



## 22120, 22122, 22124, 22125, 22273 Top Tec 4110 5W-40 1L, 5L, 20L, 205L, 1000L

### Liqui Moly GmbH

Chemwatch: 5399-40

Version No: 3.1

Safety Data Sheet according to WHMIS 2015 requirements

Chemwatch Hazard Alert Code: 1

Issue Date: 23/12/2022

Print Date: 30/03/2023

L.GHS.CAN.EN.E

## SECTION 1 Identification

### Product Identifier

|                               |                                                                               |
|-------------------------------|-------------------------------------------------------------------------------|
| Product name                  | 22120, 22122, 22124, 22125, 22273 Top Tec 4110 5W-40 1L, 5L, 20L, 205L, 1000L |
| Chemical Name                 | Not Applicable                                                                |
| Synonyms                      | Not Available                                                                 |
| Chemical formula              | Not Applicable                                                                |
| Other means of identification | Not Available                                                                 |

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

|                          |                                             |
|--------------------------|---------------------------------------------|
| Relevant identified uses | Use according to manufacturer's directions. |
|--------------------------|---------------------------------------------|

### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

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

### Emergency phone number

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

## SECTION 2 Hazard(s) identification

### Classification of the substance or mixture

NFPA 704 diamond



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

### Canadian WHMIS Symbols

|                |                                                                                |
|----------------|--------------------------------------------------------------------------------|
| Classification | Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3 |
|----------------|--------------------------------------------------------------------------------|

### Label elements

|                     |         |
|---------------------|---------|
| Hazard pictogram(s) |         |
| Signal word         | Warning |

### Hazard statement(s)

|      |                                    |
|------|------------------------------------|
| H336 | May cause drowsiness or dizziness. |
|------|------------------------------------|

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

Not Applicable

**Precautionary statement(s) Prevention**

|             |                                                 |
|-------------|-------------------------------------------------|
| <b>P271</b> | Use only outdoors or in a well-ventilated area. |
| <b>P261</b> | Avoid breathing mist/vapours/spray.             |

**Precautionary statement(s) Response**

|                  |                                                                            |
|------------------|----------------------------------------------------------------------------|
| <b>P312</b>      | Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.      |
| <b>P304+P340</b> | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |

**Precautionary statement(s) Storage**

|                  |                                                                  |
|------------------|------------------------------------------------------------------|
| <b>P405</b>      | Store locked up.                                                 |
| <b>P403+P233</b> | Store in a well-ventilated place. Keep container tightly closed. |

**Precautionary statement(s) Disposal**

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

**SECTION 3 Composition / information on ingredients****Substances**

See section below for composition of Mixtures

**Mixtures**

| CAS No       | %[weight] | Name                                                            |
|--------------|-----------|-----------------------------------------------------------------|
| 64742-54-7.  | >60       | <u>paraffinic distillate, heavy, hydrotreated (severe)</u>      |
| 72623-86-0.  | 1-10      | <u>lubricating oils, petroleum C15-30 hydrotreated neutral</u>  |
| 72623-87-1.  | 1-10      | <u>lubricating oils, petroleum C20-50, hydrotreated neutral</u> |
| 1190625-94-5 | <1        | <u>(C14-16-18)alkylphenol</u>                                   |

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

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye Contact</b>  | If this product comes in contact with eyes: <ul style="list-style-type: none"><li>▶ Wash out immediately with water.</li><li>▶ If irritation continues, seek medical attention.</li><li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Skin Contact</b> | If skin or hair contact occurs: <ul style="list-style-type: none"><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>▶ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.</li><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><li>▶ Avoid giving milk or oils.</li><li>▶ Avoid giving alcohol.</li></ul> |

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

For petroleum distillates

- In case of ingestion, gastric lavage with activated charcoal can be used promptly to prevent absorption - decontamination (induced emesis or lavage) is controversial and should be considered on the merits of each individual case; of course the usual precautions of an endotracheal tube should be considered prior to lavage, to prevent aspiration.
- Individuals intoxicated by petroleum distillates should be hospitalized immediately, with acute and continuing attention to neurologic and cardiopulmonary function.
- Positive pressure ventilation may be necessary.
- Acute central nervous system signs and symptoms may result from large ingestions of aspiration-induced hypoxia.
- After the initial episode, individuals should be followed for changes in blood variables and the delayed appearance of pulmonary oedema and chemical pneumonitis. Such patients should be followed for several days or weeks for delayed effects, including bone marrow toxicity, hepatic and renal impairment. Individuals with chronic pulmonary disease will be more seriously impaired, and recovery from inhalation exposure may be complicated.
- Gastrointestinal symptoms are usually minor and pathological changes of the liver and kidneys are reported to be uncommon in acute intoxications.
- Chlorinated and non-chlorinated hydrocarbons may sensitize the heart to epinephrine and other circulating catecholamines so that arrhythmias may occur. Careful consideration of this potential adverse effect should precede administration of epinephrine or other cardiac stimulants and the selection of bronchodilators.
  - ▶ 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 Fire-fighting measures

### Extinguishing media

- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.
- ▶ Water spray or fog - Large fires only.

### 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 |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|

### Special protective equipment and precautions for fire-fighters

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Fire Fighting</b>         | <ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ Avoid spraying water onto liquid pools.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</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> <li>▶ May emit acrid smoke.</li> <li>▶ Mists containing combustible materials may be explosive.</li> </ul> <p>Combustion products include:<br/>carbon dioxide (CO<sub>2</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

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |             |            |                 |  |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------------|------------|-----------------|--|
| Minor Spills | Slippery when spilt. <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><li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li><li>▶ Wipe up.</li><li>▶ Place in a suitable, labelled container for waste disposal.</li></ul> |      |             |            |                 |  |
| Major Spills | Chemical Class: aliphatic hydrocarbons<br>For release onto land: recommended sorbents listed in order of priority.                                                                                                                                                                                                                                                                                                                                                                  |      |             |            |                 |  |
|              | SORBENT TYPE                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | RANK | APPLICATION | COLLECTION | LIMITATIONS     |  |
|              | LAND SPILL - SMALL                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |             |            |                 |  |
|              | cross-linked polymer - particulate                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1    | shovel      | shovel     | R, W, SS        |  |
|              | cross-linked polymer - pillow                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1    | throw       | pitchfork  | R, DGC, RT      |  |
|              | wood fiber - pillow                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2    | throw       | pitchfork  | R, P, DGC, RT   |  |
|              | treated wood fibre- pillow                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2    | throw       | pitchfork  | DGC, RT         |  |
|              | sorbent clay - particulate                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 3    | shovel      | shovel     | R, I, P         |  |
|              | foamed glass - pillow                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3    | throw       | pitchfork  | R, P, DGC, RT   |  |
|              | LAND SPILL - MEDIUM                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |             |            |                 |  |
|              | cross-linked polymer - particulate                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1    | blower      | skiploader | R,W, SS         |  |
|              | cross-linked polymer - pillow                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2    | throw       | skiploader | R, DGC, RT      |  |
|              | sorbent clay - particulate                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 3    | blower      | skiploader | R, I, P         |  |
|              | polypropylene - particulate                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3    | blower      | skiploader | W, SS, DGC      |  |
|              | expanded mineral - particulate                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 4    | blower      | skiploader | R, I, W, P, DGC |  |
|              | polypropylene - mat                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4    | throw       | skiploader | DGC, RT         |  |
|              | Legend<br>DGC: Not effective where ground cover is dense                                                                                                                                                                                                                                                                                                                                                                                                                            |      |             |            |                 |  |

Continued...

