

# Lubrication Engineers 6401 Monolec Turbine Oil

Lubrication Engineers NZ Ltd

Chemwatch Hazard Alert Code: 1

Chemwatch: 8024-54

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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

|                               |  |
|-------------------------------|--|
| Product name                  | Lubrication Engineers 6401 Monolec Turbine Oil |
| Synonyms                      | Not Available                                  |
| Other means of identification | Not Available                                  |

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

|                          |  |
|--------------------------|--|
| Relevant identified uses | Lubricant<br>Use according to manufacturer's directions. |
|--------------------------|--|

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

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

### Emergency telephone number

|                                   |                              |
|-----------------------------------|------------------------------|
| Association / Organisation        | Lubrication Engineers NZ Ltd |
| Emergency telephone numbers       | +64 21 3385487               |
| Other emergency telephone numbers | 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   | 2   |
| Toxicity     | 0   | 1   |
| Body Contact | 1   | 2   |
| Reactivity   | 1   | 2   |
| Chronic      | 0   | 1   |

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

|   |  |
|---|--|
| Classification [1]                              | Skin Corrosion/Irritation Category 3   |
| Legend:   | 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI |
| Determined by Chemwatch using GHS/HSNO criteria | 6.3B   |

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**Label elements**

|                            |                |
|----------------------------|----------------|
| <b>Hazard pictogram(s)</b> | Not Applicable |
|----------------------------|----------------|

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

**Hazard statement(s)**

|             |                              |
|-------------|------------------------------|
| <b>H316</b> | Causes mild skin irritation. |
|-------------|------------------------------|

**Precautionary statement(s) Prevention**

Not Applicable

**Precautionary statement(s) Response**

|                  |  |
|------------------|--|
| <b>P332+P313</b> | If skin irritation occurs: Get medical advice/attention. |
|------------------|--|

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

**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>       |
| 7778-18-9     | NotSpec   | <u>calcium sulfate</u>                     |
| 140-88-5      | NotSpec   | <u>ethyl acrylate</u>                      |
| 122-39-4      | NotSpec   | <u>diphenylamine</u>                       |
| Not Available | balance   | Ingredients determined not to be hazardous |

**SECTION 4 FIRST AID MEASURES**

**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>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> <li>▶ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.</li> </ul>  |

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

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> | ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |
|-----------------------------|--|

### 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 full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> </ul>   |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ On combustion, may emit toxic fumes of carbon monoxide (CO).</li> </ul> <p>Combustion products include:<br/>carbon dioxide (CO<sub>2</sub>)<br/>nitrogen oxides (NO<sub>x</sub>)<br/>sulfur oxides (SO<sub>x</sub>)<br/>other pyrolysis products typical of burning organic material.<br/>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> | <p>Slippery when spilt.</p> <ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> </ul> |
| <b>Major Spills</b> | <p>Slippery when spilt.<br/>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> </ul>                               |

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

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

|                          |   |
|--------------------------|---|
| <b>Safe handling</b>     | <ul style="list-style-type: none"> <li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> </ul> |
| <b>Other information</b> | <ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> </ul>   |

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Conditions for safe storage, including any incompatibilities

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



+ X + O + + +

- 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) | calcium sulfate               | Calcium sulphate (Gypsum, Plaster of Paris) | 10 mg/m3      | Not Available | Not Available    | Not Available  |
| New Zealand Workplace Exposure Standards (WES) | ethyl acrylate                | Ethyl acrylate                              | Not Available | Not Available | 5 ppm / 20 mg/m3 | (sen) - Sensitiser                                       |
| New Zealand Workplace Exposure Standards (WES) | diphenylamine                 | Diphenylamine                               | 10 mg/m3      | Not Available | Not Available    | Not Available  |

EMERGENCY LIMITS

| Ingredient      | Material name   | TEEL-1        | TEEL-2        | TEEL-3        |
|-----------------|---|---------------|---------------|---------------|
| calcium sulfate | Calcium(II) sulfate dihydrate (1:1:2)                           | 30 mg/m3      | 330 mg/m3     | 2,000 mg/m3   |
| calcium sulfate | Calcium sulfate anhydrous; (Drierite; Gypsum; Plaster of Paris) | 30 mg/m3      | 330 mg/m3     | 2,000 mg/m3   |
| ethyl acrylate  | Ethyl acrylate  | Not Available | Not Available | Not Available |
| diphenylamine   | Diphenylamine   | 30 mg/m3      | 180 mg/m3     | 220 mg/m3     |

| Ingredient                    | Original IDLH | Revised IDLH  |
|-------------------------------|---------------|---------------|
| white mineral oil (petroleum) | 2,500 mg/m3   | Not Available |
| calcium sulfate               | Not Available | Not Available |
| ethyl acrylate                | 300 ppm       | Not Available |
| diphenylamine                 | Not Available | 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> <ul style="list-style-type: none"> <li>Process controls which involve changing the way a job activity or process is done to reduce the risk.</li> <li>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.</li> </ul> |
| <b>Personal protection</b>              |   |

