition and amount of fume. Gaseous products such as oxides of nitrogen, carbon monoxide and ozone may also be produced. In the absence of specific substances such as chromium, and where conditions do not support the generation of toxic gases, the fume concentration inside the welder's helmet should not exceed 5 mg/m <sup>3</sup> .
New Zealand Workplace Exposure Standards (WES)	naphthalene	Naphthalene	52 mg/m <sup>3</sup> / 10 ppm	79 mg/m <sup>3</sup> / 15 ppm	Not Available	Not Available

## EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
diacetone alcohol	Hydroxy-4-methyl-2-pentanone, 4-; (Diacetone alcohol)	150 ppm	350 ppm	2100 ppm
silica crystalline - quartz	Silica, crystalline-quartz; (Silicon dioxide)	0.075 mg/m <sup>3</sup>	33 mg/m <sup>3</sup>	200 mg/m <sup>3</sup>
mica	Mica; (mica silicates)	9 mg/m <sup>3</sup>	99 mg/m <sup>3</sup>	590 mg/m <sup>3</sup>
titanium dioxide	Titanium oxide; (Titanium dioxide)	30 mg/m <sup>3</sup>	330 mg/m <sup>3</sup>	2,000 mg/m <sup>3</sup>
calcium carbonate	Limestone; (Calcium carbonate; Dolomite)	45 mg/m <sup>3</sup>	500 mg/m <sup>3</sup>	3,000 mg/m <sup>3</sup>
calcium carbonate	Carbonic acid, calcium salt	45 mg/m <sup>3</sup>	210 mg/m <sup>3</sup>	1,300 mg/m <sup>3</sup>
ferric oxide	Iron oxide; (Ferric oxide)	15 mg/m <sup>3</sup>	360 mg/m <sup>3</sup>	2,200 mg/m <sup>3</sup>
naphthalene	Naphthalene	15 ppm	83 ppm	500 ppm

Ingredient	Original IDLH	Revised IDLH
------------	---------------	--------------

Continued...

## Lubrication Engineers 5182 Pyroshield

white mineral oil (petroleum)	2500 mg/m3	Not Available
antimony diamylthiocarbamate	50 mg/m3	Not Available
diacetone alcohol	1,800 [LEL] ppm	Not Available
silica crystalline - quartz	Not Available	Not Available
mica	1500 mg/m3	Not Available
titanium dioxide	5000 mg/m3	Not Available
calcium carbonate	Not Available	Not Available
ferric oxide	2,500 mg/m3	Not Available
naphthalene	250 ppm	Not Available

## Exposure controls

<b>Appropriate engineering controls</b>	<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> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>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.</p>
<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>
<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> </ul>
<b>Thermal hazards</b>	Not Available

## Recommended material(s)

## GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

**"Forsberg Clothing Performance Index".**

The effect(s) of the following substance(s) are taken into account in the

**computer-generated** selection:

Lubrication Engineers 5182 Pyroshield

Material	CPI
NATURAL RUBBER	C
NEOPRENE	C
NITRILE	C
PVA	C
TEFLON	C

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

**NOTE:** As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

\* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

## 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

Continued...

Lubrication Engineers 5182 Pyroshield

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.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

<b>Appearance</b>	Purple paste with a hydrocarbon-like odour; not miscible with water.		
<b>Physical state</b>	Non Slump Paste	<b>Relative density (Water = 1)</b>	0.91
<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>	6-8	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	223	<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 (g/L)</b>	Immiscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	<1	<b>VOC g/L</b>	Not Available

**SECTION 10 STABILITY AND REACTIVITY**

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	Product is considered stable and hazardous polymerisation will not occur.
<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>	There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation hazard is increased at higher temperatures. Inhalation of oil droplets or aerosols may cause discomfort and may produce chemical inflammation of the lungs.
<b>Ingestion</b>	Accidental ingestion of the material may be damaging to the health of the individual.
<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 The material may accentuate any pre-existing dermatitis condition
<b>Eye</b>	There is some evidence to suggest that this material can cause eye irritation and damage in some persons.