## 22120, 22122, 22124, 22125, 22273 Top Tec 4110 5W-40 1L, 5L, 20L, 205L, 1000L

R; Not reusable  
 I: Not incinerable  
 P: Effectiveness reduced when rainy  
 RT: Not effective where terrain is rugged  
 SS: Not for use within environmentally sensitive sites  
 W: Effectiveness reduced when windy  
 Reference: Sorbents for Liquid Hazardous Substance Cleanup and Control;  
 R.W Melvold et al: Pollution Technology Review No. 150: Noyes Data Corporation 1988  
 Slippery when spilt.  
 Moderate hazard.

- ▶ Clear area of personnel and move upwind.
- ▶ Alert Fire Brigade and tell them location and nature of hazard.
- ▶ Wear breathing apparatus plus protective gloves.
- ▶ Prevent, by any means available, spillage from entering drains or water course.
- ▶ No smoking, naked lights or ignition sources.
- ▶ Increase ventilation.
- ▶ Stop leak if safe to do so.
- ▶ Contain spill with sand, earth or vermiculite.
- ▶ Collect recoverable product into labelled containers for recycling.
- ▶ Absorb remaining product with sand, earth or vermiculite.
- ▶ Collect solid residues and seal in labelled drums for disposal.
- ▶ Wash area and prevent runoff into drains.
- ▶ If contamination of drains or waterways occurs, advise emergency services.

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

## SECTION 7 Handling and storage

### Precautions for safe handling

#### Safe handling

The conductivity of this material may make it a static accumulator. A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10 000 pS/m. Whether a liquid is nonconductive or semi-conductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid.

- ▶ Containers, even those that have been emptied, may contain explosive vapours.
- ▶ Do NOT cut, drill, grind, weld or perform similar operations on or near containers.
- Electrostatic discharge may be generated during pumping - this may result in fire.
- Ensure electrical continuity by bonding and grounding (earthing) all equipment.
- Restrict line velocity during pumping in order to avoid generation of electrostatic discharge ( $\leq 1$  m/sec until fill pipe submerged to twice its diameter, then  $\leq 7$  m/sec).
- Avoid splash filling.
- Do NOT use compressed air for filling, discharging or handling operations.
- Wait 2 minutes after tank filling (for tanks such as those on road tanker vehicles) before opening hatches or manholes.
- Wait 30 minutes after tank filling (for large storage tanks) before opening hatches or manholes. Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur. Be aware of handling operations that may give rise to additional hazards that result from the accumulation of static charges. These include but are not limited to pumping (especially turbulent flow), mixing, filtering, splash filling, cleaning and filling of tanks and containers, sampling, switch loading, gauging, vacuum truck operations, and mechanical movements. These activities may lead to static discharge e.g. spark formation. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge ( $\leq 1$  m/s until fill pipe submerged to twice its diameter, then  $\leq 7$  m/s). Avoid splash filling.
- Do NOT use compressed air for filling, discharging, or handling operations
  - ▶ 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.
  - ▶ **DO NOT enter confined spaces until atmosphere has been checked.**
  - ▶ **DO NOT allow material to contact humans, exposed food or food utensils.**
  - ▶ Avoid contact with incompatible materials.
  - ▶ **When handling, DO NOT eat, drink or smoke.**
  - ▶ Keep containers securely sealed when not in use.
  - ▶ Avoid physical damage to containers.
  - ▶ Always wash hands with soap and water after handling.
  - ▶ Work clothes should be laundered separately. Launder contaminated clothing before re-use.
  - ▶ Use good occupational work practice.
  - ▶ Observe manufacturer's storage and handling recommendations contained within this SDS.
  - ▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

#### Other information

- ▶ Store in original containers.
- ▶ Keep containers securely sealed.
- ▶ No smoking, naked lights or ignition sources.
- ▶ Store in a cool, dry, well-ventilated area.
- ▶ Store away from incompatible materials and foodstuff containers.
- ▶ Protect containers against physical damage and check regularly for leaks.
- ▶ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Continued...

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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>· <b>CARE:</b> Water in contact with heated material may cause foaming or a steam explosion with possible severe burns from wide scattering of hot material. Resultant overflow of containers may result in fire.</li> <li>· Oil leaks in a pressurized circuit may result in a fine flammable spray (the lower flammability limit for oil mist is reached for a concentration of about 45 g/m<sup>3</sup>)</li> <li>· Autoignition temperatures may be significantly lower under particular conditions (slow oxidation on finely divided materials).</li> <li>▶ Avoid reaction with oxidising agents</li> </ul> |