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|                                |   |
|--------------------------------|---|
| <b>Eye and face protection</b> | <ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.</li> </ul>   |
| <b>Skin protection</b>         | See Hand protection below   |
| <b>Hands/feet protection</b>   | <ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</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> |
| <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>  |

## 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:

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| Material       | CPI |
|----------------|-----|
| BUTYL          | A   |
| PVA            | A   |
| TEFLON         | A   |
| BUTYL/NEOPRENE | C   |
| VITON/NEOPRENE | 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(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

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

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

## Information on basic physical and chemical properties

|                        |   |  |               |
|------------------------|---|--|---------------|
| <b>Appearance</b>      | Red oily liquid with a hydrocarbon-like odour; not miscible with water. |  |               |
| <b>Physical state</b>  | Liquid  | <b>Relative density (Water = 1)</b>            | 0.87          |
| <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 |

Continued...

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|  |                |                                  |                |
|--|----------------|----------------------------------|----------------|
| pH (as supplied)                             | 6-8            | Decomposition temperature        | Not Available  |
| Melting point / freezing point (°C)          | Not Available  | Viscosity (cSt)                  | 31.87          |
| 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)                     | <1             | VOC g/L                          | Not Available  |

## SECTION 10 STABILITY AND REACTIVITY

|                                    |  |
|------------------------------------|--|
| Reactivity                         | See section 7  |
| Chemical stability                 | <ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul> |
| 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      | 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.<br>Inhalation hazard is increased at higher temperatures.  |
| Ingestion    | The material has <b>NOT</b> 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 | 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<br>The material may accentuate any pre-existing dermatitis condition   |
| Eye          | There is some evidence to suggest that this material can cause eye irritation and damage in some persons.  |
| Chronic      | Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.<br>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. |

|   |  |  |
|---|--|--|
| Lubrication Engineers<br>6401 Monolec Turbine Oil | TOXICITY   | IRRITATION   |
|   | Not Available                                      | Not Available  |
| white mineral oil<br>(petroleum)                  | TOXICITY   | IRRITATION   |
|   | Dermal (rabbit) LD50: >2000 mg/kg <sup>[1]</sup>   | Eye: no adverse effect observed (not irritating) <sup>[1]</sup>  |
|   | Inhalation (rat) LC50: 7.64 mg/l4 h <sup>[1]</sup> | Skin: adverse effect observed (irritating) <sup>[1]</sup>        |
|   | Oral (rat) LD50: >5000 mg/kg <sup>[1]</sup>        | Skin: no adverse effect observed (not irritating) <sup>[1]</sup> |
| calcium sulfate                                   | TOXICITY   | IRRITATION   |
|   | Oral (rat) LD50: >1581 mg/kg <sup>[1]</sup>        | Not Available  |