Lubrication Engineers 5182 Pyroshield

<b>Chronic</b>	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.	
<b>Lubrication Engineers 5182 Pyroshield</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >5000 mg/kg <sup>[2]</sup> Oral (rat) LD50: >15000 mg/kg <sup>[2]</sup>	Eye (rabbit): slight Skin (rabbit): slight
<b>white mineral oil (petroleum)</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >2000 mg/kg <sup>[1]</sup> Oral (rat) LD50: >5000 mg/kg <sup>[1]</sup>	Not Available
<b>antimony diamyldithiocarbamate</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>diacetone alcohol</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: 13500 mg/kg <sup>[2]</sup> Oral (rat) LD50: 2520 mg/kg <sup>[2]</sup>	Eye (human): 100 ppm/15 mins. Eye (rabbit): 5 mg SEVERE Skin (rabbit): 500 mg open mild
<b>silica crystalline - quartz</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>mica</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>titanium dioxide</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation (rat) LC50: >2.28 mg/l4 h <sup>[1]</sup> Oral (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Skin (human): 0.3 mg /3D (int)-mild *
<b>calcium carbonate</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup> Oral (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Eye (rabbit): 0.75 mg/24h - SEVERE Skin (rabbit): 500 mg/24h-moderate
<b>ferric oxide</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: >5000 mg/kg <sup>[1]</sup>	Not Available
<b>naphthalene</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (rat) LD50: >2500 mg/kg <sup>[2]</sup> Oral (rat) LD50: 490 mg/kg <sup>[2]</sup>	Eye (rabbit): 100 mg - mild Skin (rabbit):495 mg (open) - mild
<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>Lubrication Engineers 5182 Pyroshield</b>	Based on testing of similar products and/or the components
<b>WHITE MINERAL OIL (PETROLEUM)</b>	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. Oral (rat) TClO: 92000 mg/kg/92D-Cont. Generally the toxicity and irritation is of low order. White oils and highly/solvent refined oils have not shown the long term risk of skin cancer that follows persistent skin contamination with some other mineral oils, due in all probability to refining that produces low content of both polyaromatics (PAH) and benz-alpha-pyrenes (BaP)
<b>DIACETONE ALCOHOL</b>	Diacetone alcohol (DAA) is irritating to the skin and eyes, but the oral lethal dose is more than 4000mg/kg. Animal testing showed some effects to the kidney and liver. It has not been shown to cause reproductive or developmental toxicity or genetic damage, but it may reduce fertility.

## Lubrication Engineers 5182 Pyroshield

	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. Inhalation (human) TClO: 400 ppm resp.effect		
<b>SILICA CRYSTALLINE - QUARTZ</b>	<b>WARNING:</b> For inhalation exposure <u>ONLY</u> : This substance has been classified by the IARC as Group 1: <b>CARCINOGENIC TO HUMANS</b>  The International Agency for Research on Cancer (IARC) has classified occupational exposures to <b>respirable</b> (<5 um) crystalline silica as being carcinogenic to humans . This classification is based on what IARC considered sufficient evidence from epidemiological studies of humans for the carcinogenicity of inhaled silica in the forms of quartz and cristobalite. Crystalline silica is also known to cause silicosis, a non-cancerous lung disease. Intermittent exposure produces; focal fibrosis, (pneumoconiosis), cough, dyspnoea, liver tumours.		
<b>TITANIUM DIOXIDE</b>	The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. Exposure to titanium dioxide is via inhalation, swallowing or skin contact. When inhaled, it may deposit in lung tissue and lymph nodes causing dysfunction of the lungs and immune system. Absorption by the stomach and intestines depends on the size of the particle. It penetrated only the outermost layer of the skin, suggesting that healthy skin may be an effective barrier. * IUCLID		
<b>FERRIC OXIDE</b>	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.		
<b>NAPHTHALENE</b>	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.		
<b>Lubrication Engineers 5182 Pyroshield &amp; ANTIMONY DIAMYLIDITHIOCARBAMATE &amp; DIACETONE ALCOHOL &amp; MICA</b>	No significant acute toxicological data identified in literature search.		
<b>Lubrication Engineers 5182 Pyroshield &amp; WHITE MINERAL OIL (PETROLEUM)</b>	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: <ul style="list-style-type: none"> <li>The adverse effects of these materials are associated with undesirable components, and</li> <li>The levels of the undesirable components are inversely related to the degree of processing;</li> <li>Distillate base oils receiving the same degree or extent of processing will have similar toxicities;</li> <li>The potential toxicity of residual base oils is independent of the degree of processing the oil receives.</li> <li>The reproductive and developmental toxicity of the distillate base oils is inversely related to the degree of processing.</li> </ul> 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.		
<b>Lubrication Engineers 5182 Pyroshield &amp; WHITE MINERAL OIL (PETROLEUM)</b>	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.		
<b>DIACETONE ALCOHOL &amp; TITANIUM DIOXIDE &amp; NAPHTHALENE</b>	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.		
<b>TITANIUM DIOXIDE &amp; NAPHTHALENE</b>	<b>WARNING:</b> This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.		
<b>Acute Toxicity</b>	✓	<b>Carcinogenicity</b>	⊘
<b>Skin Irritation/Corrosion</b>	✓	<b>Reproductivity</b>	⊘
<b>Serious Eye Damage/Irritation</b>	✓	<b>STOT - Single Exposure</b>	⊘
<b>Respiratory or Skin sensitisation</b>	⊘	<b>STOT - Repeated Exposure</b>	⊘
<b>Mutagenicity</b>	⊘	<b>Aspiration Hazard</b>	⊘