## SECTION 8 Exposure controls / personal protection

### Control parameters

#### Occupational Exposure Limits (OEL)

#### INGREDIENT DATA

| Source                                                                                  | Ingredient                                              | Material name                                                                   | TWA                 | STEL                 | Peak          | Notes                                                              |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------|---------------------|----------------------|---------------|--------------------------------------------------------------------|
| Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances           | paraffinic distillate, heavy, hydrotreated (severe)     | Oil mist, mineral                                                               | 5 mg/m <sup>3</sup> | 10 mg/m <sup>3</sup> | Not Available | Not Available                                                      |
| Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits | paraffinic distillate, heavy, hydrotreated (severe)     | Oil mist, mineral                                                               | 5 mg/m <sup>3</sup> | 10 mg/m <sup>3</sup> | Not Available | Not Available                                                      |
| Canada - Manitoba Occupational Exposure Limits                                          | paraffinic distillate, heavy, hydrotreated (severe)     | Not Available                                                                   | 5 mg/m <sup>3</sup> | Not Available        | Not Available | TLV® Basis: URT irr                                                |
| Canada - Prince Edward Island Occupational Exposure Limits                              | paraffinic distillate, heavy, hydrotreated (severe)     | Mineral oil, excluding metal working fluids - Pure, highly and severely refined | 5 mg/m <sup>3</sup> | Not Available        | Not Available | TLV® Basis: URT irr                                                |
| Canada - British Columbia Occupational Exposure Limits                                  | paraffinic distillate, heavy, hydrotreated (severe)     | Oil mist - mineral, severely refined                                            | 1 mg/m <sup>3</sup> | Not Available        | Not Available | Not Available                                                      |
| Canada - Nova Scotia Occupational Exposure Limits                                       | paraffinic distillate, heavy, hydrotreated (severe)     | Oil mist - mineral                                                              | 5 mg/m <sup>3</sup> | 10 mg/m <sup>3</sup> | Not Available | TLV Basis: lung. As sampled by method that does not collect vapor. |
| Canada - Alberta Occupational Exposure Limits                                           | paraffinic distillate, heavy, hydrotreated (severe)     | Oil mist, mineral                                                               | 5 mg/m <sup>3</sup> | 10 mg/m <sup>3</sup> | Not Available | Not Available                                                      |
| Canada - Northwest Territories Occupational Exposure Limits                             | paraffinic distillate, heavy, hydrotreated (severe)     | Oil mist, mineral                                                               | 5 mg/m <sup>3</sup> | 10 mg/m <sup>3</sup> | Not Available | Not Available                                                      |
| Canada - Quebec Permissible Exposure Values for Airborne Contaminants                   | paraffinic distillate, heavy, hydrotreated (severe)     | Mineral oil (mist): Pure, highly and ultra-refined - inhalable dust             | 5 mg/m <sup>3</sup> | Not Available        | Not Available | Not Available                                                      |
| Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances           | lubricating oils, petroleum C15-30 hydrotreated neutral | Oil mist, mineral                                                               | 5 mg/m <sup>3</sup> | 10 mg/m <sup>3</sup> | Not Available | Not Available                                                      |
| Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits | lubricating oils, petroleum C15-30 hydrotreated neutral | Oil mist, mineral                                                               | 5 mg/m <sup>3</sup> | 10 mg/m <sup>3</sup> | Not Available | Not Available                                                      |
| Canada - Manitoba Occupational Exposure Limits                                          | lubricating oils, petroleum C15-30 hydrotreated neutral | Not Available                                                                   | 5 mg/m <sup>3</sup> | Not Available        | Not Available | TLV® Basis: URT irr                                                |
| Canada - Prince Edward Island Occupational Exposure Limits                              | lubricating oils, petroleum C15-30 hydrotreated neutral | Mineral oil, excluding metal working fluids - Pure, highly and severely refined | 5 mg/m <sup>3</sup> | Not Available        | Not Available | TLV® Basis: URT irr                                                |
| Canada - British Columbia Occupational Exposure Limits                                  | lubricating oils, petroleum C15-30 hydrotreated neutral | Oil mist - mineral, severely refined                                            | 1 mg/m <sup>3</sup> | Not Available        | Not Available | Not Available                                                      |
| Canada - Nova Scotia Occupational Exposure Limits                                       | lubricating oils, petroleum C15-30 hydrotreated neutral | Oil mist - mineral                                                              | 5 mg/m <sup>3</sup> | 10 mg/m <sup>3</sup> | Not Available | TLV Basis: lung. As sampled by method that does not collect vapor. |
| Canada - Alberta Occupational Exposure Limits                                           | lubricating oils, petroleum C15-30 hydrotreated neutral | Oil mist, mineral                                                               | 5 mg/m <sup>3</sup> | 10 mg/m <sup>3</sup> | Not Available | Not Available                                                      |
| Canada - Northwest Territories Occupational Exposure Limits                             | lubricating oils, petroleum C15-30 hydrotreated neutral | Oil mist, mineral                                                               | 5 mg/m <sup>3</sup> | 10 mg/m <sup>3</sup> | Not Available | Not Available                                                      |
| Canada - Quebec Permissible Exposure Values for Airborne Contaminants                   | lubricating oils, petroleum C15-30 hydrotreated neutral | Mineral oil (mist): Pure, highly and ultra-refined - inhalable dust             | 5 mg/m <sup>3</sup> | Not Available        | Not Available | Not Available                                                      |

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| Source                                                                                  | Ingredient                                               | Material name                                                                                | TWA      | STEL          | Peak          | Notes                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------|----------|---------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances           | lubricating oils, petroleum C20-50, hydrotreated neutral | Oil mist, mineral                                                                            | 5 mg/m3  | 10 mg/m3      | Not Available | Not Available                                                                                                                                                                                                                                                                                                                                                                                    |
| Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits | lubricating oils, petroleum C20-50, hydrotreated neutral | Oil mist, mineral                                                                            | 5 mg/m3  | 10 mg/m3      | Not Available | Not Available                                                                                                                                                                                                                                                                                                                                                                                    |
| Canada - Manitoba Occupational Exposure Limits                                          | lubricating oils, petroleum C20-50, hydrotreated neutral | Not Available                                                                                | 5 mg/m3  | Not Available | Not Available | TLV® Basis: URT irr                                                                                                                                                                                                                                                                                                                                                                              |
| Canada - Prince Edward Island Occupational Exposure Limits                              | lubricating oils, petroleum C20-50, hydrotreated neutral | Mineral oil, excluding metal working fluids - Pure, highly and severely refined              | 5 mg/m3  | Not Available | Not Available | TLV® Basis: URT irr                                                                                                                                                                                                                                                                                                                                                                              |
| Canada - British Columbia Occupational Exposure Limits                                  | lubricating oils, petroleum C20-50, hydrotreated neutral | Oil mist - mineral, severely refined                                                         | 1 mg/m3  | Not Available | Not Available | Not Available                                                                                                                                                                                                                                                                                                                                                                                    |
| Canada - Nova Scotia Occupational Exposure Limits                                       | lubricating oils, petroleum C20-50, hydrotreated neutral | Oil mist - mineral                                                                           | 5 mg/m3  | 10 mg/m3      | Not Available | TLV Basis: lung. As sampled by method that does not collect vapor.                                                                                                                                                                                                                                                                                                                               |
| Canada - Alberta Occupational Exposure Limits                                           | lubricating oils, petroleum C20-50, hydrotreated neutral | Oil mist, mineral                                                                            | 5 mg/m3  | 10 mg/m3      | Not Available | Not Available                                                                                                                                                                                                                                                                                                                                                                                    |
| Canada - Northwest Territories Occupational Exposure Limits                             | lubricating oils, petroleum C20-50, hydrotreated neutral | Oil mist, mineral                                                                            | 5 mg/m3  | 10 mg/m3      | Not Available | Not Available                                                                                                                                                                                                                                                                                                                                                                                    |
| Canada - Quebec Permissible Exposure Values for Airborne Contaminants                   | lubricating oils, petroleum C20-50, hydrotreated neutral | Mineral oil (mist): Pure, highly and ultra-refined - inhalable dust                          | 5 mg/m3  | Not Available | Not Available | Not Available                                                                                                                                                                                                                                                                                                                                                                                    |
| Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits | (C14-16-18)alkylphenol                                   | Particles (Insoluble or Poorly Soluble) Not Otherwise Specified: Respirable fraction++       | 3 mg/m3  | 6 mg/m3       | Not Available | Not Available                                                                                                                                                                                                                                                                                                                                                                                    |
| Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits | (C14-16-18)alkylphenol                                   | Particles (Insoluble or Poorly Soluble) Not Otherwise Specified: Inhalable fraction++        | 10 mg/m3 | 20 mg/m3      | Not Available | Not Available                                                                                                                                                                                                                                                                                                                                                                                    |
| Canada - Ontario Occupational Exposure Limits                                           | (C14-16-18)alkylphenol                                   | Particles (Insoluble or Poorly Soluble) Not Otherwise Specified (PNOS) (Respirable fraction) | 3 mg/m3  | Not Available | Not Available | (R) Respirable fraction: means that size fraction of the airborne particulate deposited in the gas-exchange region of the respiratory tract and collected during air sampling with a particle size-selective device that, (a) meets the ACGIH particle size-selective sampling criteria for airborne particulate matter; and (b) has the cut point of 4 µm at 50 per cent collection efficiency. |
| Canada - Ontario Occupational Exposure Limits                                           | (C14-16-18)alkylphenol                                   | Particles (Insoluble or Poorly Soluble) Not Otherwise Specified (PNOS) (Inhalable fraction)  | 10 mg/m3 | Not Available | Not Available | (I) Inhalable fraction: means that size fraction of the airborne particulate deposited anywhere in the respiratory tract and collected during air sampling with a particle size-selective device that, (a) meets the ACGIH particle size-selective sampling criteria for airborne particulate matter; and (b) has the cut point of 100 µm at 50 per cent collection efficiency.                  |
| Canada - Nova Scotia Occupational Exposure Limits                                       | (C14-16-18)alkylphenol                                   | Particles (Insoluble or Poorly Soluble) [NOS] Inhalable particles                            | 10 mg/m3 | Not Available | Not Available | See Appendix B current TLV/BEI Book                                                                                                                                                                                                                                                                                                                                                              |
| Canada - Nova Scotia Occupational Exposure Limits                                       | (C14-16-18)alkylphenol                                   | Particles (Insoluble or Poorly Soluble) [NOS] Respirable particles                           | 3 mg/m3  | Not Available | Not Available | See Appendix B current TLV/BEI Book                                                                                                                                                                                                                                                                                                                                                              |
| Canada - Alberta Occupational Exposure Limits                                           | (C14-16-18)alkylphenol                                   | Particulate Not Otherwise Regulated: Respirable                                              | 3 mg/m3  | Not Available | Not Available | 3 - Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required.                                                                                                                                                                                                                                                      |
| Canada - Alberta Occupational Exposure Limits                                           | (C14-16-18)alkylphenol                                   | Particulate Not Otherwise Regulated: Total                                                   | 10 mg/m3 | Not Available | Not Available | 3 - Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required.                                                                                                                                                                                                                                                      |
| Canada - Northwest Territories Occupational Exposure Limits                             | (C14-16-18)alkylphenol                                   | Particles (Insoluble or Poorly Soluble) Not Otherwise Specified: Respirable fraction         | 3 mg/m3  | 6 mg/m3       | Not Available | Not Available                                                                                                                                                                                                                                                                                                                                                                                    |