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|                |  |  |
|----------------|--|--|
| ethyl acrylate | <b>TOXICITY</b>  | <b>IRRITATION</b>  |
|                | dermal (rat) LD50: =470 mg/kg <sup>[2]</sup>   | Eye (rabbit): 1204 ppm/7h  |
|                | Inhalation (rat) LC50: 1412.386626 mg/l/4hd <sup>[2]</sup>   | Eye (rabbit): 45 mg - mild                                       |
|                | Oral (rat) LD50: 800 mg/kg <sup>[2]</sup>  | Skin (rabbit): 10 mg/24h - mild                                  |
|                |  | Skin (rabbit): 500 mg open - mild                                |
| diphenylamine  | <b>TOXICITY</b>  | <b>IRRITATION</b>  |
|                | Dermal (rabbit) LD50: >2000 mg/kg <sup>[2]</sup>   | Eye: adverse effect observed (irritating) <sup>[1]</sup>         |
|                | Oral (rat) LD50: 1120 mg/kg <sup>[2]</sup>   | Skin: no adverse effect observed (not irritating) <sup>[1]</sup> |
| <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>WHITE MINERAL OIL (PETROLEUM)</b>  | <p>The substance is classified by IARC as Group 3:<br/><b>NOT</b> classifiable as to its carcinogenicity to humans.</p> <p>Evidence of carcinogenicity may be inadequate or limited in animal testing.</p> <p>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)</p>  |
| <b>CALCIUM SULFATE</b>  | <p>Gypsum (calcium sulfate dehydrate) irritates the skin, eye, mucous membranes, and airways. A series of studies involving Gypsum industry workers in Poland reported chronic, non-specific airways diseases.</p> <p>Repeat dose toxicity: Examination of workers at a gypsum manufacturing plant found restrictive defects on long-function tests in those who were chronically exposed to gypsum dust.</p> <p>Synergistic/antagonistic effects: Gypsum appears to be protective on quartz toxicity in animal testing.</p>  |
| <b>ETHYL ACRYLATE</b>   | <p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important.</p> <p>Where no "official" classification for acrylates and methacrylates exists, there have been cautious attempts to create classifications in the absence of contrary evidence. For example</p> <p>Monalkyl or monoarylestere of acrylic acids should be classified as R36/37/38 and R51/53</p> <p>Monoalkyl or monoaryl estere of methacrylic acid should be classified as R36/37/38</p> <p>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.</p> <p><b>WARNING:</b> This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.</p> <p>Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen<br/>[National Toxicology Program: U.S. Dep. of Health &amp; Human Services 2002]</p> <p>Based on the available oncogenicity data and without a better understanding of the carcinogenic mechanism the Health and Environmental Review Division (HERD), Office of Toxic Substances (OTS), of the US EPA previously concluded that all chemicals that contain the acrylate or methacrylate moiety (CH<sub>2</sub>=CHCOO or CH<sub>2</sub>=C(CH<sub>3</sub>)COO) should be considered to be a carcinogenic hazard unless shown otherwise by adequate testing.</p> <p>This position has now been revised and acrylates and methacrylates are no longer <i>de facto</i> carcinogens.</p> |
| <b>DIPHENYLAMINE</b>  | <p>Heating of substituted diphenylamines may generate vapours which can irritate the eyes and airways. Drying of skin and mucous membranes leading to irritation may occur with prolonged or repeated contact. Overexposure may cause skin and airway irritation with dizziness and flu-like symptoms. All show a slight to very low order of toxicity following oral or topical administration. Diphenylamine and all its substituted derivatives show slight to moderate acute toxicity. Overall, it is not considered to cause mutations or genetic toxicity. In animal testing, higher concentrations appear to reduce the number of viable offspring.</p> <p>ADI: 0.02 mg/kg/day NOEL: 1.5 mg/kg/day</p>   |
| <b>Lubrication Engineers 6401 Monolec Turbine Oil &amp; WHITE MINERAL OIL (PETROLEUM)</b> | <p>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:</p> <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> <p>Unrefined &amp; 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</p>   |

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|   |  |
|---|--|
|   | <p>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.</p> <p>Toxicity testing has consistently shown that lubricating base oils have low acute toxicities.</p> <p>For highly and severely refined distillate base oils:</p> <p>In animal studies, the acute, oral, semilethal dose is &gt;5g/kg body weight and the semilethal dose by skin contact is &gt;2g/kg body weight. The semilethal concentration for inhalation is 2.18 to &gt;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.</p> |
| <b>CALCIUM SULFATE &amp; ETHYL ACRYLATE &amp; DIPHENYLAMINE</b> | <p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.</p>   |

|  |   |                                 |   |
|--|---|---------------------------------|---|
| <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 either not available or does not fill the criteria for classification  
✓ – Data available to make classification