Legend: ✗ – Data available but does not fill the criteria for classification

Continued...

Lubrication Engineers 5182 Pyroshield

✔ – Data available to make classification  
⊘ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Lubrication Engineers 5182 Pyroshield	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
white mineral oil (petroleum)	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
antimony diamyldithiocarbamate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
diacetone alcohol	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	420mg/L	4
silica crystalline - quartz	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
mica	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
titanium dioxide	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	155mg/L	2
	EC50	48	Crustacea	>10mg/L	2
	EC50	72	Algae or other aquatic plants	5.83mg/L	4
	EC20	72	Algae or other aquatic plants	1.81mg/L	4
NOEC	336	Fish	0.089mg/L	4	
calcium carbonate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	>56000mg/L	4
	EC50	72	Algae or other aquatic plants	>14mg/L	2
NOEC	72	Algae or other aquatic plants	14mg/L	2	
ferric oxide	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.05mg/L	2
	EC50	72	Algae or other aquatic plants	18mg/L	2
NOEC	504	Fish	0.52mg/L	2	
naphthalene	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.213mg/L	4
	EC50	48	Crustacea	1.6mg/L	4
	EC50	72	Algae or other aquatic plants	ca.0.4- ca.0.5mg/L	2
	BCF	12	Fish	10.2mg/L	4
NOEC	48	Fish	0.012817mg/L	4	

**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

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  $1.7 \times 10^{-4}$  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  $4.5 \times 10^{-1}$  Pa to  $2 \times 10^{-13}$  Pa.

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

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
diacetone alcohol	HIGH	HIGH
titanium dioxide	HIGH	HIGH
naphthalene	HIGH (Half-life = 258 days)	LOW (Half-life = 1.23 days)

### Bioaccumulative potential

Ingredient	Bioaccumulation
diacetone alcohol	LOW (LogKOW = -0.3376)
titanium dioxide	LOW (BCF = 10)
naphthalene	HIGH (BCF = 18000)

### Mobility in soil

Ingredient	Mobility
diacetone alcohol	HIGH (KOC = 1)
titanium dioxide	LOW (KOC = 23.74)
naphthalene	LOW (KOC = 1837)

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

<b>Product / Packaging disposal</b>	<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>
-------------------------------------	---

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

<b>Marine Pollutant</b>	NO
<b>HAZCHEM</b>	Not Applicable

**Land transport (UN): 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 substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
HSR002624	N.O.S. (Subsidiary Hazard) Group Standard 2006
HSR002535	Compressed Gas Mixtures (Subsidiary Hazard) Group Standard 2006
HSR002596	Laboratory Chemicals and Reagent Kits Group Standard 2006
HSR002530	Cleaning Products (Subsidiary Hazard) Group Standard 2006
HSR002585	Fuel Additives (Subsidiary Hazard) Group Standard 2006
HSR002519	Aerosols (Subsidiary Hazard) Group Standard 2006
HSR002521	Animal Nutritional and Animal Care Products Group Standard 2006
HSR002606	Lubricants, Lubricant Additives, Coolants and Anti-freeze Agents (Subsidiary Hazard) Group Standard 2006
HSR002644	Polymers (Subsidiary Hazard) Group Standard 2006
HSR002647	Reagent Kits Group Standard 2006
HSR002612	Metal Industry Products (Subsidiary Hazard) Group Standard 2006
HSR002670	Surface Coatings and Colourants (Subsidiary Hazard) Group Standard 2006
HSR002503	Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2006
HSR002638	Photographic Chemicals (Subsidiary Hazard) Group Standard 2006
HSR002565	Embalming Products (Subsidiary Hazard) Group Standard 2006
HSR002578	Food Additives and Fragrance Materials (Subsidiary Hazard) Group Standard 2006
HSR002558	Dental Products (Subsidiary Hazard) Group Standard 2006
HSR002684	Water Treatment Chemicals (Subsidiary Hazard) Group Standard 2006
HSR002573	Fire Fighting Chemicals Group Standard 2006
HSR100425	Pharmaceutical Active Ingredients Group Standard 2010
HSR002600	Leather and Textile Products (Subsidiary Hazard) Group Standard 2006
HSR002571	Fertilisers (Subsidiary Hazard) Group Standard 2006
HSR002648	Refining Catalysts Group Standard 2006
HSR002653	Solvents (Subsidiary Hazard) Group Standard 2006
HSR002544	Construction Products (Subsidiary Hazard) Group Standard 2006
HSR002549	Corrosion Inhibitors (Subsidiary Hazard) Group Standard 2006
HSR002552	Cosmetic Products Group Standard 2006
HSR100757	Veterinary Medicine (Limited Pack Size, Finished Dose) Standard 2012
HSR100758	Veterinary Medicines (Non-dispersive Closed System Application) Group Standard 2012
HSR100628	Straight-chained Lepidopteran Sex Pheromone Group Standard 2012
HSR100580	Tattoo and Permanent Makeup Substances Group Standard 2011