22120, 22122, 22124, 22125, 22273 Top Tec 4110 5W-40 1L, 5L, 20L, 205L, 1000L

| Source                                                                | Ingredient             | Material name                                                                       | TWA      | STEL          | Peak          | Notes                                                                                                                     |
|-----------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------|----------|---------------|---------------|---------------------------------------------------------------------------------------------------------------------------|
| Canada - Northwest Territories Occupational Exposure Limits           | (C14-16-18)alkylphenol | Particles (Insoluble or Poorly Soluble) Not Otherwise Specified: Inhalable fraction | 10 mg/m3 | 20 mg/m3      | Not Available | Not Available                                                                                                             |
| Canada - Quebec Permissible Exposure Values for Airborne Contaminants | (C14-16-18)alkylphenol | Particulates Not Otherwise Classified (PNOC) - Total dust                           | 10 mg/m3 | Not Available | Not Available | Note 1: The standard corresponds to dust containing no asbestos and the percentage in crystalline silica is less than 1%. |

| Emergency Limits                                         |           |             |             |
|----------------------------------------------------------|-----------|-------------|-------------|
| Ingredient                                               | TEEL-1    | TEEL-2      | TEEL-3      |
| paraffinic distillate, heavy, hydrotreated (severe)      | 140 mg/m3 | 1,500 mg/m3 | 8,900 mg/m3 |
| lubricating oils, petroleum C15-30 hydrotreated neutral  | 140 mg/m3 | 1,500 mg/m3 | 8,900 mg/m3 |
| lubricating oils, petroleum C20-50, hydrotreated neutral | 140 mg/m3 | 1,500 mg/m3 | 8,900 mg/m3 |

| Ingredient                                               | Original IDLH | Revised IDLH  |
|----------------------------------------------------------|---------------|---------------|
| paraffinic distillate, heavy, hydrotreated (severe)      | 2,500 mg/m3   | Not Available |
| lubricating oils, petroleum C15-30 hydrotreated neutral  | 2,500 mg/m3   | Not Available |
| lubricating oils, petroleum C20-50, hydrotreated neutral | 2,500 mg/m3   | Not Available |
| (C14-16-18)alkylphenol                                   | Not Available | Not Available |

**MATERIAL DATA**

NOTE L: The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346.

European Union (EU) List of harmonised classification and labelling hazardous substances, Table 3.1, Annex VI, Regulation (EC) No 1272/2008 (CLP) - up to the latest ATP

Exposure controls

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                    |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Appropriate engineering controls | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <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. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p> |                                    |
|                                  | Type of Contaminant:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Air Speed:                         |
|                                  | solvent, vapours, degreasing etc., evaporating from tank (in still air)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.25-0.5 m/s (50-100 f/min)        |
|                                  | aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.5-1 m/s (100-200 f/min.)         |
|                                  | direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1-2.5 m/s (200-500 f/min)          |
|                                  | grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2.5-10 m/s (500-2000 f/min.)       |
|                                  | Within each range the appropriate value depends on:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                    |
|                                  | Lower end of the range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Upper end of the range             |
|                                  | 1: Room air currents minimal or favourable to capture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1: Disturbing room air currents    |
|                                  | 2: Contaminants of low toxicity or of nuisance value only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2: Contaminants of high toxicity   |
|                                  | 3: Intermittent, low production.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3: High production, heavy use      |
|                                  | 4: Large hood or large air mass in motion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4: Small hood - local control only |
|                                  | <p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                    |

|                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Individual protection measures, such as personal protective equipment |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Eye and face protection                                               | <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. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Skin protection                                                       | See Hand protection below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Hands/feet protection                                                 | <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. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> <li>· frequency and duration of contact,</li> <li>· chemical resistance of glove material,</li> <li>· glove thickness and</li> <li>· dexterity</li> </ul> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> <li>· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>· Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.</li> <li>· Contaminated gloves should be replaced.</li> </ul> <p>As defined in ASTM F-739-96 in any application, gloves are rated as:</p> <ul style="list-style-type: none"> <li>· Excellent when breakthrough time &gt; 480 min</li> <li>· Good when breakthrough time &gt; 20 min</li> <li>· Fair when breakthrough time &lt; 20 min</li> <li>· Poor when glove material degrades</li> </ul> <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.</p> <p>It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.</p> <p>Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> <li>· Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.</li> <li>· Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential</li> </ul> <p>Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <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> |
| Body protection                                                       | See Other protection below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Other protection                                                      | <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ P.V.C apron.</li> <li>▶ Barrier cream.</li> <li>▶ Skin cleansing cream.</li> <li>▶ Eye wash unit.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## Respiratory protection

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

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

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

^ - Full-face

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

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

## SECTION 9 Physical and chemical properties

### Information on basic physical and chemical properties

|                                                     |                                         |                                                |                |
|-----------------------------------------------------|-----------------------------------------|------------------------------------------------|----------------|
| <b>Appearance</b>                                   | Brown liquid with characteristic odour. |                                                |                |
| <b>Physical state</b>                               | Liquid                                  | <b>Relative density (Water = 1)</b>            | 0.850          |
| <b>Odour</b>                                        | Not Available                           | <b>Partition coefficient n-octanol / water</b> | Not Available  |
| <b>Odour threshold</b>                              | Not Available                           | <b>Auto-ignition temperature (°C)</b>          | Not Available  |
| <b>pH (as supplied)</b>                             | Not Available                           | <b>Decomposition temperature (°C)</b>          | Not Available  |
| <b>Melting point / freezing point (°C)</b>          | -36                                     | <b>Viscosity (cSt)</b>                         | 70, 13 @100C   |
| <b>Initial boiling point and boiling range (°C)</b> | Not Available                           | <b>Molecular weight (g/mol)</b>                | Not Applicable |
| <b>Flash point (°C)</b>                             | 230                                     | <b>Taste</b>                                   | Not Available  |
| <b>Evaporation rate</b>                             | Not Available                           | <b>Explosive properties</b>                    | Not Available  |
| <b>Flammability</b>                                 | Not Applicable                          | <b>Oxidising properties</b>                    | Not Available  |
| <b>Upper Explosive Limit (%)</b>                    | Not Available                           | <b>Surface Tension (dyn/cm or mN/m)</b>        | Not Available  |
| <b>Lower Explosive Limit (%)</b>                    | Not Available                           | <b>Volatile Component (%vol)</b>               | Not Available  |
| <b>Vapour pressure (kPa)</b>                        | Not Available                           | <b>Gas group</b>                               | Not Available  |
| <b>Solubility in water</b>                          | Not Available                           | <b>pH as a solution (1%)</b>                   | Not Available  |
| <b>Vapour density (Air = 1)</b>                     | Not Available                           | <b>VOC g/L</b>                                 | Not Available  |