**SECTION 12 ECOLOGICAL INFORMATION**

**Toxicity**

| Lubrication Engineers 6401 Monolec Turbine Oil | 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        |
|  | LC50          | 96                            | Fish                          | 1.13mg/L      | 2             |
|  | EC50          | 48                            | Crustacea                     | 2mg/L         | 2             |
| EC50   | 72            | Algae or other aquatic plants | 1.714mg/L                     | 2             |               |
| calcium sulfate                                | ENDPOINT      | TEST DURATION (HR)            | SPECIES                       | VALUE         | SOURCE        |
|  | LC50          | 96                            | Fish                          | >1-970mg/L    | 2             |
|  | EC50          | 72                            | Algae or other aquatic plants | >79mg/L       | 2             |
|  | EC0           | 96                            | Crustacea                     | =1255.000mg/L | 1             |
| NOEC   | 504           | Crustacea                     | 360mg/L                       | 4             |               |
| ethyl acrylate                                 | ENDPOINT      | TEST DURATION (HR)            | SPECIES                       | VALUE         | SOURCE        |
|  | LC50          | 96                            | Fish                          | 1.1mg/L       | 2             |
|  | EC50          | 48                            | Crustacea                     | 1.3mg/L       | 2             |
|  | EC50          | 72                            | Algae or other aquatic plants | 1.71mg/L      | 2             |
|  | EC0           | 48                            | Crustacea                     | 0.7mg/L       | 2             |
| NOEC   | 504           | Crustacea                     | 0.136mg/L                     | 2             |               |
| diphenylamine                                  | ENDPOINT      | TEST DURATION (HR)            | SPECIES                       | VALUE         | SOURCE        |
|  | LC50          | 96                            | Fish                          | 3.287mg/L     | 3             |
|  | EC50          | 48                            | Crustacea                     | 0.31mg/L      | 4             |
|  | EC50          | 72                            | Algae or other aquatic plants | 0.048mg/L     | 1             |
|  | BCF           | 768                           | Fish                          | 0.0437mg/L    | 4             |
| NOEC   | 504           | Crustacea                     | 0.16mg/L                      | 1             |               |

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



Lubrication Engineers 6401 Monolec Turbine Oil

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            |
|-----------------|---------------------------|-----------------------------|
| calcium sulfate | HIGH                      | HIGH                        |
| ethyl acrylate  | LOW (Half-life = 14 days) | LOW (Half-life = 0.95 days) |
| diphenylamine   | LOW (Half-life = 56 days) | Not Available               |

**Bioaccumulative potential**

| Ingredient      | Bioaccumulation        |
|-----------------|------------------------|
| calcium sulfate | LOW (LogKOW = -2.2002) |
| ethyl acrylate  | LOW (LogKOW = 1.32)    |
| diphenylamine   | LOW (BCF = 253)        |

**Mobility in soil**

| Ingredient      | Mobility          |
|-----------------|-------------------|
| calcium sulfate | LOW (KOC = 6.124) |
| ethyl acrylate  | LOW (KOC = 11.85) |
| diphenylamine   | LOW (KOC = 1887)  |

**SECTION 13 DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

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

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

**Disposal Requirements**

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

## 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 2017   |
| HSR002535  | Gas Under Pressure Mixtures (Subsidiary Hazard) Group Standard 2017                                      |
| HSR002596  | Laboratory Chemicals and Reagent Kits Group Standard 2017  |
| HSR002530  | Cleaning Products (Subsidiary Hazard) Group Standard 2017  |
| HSR002585  | Fuel Additives (Subsidiary Hazard) Group Standard 2017   |
| HSR002519  | Aerosols (Subsidiary Hazard) Group Standard 2017   |
| HSR002521  | Animal Nutritional and Animal Care Products Group Standard 2017  |
| HSR002606  | Lubricants, Lubricant Additives, Coolants and Anti-freeze Agents (Subsidiary Hazard) Group Standard 2017 |
| HSR002644  | Polymers (Subsidiary Hazard) Group Standard 2017   |
| HSR002647  | Reagent Kits Group Standard 2017   |
| HSR002670  | Surface Coatings and Colourants (Subsidiary Hazard) Group Standard 2017                                  |
| HSR002638  | Photographic Chemicals (Subsidiary Hazard) Group Standard 2017   |
| HSR002565  | Embalming Products (Subsidiary Hazard) Group Standard 2017   |
| HSR002578  | Food Additives and Fragrance Materials (Subsidiary Hazard) Group Standard 2017                           |
| HSR002558  | Dental Products (Subsidiary Hazard) Group Standard 2017  |
| HSR002684  | Water Treatment Chemicals (Subsidiary Hazard) Group Standard 2017  |
| HSR002573  | Fire Fighting Chemicals Group Standard 2017  |
| HSR100425  | Pharmaceutical Active Ingredients Group Standard 2017  |
| HSR002600  | Leather and Textile Products (Subsidiary Hazard) Group Standard 2017                                     |
| HSR002605  | Lubricants (Low Hazard) Group Standard 2017  |
| HSR002571  | Fertilisers (Subsidiary Hazard) Group Standard 2017  |
| HSR002648  | Refining Catalysts Group Standard 2017   |
| HSR002653  | Solvents (Subsidiary Hazard) Group Standard 2017   |
| HSR002544  | Construction Products (Subsidiary Hazard) Group Standard 2017  |
| HSR002549  | Corrosion Inhibitors (Subsidiary Hazard) Group Standard 2017   |
| HSR100757  | Veterinary Medicine (Limited Pack Size, Finished Dose) Standard 2017                                     |
| HSR100758  | Veterinary Medicines (Non-dispersive Closed System Application) Group Standard 2017                      |
| HSR100759  | Veterinary Medicines (Non-dispersive Open System Application) Group Standard 2017                        |
| HSR100580  | Tattoo and Permanent Makeup Substances Group Standard 2017   |

|           |  |
|-----------|--|
| HSR002612 | Metal Industry Products (Subsidiary Hazard) Group Standard 2017                        |
| HSR002503 | Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2017 |
| HSR002552 | Cosmetic Products Group Standard 2017  |