**WHITE MINERAL OIL (PETROLEUM)(8042-47-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

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

New Zealand Workplace Exposure Standards (WES)

New Zealand Inventory of Chemicals (NZIoC)

**ANTIMONY DIAMYLIDITHIOCARBAMATE(15890-25-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

**DIACETONE ALCOHOL(123-42-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Workplace Exposure Standards (WES)

New Zealand Inventory of Chemicals (NZIoC)

Continued...

## Lubrication Engineers 5182 Pyroshield

**SILICA CRYSTALLINE - QUARTZ(14808-60-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

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

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

**MICA(12001-26-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

**TITANIUM DIOXIDE(13463-67-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

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

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

**CALCIUM CARBONATE(471-34-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

**FERRIC OXIDE(1309-37-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

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

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

**NAPHTHALENE(91-20-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

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

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

**Location Test Certificate**

Subject to Regulation 55 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations, a location test certificate is required when quantity greater than or equal to those indicated below are present.

Hazard Class	Quantity beyond which controls apply for closed containers	Quantity beyond which controls apply when use occurring in open containers
Not Applicable	Not Applicable	Not Applicable

**Approved Handler**

Subject to Regulation 56 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations and Regulation 9 of the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations, the substance must be under the personal control of an Approved Handler when present in a quantity greater than or equal to those indicated below.

Class of substance	Quantities
Not Applicable	Not Applicable

Refer Group Standards for further information

**Tracking Requirements**

Not Applicable

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (naphthalene; silica crystalline - quartz; diacetone alcohol; ferric oxide; mica; white mineral oil (petroleum); antimony diamylidithiocarbamate)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	N (mica)
Japan - ENCS	N (mica; white mineral oil (petroleum))
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	N (mica)

Continued...

**Legend:***Y = All ingredients are on the inventory**N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)***SECTION 16 OTHER INFORMATION****Other information****Ingredients with multiple cas numbers**

Name	CAS No
silica crystalline - quartz	14808-60-7, 122304-48-7, 122304-49-8, 12425-26-2, 1317-79-9, 70594-95-5, 87347-84-0, 308075-07-2
mica	12001-26-2, 129899-84-9, 61076-94-6
titanium dioxide	13463-67-7, 1317-70-0, 1317-80-2, 12188-41-9, 1309-63-3, 100292-32-8, 101239-53-6, 116788-85-3, 12000-59-8, 12701-76-7, 12767-65-6, 12789-63-8, 1344-29-2, 185323-71-1, 185828-91-5, 188357-76-8, 188357-79-1, 195740-11-5, 221548-98-7, 224963-00-2, 246178-32-5, 252962-41-7, 37230-92-5, 37230-94-7, 37230-95-8, 37230-96-9, 39320-58-6, 39360-64-0, 39379-02-7, 416845-43-7, 494848-07-6, 494848-23-6, 494851-77-3, 494851-98-8, 55068-84-3, 55068-85-4, 552316-51-5, 62338-64-1, 767341-00-4, 97929-50-5, 98084-96-9
calcium carbonate	471-34-1, 13397-26-7, 15634-14-7, 1317-65-3, 72608-12-9, 878759-26-3, 63660-97-9, 459411-10-0, 198352-33-9, 146358-95-4

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

This document is copyright.

Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.

TEL (+61 3) 9572 4700.