## SECTION 10 Stability and reactivity

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

## SECTION 11 Toxicological information

### Information on toxicological effects

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Inhaled</b>      | <p>Inhalation hazard is increased at higher temperatures.</p> <p>High inhaled concentrations of mixed hydrocarbons may produce narcosis characterised by nausea, vomiting and lightheadedness. Inhalation of aerosols may produce severe pulmonary oedema, pneumonitis and pulmonary haemorrhage. Inhalation of petroleum hydrocarbons consisting substantially of low molecular weight species (typically C2-C12) may produce irritation of mucous membranes, incoordination, giddiness, nausea, vertigo, confusion, headache, appetite loss, drowsiness, tremors and anaesthetic stupor. Massive exposures may produce central nervous system depression with sudden collapse and deep coma; fatalities have been recorded. Irritation of the brain and/or apnoeic anoxia may produce convulsions. Although recovery following overexposure is generally complete, cerebral micro-haemorrhage of focal post-inflammatory scarring may produce epileptiform seizures some months after the exposure. Pulmonary episodes may include chemical pneumonitis with oedema and haemorrhage. The lighter hydrocarbons may produce kidney and neurotoxic effects. Pulmonary irritancy increases with carbon chain length for paraffins and olefins. Alkenes produce pulmonary oedema at high concentrations. Liquid paraffins may produce anaesthesia and depressant actions leading to weakness, dizziness, slow and shallow respiration, unconsciousness, convulsions and death. C5-7 paraffins may also produce polyneuropathy. Aromatic hydrocarbons accumulate in lipid rich tissues (typically the brain, spinal cord and peripheral nerves) and may produce functional impairment manifested by nonspecific symptoms such as nausea, weakness, fatigue and vertigo; severe exposures may produce inebriation or unconsciousness. Many of the petroleum hydrocarbons are cardiac sensitisers and may cause ventricular fibrillations. Central nervous system (CNS) depression may include nonspecific discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal. Inhalation of oil droplets/ aerosols may cause discomfort and may produce chemical pneumonitis. Acute effects from inhalation of high concentrations of vapour are pulmonary irritation, including coughing, with nausea; central nervous system depression - characterised by headache and dizziness, increased reaction time, fatigue and loss of co-ordination</p> |
| <b>Ingestion</b>    | <p>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. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Skin Contact</b> | <p>The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives . Open cuts, abraded or irritated skin should not be exposed to this material. The material may accentuate any pre-existing dermatitis condition. Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## 22120, 22122, 22124, 22125, 22273 Top Tec 4110 5W-40 1L, 5L, 20L, 205L, 1000L