**WHITE MINERAL OIL (PETROLEUM) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Chemical Footprint Project - Chemicals of High Concern List

IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO

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

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

International FOSFA List of Banned Immediate Previous Cargoes

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

**CALCIUM SULFATE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

**ETHYL ACRYLATE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Chemical Footprint Project - Chemicals of High Concern List

GESAMP/EHS Composite List - GESAMP Hazard Profiles

IMO IBC Code Chapter 17: Summary of minimum requirements

IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk

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

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B : Possibly carcinogenic to humans

International Air Transport Association (IATA) Dangerous Goods Regulations

International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft

International FOSFA List of Banned Immediate Previous Cargoes

International Maritime Dangerous Goods Requirements (IMDG Code)

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

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

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

**DIPHENYLAMINE IS FOUND ON THE FOLLOWING REGULATORY LISTS**

GESAMP/EHS Composite List - GESAMP Hazard Profiles

IMO IBC Code Chapter 17: Summary of minimum requirements

IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk

International Air Transport Association (IATA) Dangerous Goods Regulations

International Maritime Dangerous Goods Requirements (IMDG Code)

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

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

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

**Hazardous Substance Location**

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

| 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   |

**Certified Handler**

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

| Class of substance | Quantities     |
|--------------------|----------------|
| Not Applicable     | Not Applicable |

Refer Group Standards for further information

**Tracking Requirements**

Not Applicable

**National Inventory Status**

| National Inventory | Status   |
|--------------------|--|
| Australia - AICS   | Yes  |
| Canada - DSL       | Yes  |
| Canada - NDSL      | No (diphenylamine; calcium sulfate; ethyl acrylate; white mineral oil (petroleum)) |
| China - IECSC      | Yes  |

## Lubrication Engineers 6401 Monolec Turbine Oil

|                               |  |
|-------------------------------|--|
| Europe - EINEC / ELINCS / NLP | Yes  |
| Japan - ENCS                  | No (white mineral oil (petroleum))   |
| Korea - KECI                  | Yes  |
| New Zealand - NZIoC           | Yes  |
| Philippines - PICCS           | Yes  |
| USA - TSCA                    | Yes  |
| Taiwan - TCSI                 | Yes  |
| Mexico - INSQ                 | Yes  |
| Vietnam - NCI                 | Yes  |
| Russia - ARIPS                | Yes  |
| <b>Legend:</b>                | Yes = All CAS declared ingredients are on the inventory<br>No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets) |

## SECTION 16 OTHER INFORMATION

|                      |            |
|----------------------|------------|
| <b>Revision Date</b> | 01/11/2019 |
| <b>Initial Date</b>  | 01/11/2009 |

## SDS Version Summary

| Version | Issue Date | Sections Updated   |
|---------|------------|--|
| 6.1.1.1 | 09/01/2015 | Acute Health (eye), Acute Health (inhaled), Acute Health (skin), Appearance, Classification, Engineering Control, Environmental, Exposure Standard, Fire Fighter (fire/explosion hazard), First Aid (eye), First Aid (skin), First Aid (swallowed), Handling Procedure, Ingredients, Personal Protection (Respirator), Personal Protection (eye), Physical Properties, Storage (storage incompatibility), Toxicity and Irritation (Other), Use, Name |
| 7.1.1.1 | 09/01/2015 | Supplier Information   |
| 8.1.1.1 | 01/11/2019 | One-off system update. NOTE: This may or may not change the GHS classification   |

## Other information

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

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

## Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average  
 PC—STEL: Permissible Concentration-Short Term Exposure Limit  
 IARC: International Agency for Research on Cancer  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 STEL: Short Term Exposure Limit  
 TEEL: Temporary Emergency Exposure Limit  
 IDLH: Immediately Dangerous to Life or Health Concentrations  
 OSF: Odour Safety Factor  
 NOAEL :No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value  
 LOD: Limit Of Detection  
 OTV: Odour Threshold Value  
 BCF: BioConcentration Factors  
 BEI: Biological Exposure Index

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