| Eye                                                                           | Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| Chronic                                                                       | <p>Principal route of exposure is by skin contact; lesser exposures include inhalation of fumes from hot oils, oil mists or droplets. Prolonged contact with mineral oils carries with it the risk of skin conditions such as oil folliculitis, eczematous dermatitis, pigmentation of the face (melanosis) and warts on the sole of the foot (plantar warts). With highly refined mineral oils no appreciable systemic effects appear to result through skin absorption.</p> <p>Exposure to oil mists frequently elicits respiratory conditions, such as asthma; the provoking agent is probably an additive. High oil mist concentrations may produce lipid pneumonia although clinical evidence is equivocal. In animals exposed to concentrations of 100 mg/m<sup>3</sup> oil mist, for periods of 12 to 26 months, the activity of lung and serum alkaline phosphatase enzyme was raised; 5 mg/m<sup>3</sup> oil mist did not produce this response. These enzyme changes are sensitive early indicators of lung damage. Workers exposed to vapours of mineral oil and kerosene for 5 to 35 years showed an increased prevalence of slight basal lung fibrosis.</p> <p>Many studies have linked cancers of the skin and scrotum with mineral oil exposure. Contaminants in the form of additives and the polycyclic aromatic hydrocarbons (PAHs - as in the crude base stock) are probably responsible. PAH levels are higher in aromatic process oils/used/reclaimed motor oils. Subchronic 90-day feeding studies conducted on male and female rats on highly refined white mineral oils and waxes found that higher molecular-weight hydrocarbons (microcrystalline waxes and the higher viscosity oils) were without biological effects. Paraffin waxes and low- to mid viscosity oils produced biological effects that were inversely proportional to molecular weight, viscosity and melting point: oil-type and processing did not appear to be determinants. Biological effects were more pronounced in females than in males. Effects occurred mainly in the liver and mesenteric lymph nodes and included increased organ weights, microscopic inflammatory changes, and evidence for the presence of saturated mineral hydrocarbons in affected tissues. Inflammation of the cardiac mitral valve was also observed at high doses in rats treated with paraffin waxes.</p> <p>Smith J.H., et al: Toxicologic Pathology: 24, 2, 214-230, 1996</p> <p>Repeated or prolonged exposure to mixed hydrocarbons may produce narcosis with dizziness, weakness, irritability, concentration and/or memory loss, tremor in the fingers and tongue, vertigo, olfactory disorders, constriction of visual field, paraesthesias of the extremities, weight loss and anaemia and degenerative changes in the liver and kidney. Chronic exposure by petroleum workers, to the lighter hydrocarbons, has been associated with visual disturbances, damage to the central nervous system, peripheral neuropathies (including numbness and paraesthesias), psychological and neurophysiological deficits, bone marrow toxicities (including hypoplasia possibly due to benzene) and hepatic and renal involvement. Chronic dermal exposure to petroleum hydrocarbons may result in defatting which produces localised dermatoses. Surface cracking and erosion may also increase susceptibility to infection by microorganisms. One epidemiological study of petroleum refinery workers has reported elevations in standard mortality ratios for skin cancer along with a dose-response relationship indicating an association between routine workplace exposure to petroleum or one of its constituents and skin cancer, particularly melanoma. Other studies have been unable to confirm this finding.</p> <p>Hydrocarbon solvents are liquid hydrocarbon fractions derived from petroleum processing streams, containing only carbon and hydrogen atoms, with carbon numbers ranging from approximately C5-C20 and boiling between approximately 35-370 deg C. Many of the hydrocarbon solvents have complex and variable compositions with constituents of 4 types, alkanes (normal paraffins, isoparaffins, and cycloparaffins) and aromatics (primarily alkylated one- and two-ring species). Despite the compositional complexity, most hydrocarbon solvent constituents have similar toxicological properties, and the overall toxicological hazards can be characterized in generic terms. Hydrocarbon solvents can cause chemical pneumonitis if aspirated into the lung, and those that are volatile can cause acute CNS effects and/or ocular and respiratory irritation at exposure levels exceeding occupational recommendations. Otherwise, there are few toxicologically important effects. The exceptions, n-hexane and naphthalene, have unique toxicological properties</p> <p>Animal studies:</p> <p>No deaths or treatment related signs of toxicity were observed in rats exposed to light alkylate naphtha (paraffinic hydrocarbons) at concentrations of 668, 2220 and 6646 ppm for 6 hrs/day, 5 days/wk for 13 weeks. Increased liver weights and kidney toxicity (male rats) was observed in high dose animals. Exposure to pregnant rats at concentrations of 137, 3425 and 6850 ppm did not adversely affect reproduction or cause maternal or foetal toxicity. Lifetime skin painting studies in mice with similar naphthas have shown weak or no carcinogenic activity following prolonged and repeated exposure. Similar naphthas/distillates, when tested at nonirritating dose levels, did not show any significant carcinogenic activity indicating that this tumorigenic response is likely related to chronic irritation and not to dose. The mutagenic potential of naphthas has been reported to be largely negative in a variety of mutagenicity tests. The exact relationship between these results and human health is not known. Some components of this product have been shown to produce a species specific, sex hormonal dependent kidney lesion in male rats from repeated oral or inhalation exposure. Subsequent research has shown that the kidney damage develops via the formation of a alpha-2u-globulin, a mechanism unique to the male rat. Humans do not form alpha-2u-globulin, therefore, the kidney effects resulting from this mechanism are not relevant in human.</p> <p>Repeated application of mildly hydrotreated oils (principally paraffinic), to mouse skin, induced skin tumours; no tumours were induced with severely hydrotreated oils.</p> |          |            |                                                  |                                                                 |                                                  |                                                                  |                                             |                                                                  |
| 22120, 22122, 22124, 22125, 22273 Top Tec 4110 5W-40 1L, 5L, 20L, 205L, 1000L | <table> <tr> <th data-bbox="370 1435 938 1496">TOXICITY</th><th data-bbox="938 1435 1495 1496">IRRITATION</th></tr> <tr> <td data-bbox="370 1496 938 1541">Not Available</td><td data-bbox="938 1496 1495 1541">Not Available</td></tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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| paraffinic distillate, heavy, hydrotreated (severe)                           | <table> <tr> <th data-bbox="370 1541 938 1585">TOXICITY</th><th data-bbox="938 1541 1495 1585">IRRITATION</th></tr> <tr> <td data-bbox="370 1585 938 1630">Dermal (rabbit) LD50: &gt;2000 mg/kg<sup>[2]</sup></td><td data-bbox="938 1585 1495 1630">Eye: no adverse effect observed (not irritating)<sup>[1]</sup></td></tr> <tr> <td data-bbox="370 1630 938 1675">Inhalation(Rat) LC50: 2.18 mg/l4h<sup>[2]</sup></td><td data-bbox="938 1630 1495 1675">Skin: no adverse effect observed (not irritating)<sup>[1]</sup></td></tr> <tr> <td data-bbox="370 1675 938 1704">Oral (Rat) LD50: &gt;5000 mg/kg<sup>[2]</sup></td><td data-bbox="938 1675 1495 1704"></td></tr> </table>                                                                                                                                                                                                                                                                  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| Inhalation(Rat) LC50: 2.18 mg/l4h <sup>[2]</sup>                              | Skin: no adverse effect observed (not irritating) <sup>[1]</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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| Oral (Rat) LD50: >5000 mg/kg <sup>[2]</sup>                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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| lubricating oils, petroleum C15-30 hydrotreated neutral                       | <table> <tr> <th data-bbox="370 1704 938 1749">TOXICITY</th><th data-bbox="938 1704 1495 1749">IRRITATION</th></tr> <tr> <td data-bbox="370 1749 938 1794">Dermal (rabbit) LD50: &gt;2000 mg/kg<sup>[2]</sup></td><td data-bbox="938 1749 1495 1794">Eye: no adverse effect observed (not irritating)<sup>[1]</sup></td></tr> <tr> <td data-bbox="370 1794 938 1839">Inhalation(Rat) LC50: 2.18 mg/l4h<sup>[2]</sup></td><td data-bbox="938 1794 1495 1839">Skin: adverse effect observed (irritating)<sup>[1]</sup></td></tr> <tr> <td data-bbox="370 1839 938 1868">Oral (Rat) LD50: &gt;5000 mg/kg<sup>[2]</sup></td><td data-bbox="938 1839 1495 1868">Skin: no adverse effect observed (not irritating)<sup>[1]</sup></td></tr> </table>                                                                                                                                                                                                          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| Inhalation(Rat) LC50: 2.18 mg/l4h <sup>[2]</sup>                              | Skin: adverse effect observed (irritating) <sup>[1]</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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| Oral (Rat) LD50: >5000 mg/kg <sup>[2]</sup>                                   | Skin: no adverse effect observed (not irritating) <sup>[1]</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       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| lubricating oils, petroleum C20-50, hydrotreated neutral                      | <table> <tr> <th data-bbox="370 1868 938 1912">TOXICITY</th><th data-bbox="938 1868 1495 1912">IRRITATION</th></tr> <tr> <td data-bbox="370 1912 938 1957">Dermal (rabbit) LD50: &gt;2000 mg/kg<sup>[2]</sup></td><td data-bbox="938 1912 1495 1957">Eye: no adverse effect observed (not irritating)<sup>[1]</sup></td></tr> <tr> <td data-bbox="370 1957 938 2002">Inhalation(Rat) LC50: 2.18 mg/l4h<sup>[2]</sup></td><td data-bbox="938 1957 1495 2002">Skin: no adverse effect observed (not irritating)<sup>[1]</sup></td></tr> <tr> <td data-bbox="370 2002 938 2031">Oral (Rat) LD50: &gt;5000 mg/kg<sup>[2]</sup></td><td data-bbox="938 2002 1495 2031"></td></tr> </table>                                                                                                                                                                                                                                                                  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| Oral (Rat) LD50: >5000 mg/kg <sup>[2]</sup>                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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| (C14-16-18)alkylphenol                                                        | <table> <tr> <th data-bbox="370 2031 938 2076">TOXICITY</th><th data-bbox="938 2031 1495 2076">IRRITATION</th></tr> <tr> <td data-bbox="370 2076 938 2121">dermal (rat) LD50: &gt;2000 mg/kg<sup>[1]</sup></td><td data-bbox="938 2076 1495 2121">Not Available</td></tr> <tr> <td data-bbox="370 2121 938 2159">Oral (Rat) LD50: &gt;2000 mg/kg<sup>[1]</sup></td><td data-bbox="938 2121 1495 2159"></td></tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | TOXICITY | IRRITATION | dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>    | Not Available                                                   | Oral (Rat) LD50: >2000 mg/kg <sup>[1]</sup>      |                                                                  |                                             |                                                                  |
| TOXICITY                                                                      | IRRITATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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| dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>                                 | Not Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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| Oral (Rat) LD50: >2000 mg/kg <sup>[1]</sup>                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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| Legend:                                                                                                                                                                                 | 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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| <b>PARAFFINIC DISTILLATE, HEAVY, HYDROTREATED (SEVERE)</b>                                                                                                                              | The substance is classified by IARC as Group 3:<br><b>NOT</b> classifiable as to its carcinogenicity to humans.<br>Evidence of carcinogenicity may be inadequate or limited in animal testing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| <b>(C14-16-18)ALKYLPHENOL</b>                                                                                                                                                           | The following information refers to contact allergens as a group and may not be specific to this product.<br>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. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.<br>No significant acute toxicological data identified in literature search.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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| <b>PARAFFINIC DISTILLATE, HEAVY, HYDROTREATED (SEVERE) &amp; LUBRICATING OILS, PETROLEUM C15-30 HYDROTREATED NEUTRAL &amp; LUBRICATING OILS, PETROLEUM C20-50, HYDROTREATED NEUTRAL</b> | <p>The materials included in the Lubricating Base Oils category are related from both process and physical-chemical perspectives;<br/>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 <i>residual base oils</i> 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>The degree of refining influences the carcinogenic potential of the oils. Whereas mild acid / earth refining processes are inadequate to substantially reduce the carcinogenic potential of lubricant base oils, hydrotreatment and / or solvent extraction methods can yield oils with no carcinogenic potential.</p> <p>Unrefined and mildly refined distillate base oils contain the highest levels of undesirable components, have the largest variation of hydrocarbon molecules and have shown the highest potential carcinogenic and mutagenic activities. Highly and severely refined distillate base oils are produced from unrefined and mildly refined oils by removing or transforming undesirable components. In comparison to unrefined and mildly refined base oils, the highly and severely refined distillate base oils have a smaller range of hydrocarbon molecules and have demonstrated very low mammalian toxicity. Mutagenicity and carcinogenicity testing of residual oils has been negative, 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. Numerous tests have shown that a lubricating base oil is mutagenic and carcinogenic potential correlates with its 3-7 ring polycyclic aromatic compound (PAC) content, and the level of DMSO extractables (e.g. IP346 assay), both characteristics that are directly related to the degree/conditions of processing</p> <p>Skin irritating is not significant (CONCAWE) based on 14 tests on 10 CASs from the OLBO class (Other Lubricant Base Oils). Each study lasted for 24 hours, a period of time 6 times longer than the duration recommended by the OECD method).</p> <p>Eye irritation is not significant according to experimental data (CONCAWE studies) based on 9 "in vivo" tests on 7 CASs from the OLBO class(Other Lubricant Base Oils).</p> <p>Sensitisation: The substance does not cause the sensitization of the respiratory tract or of the skin. (CONCAWE studies based on 14 tests on 11 CASs from the OLBO class(Other Lubricant Base Oils))</p> <p>Germ cell mutagenicity: The tests performed within the "in vivo" studies regarding gene mutation at mice micronuclei indicated negative results (CONCAWE studies. AMES tests had negative results in 7 studies performed on 4 CASs from the OLBO class(Other Lubricant Base Oils)).</p> <p>Reproduction toxicity: Reproduction / development toxicity monitoring according to OECD 421 or 422 methods. CONCAWE tests gave negative results in oral gavage studies. Pre-birth studies regarding toxicity in the unborn foetus development process showed a maternal LOAEL (Lowest Observed Adverse Effect Level) of 125 mg/kg body/day, based on dermal irritation and a NOAEL (No Observable Adverse Effect Level) of 2000 mg/kg body/day, which shows that the substance is not toxic for reproduction.</p> <p>STOT (toxicity on specific target organs) – repeated exposure: Studies with short term repeated doses (28-day test) on rabbit skin indicated the NOAEL value of 1000 mg/kg. NOAEL for inhalation, local effects &gt; 280 mg/m3 and for systemic effects NOAEL &gt; 980 mg/m3.</p> <p>Sub-chronic toxicity</p> <p>90-day study Dermal: NOAEL &gt; 2000 mg/kg (CONCAWE studies).</p> <p>Repeat dose toxicity:</p> <p>Oral</p> <p>NOAEL for heavy paraffinic distillate aromatic extract could not be identified and is less than 125 mg/kg/day when administered orally.</p> <p>Inhalation</p> <p>The NOAEL for lung changes associated with oil deposition in the lungs was 220 mg/m3. As no systemic toxicity was observed, the overall NOAEL for systemic effects was &gt; 980 mg/m3.</p> <p>Dermal</p> <p>In a 90 day subchronic dermal study, the administration of Light paraffinic distillate solvent extract had an adverse effect on survivability, body weights, organ weights (particularly the liver and thymus), and variety of haematology and serum chemistry parameters in exposed animals. Histopathological changes which were treatment-related were most prominent in the adrenals, bone marrow, kidneys, liver, lymph nodes, skin, stomach, and thymus. Based on the results of this study, the NOAEL for the test material is less than 30 mg/kg/day.</p> <p>Toxicity to reproduction:</p> <p>Mineral oil (a white mineral oil) caused no reproductive or developmental toxicity with 1 mL/kg/day (i.e., 1000 mg/kg/day) in an OECD 421 guideline study, but did cause mild to moderate skin irritation. Therefore, the reproductive/developmental NOAEL for this study is =1000 mg/kg/day and no LOAEL was determined.</p> <p>Developmental toxicity, teratogenicity:</p> <p>Heavy paraffinic distillate furfural extract produced maternal, reproductive and foetal toxicity. Maternal toxicity was exhibited as vaginal discharge (dose-related), body weight decrease, reduction in thymus weight and increase in liver weight (125 mg/kg/day and higher) and aberrant haematology and serum chemistry (125 and/or 500 mg/kg/day). Evidence of potential reproductive effects was shown by an increased number of dams with resorptions and intrauterine death. Distillate aromatic extract (DAE) was developmentally toxic regardless of exposure duration as indicated by increased resorptions and decreased foetal body weights. Furthermore, when exposures were increased to 1000 mg/kg/day and given only during gestation days 10 through 12, cleft palate and ossification delays were observed. Cleft palate was considered to indicate a potential teratogenic effect of DAE.</p> <p>The following Oil Industry Note (OIN) has been applied: OIN 8 - The classifications as a reproductive toxicant category 2; H361d (Suspected of damaging the unborn child) and specific target organ toxicant category 1; H372 (Causes damage to organs through prolonged or repeated exposure) need not apply if the substance is not classified as carcinogenic</p> <p>Toxicokinetics of lubricant base oils has been examined in rodents. Absorption of other lubricant base oils across the small intestine is related to carbon chain length; hydrocarbons with smaller chain length are more readily absorbed than hydrocarbons with a longer chain length. The majority of an oral dose of mineral hydrocarbon is not absorbed and is excreted unchanged in the faeces. Distribution of mineral hydrocarbons following absorption has been observed in liver, fat, kidney, brain and spleen. Excretion of absorbed mineral hydrocarbons occurs via the faeces and urine. Based on the pharmacokinetic parameters and disposition profiles, the data indicate inherent strain differences in the total systemic exposure (~4 fold greater systemic dose in F344 vs SD rats), rate of metabolism, and hepatic and lymph node retention of C26H52, which may be associated with the different strain sensitivities to the formation of liver granulomas and MLN histiocytosis.</p> <p>Highly and Severely Refined Distillate Base Oils</p> <p><b>Acute toxicity:</b> Multiple studies of the acute toxicity of highly &amp; severely refined base oils have been reported. Irrespective of the crude source or the method or extent of processing, the oral LD50s have been observed to be &gt;5 g/kg (bw) and the dermal LD50s have ranged from &gt;2 to &gt;5g/kg</p> |

## 22120, 22122, 22124, 22125, 22273 Top Tec 4110 5W-40 1L, 5L, 20L, 205L, 1000L

(bw). The LC50 for inhalation toxicity ranged from 2.18 mg/l to > 4 mg/l.

When tested for skin and eye irritation, the materials have been reported as "non-irritating" to "moderately irritating"

Testing in guinea pigs for sensitization has been negative

**Repeat dose toxicity:** Several studies have been conducted with these oils. The weight of evidence from all available data on highly & severely refined base oils support the presumption that a distillate base oil's toxicity is inversely related to the degree of processing it receives. Adverse effects have been reported with even the most severely refined white oils - these appear to depend on animal species and/or the peculiarities of the study.

- The granulomatous lesions induced by the oral administration of white oils are essentially foreign body responses. The lesions occur only in rats, of which the Fischer 344 strain is particularly sensitive,
- The testicular effects seen in rabbits after dermal administration of a highly to severely refined base oil were unique to a single study and may have been related to stress induced by skin irritation, and
- The accumulation of foamy macrophages in the alveolar spaces of rats exposed repeatedly via inhalation to high levels of highly to severely refined base oils is not unique to these oils, but would be seen after exposure to many water insoluble materials.

**Reproductive and developmental toxicity:** A highly refined base oil was used as the vehicle control in a one-generation reproduction study.

The study was conducted according to the OECD Test Guideline 421. There was no effect on fertility and mating indices in either males or females. At necropsy, there were no consistent findings and organ weights and histopathology were considered normal by the study's authors.

A single generation study in which a white mineral oil (a food/ drug grade severely refined base oil) was used as a vehicle control is reported.

Two separate groups of pregnant rats were administered 5 ml/kg (bw)/day of the base oil via gavage, on days 6 through 19 of gestation. In one of the two base oil dose groups, three malformed fetuses were found among three litters. The study authors considered these malformations to be minor and within the normal ranges for the strain of rat.

**Genotoxicity:**

*In vitro* (mutagenicity): Several studies have reported the results of testing different base oils for mutagenicity using a modified Ames assay. Base oils with no or low concentrations of 3-7 ring PACs had low mutagenicity indices.

*In vivo* (chromosomal aberrations): A total of seven base stocks were tested in male and female Sprague-Dawley rats using a bone marrow cytogenetics assay. The test materials were administered via gavage at dose levels ranging from 500 to 5000 mg/kg (bw). Dosing occurred for either a single day or for five consecutive days. None of the base oils produced a significant increase in aberrant cells.

**Carcinogenicity:** Highly & severely refined base oils are not carcinogens, when given either orally or dermally.

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

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

## SECTION 12 Ecological information

## Toxicity

| 22120, 22122, 22124, 22125, 22273 Top Tec 4110 5W-40 1L, 5L, 20L, 205L, 1000L | Endpoint                                                                                                                                                                                                                                                                                                                 | Test Duration (hr) | Species                       | Value         | Source        |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------|---------------|---------------|
|                                                                               | Not Available                                                                                                                                                                                                                                                                                                            | Not Available      | Not Available                 | Not Available | Not Available |
| paraffinic distillate, heavy, hydrotreated (severe)                           | Endpoint                                                                                                                                                                                                                                                                                                                 | Test Duration (hr) | Species                       | Value         | Source        |
|                                                                               | ErC50                                                                                                                                                                                                                                                                                                                    | 72h                | Algae or other aquatic plants | >1000mg/l     | 1             |
|                                                                               | NOEC(ECx)                                                                                                                                                                                                                                                                                                                | 504h               | Crustacea                     | >1mg/l        | 1             |
|                                                                               | EC50                                                                                                                                                                                                                                                                                                                     | 96h                | Algae or other aquatic plants | >1000mg/l     | 1             |
|                                                                               | EC50                                                                                                                                                                                                                                                                                                                     | 48h                | Crustacea                     | >1000mg/l     | 1             |
| lubricating oils, petroleum C15-30 hydrotreated neutral                       | Endpoint                                                                                                                                                                                                                                                                                                                 | Test Duration (hr) | Species                       | Value         | Source        |
|                                                                               | NOEC(ECx)                                                                                                                                                                                                                                                                                                                | 504h               | Crustacea                     | >1mg/l        | 1             |
|                                                                               | EC50                                                                                                                                                                                                                                                                                                                     | 48h                | Crustacea                     | >1000mg/l     | 1             |
| lubricating oils, petroleum C20-50, hydrotreated neutral                      | Endpoint                                                                                                                                                                                                                                                                                                                 | Test Duration (hr) | Species                       | Value         | Source        |
|                                                                               | NOEC(ECx)                                                                                                                                                                                                                                                                                                                | 504h               | Crustacea                     | >1mg/l        | 1             |
|                                                                               | EC50                                                                                                                                                                                                                                                                                                                     | 48h                | Crustacea                     | >1000mg/l     | 1             |
| (C14-16-18)alkylphenol                                                        | Endpoint                                                                                                                                                                                                                                                                                                                 | Test Duration (hr) | Species                       | Value         | Source        |
|                                                                               | EC50                                                                                                                                                                                                                                                                                                                     | 48h                | Crustacea                     | >100mg/l      | 2             |
|                                                                               | EC50(ECx)                                                                                                                                                                                                                                                                                                                | 24h                | Crustacea                     | >100mg/l      | 2             |
| <b>Legend:</b>                                                                | Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data |                    |                               |               |               |

DO NOT discharge into sewer or waterways.

## Persistence and degradability

| Ingredient | Persistence: Water/Soil               | Persistence: Air                      |
|------------|---------------------------------------|---------------------------------------|
|            | No Data available for all ingredients | No Data available for all ingredients |

## Bioaccumulative potential

Continued...

| Ingredient | Bioaccumulation                       |
|------------|---------------------------------------|
|            | No Data available for all ingredients |

Mobility in soil

| Ingredient | Mobility                              |
|------------|---------------------------------------|
|            | No Data available for all ingredients |

SECTION 13 Disposal considerations

Waste treatment methods

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product / Packaging disposal | <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. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</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> |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

SECTION 14 Transport information

Labels Required

|                  |    |
|------------------|----|
| Marine Pollutant | NO |
|------------------|----|

Land transport (TDG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

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

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

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

Not Applicable

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

| Product name                                             | Group         |
|----------------------------------------------------------|---------------|
| paraffinic distillate, heavy, hydrotreated (severe)      | Not Available |
| lubricating oils, petroleum C15-30 hydrotreated neutral  | Not Available |
| lubricating oils, petroleum C20-50, hydrotreated neutral | Not Available |
| (C14-16-18)alkylphenol                                   | Not Available |

Transport in bulk in accordance with the IGC Code

| Product name                                             | Ship Type     |
|----------------------------------------------------------|---------------|
| paraffinic distillate, heavy, hydrotreated (severe)      | Not Available |
| lubricating oils, petroleum C15-30 hydrotreated neutral  | Not Available |
| lubricating oils, petroleum C20-50, hydrotreated neutral | Not Available |
| (C14-16-18)alkylphenol                                   | Not Available |

SECTION 15 Regulatory information

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

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

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

Canada Categorization decisions for all DSL substances

Canada Domestic Substances List (DSL)

Chemical Footprint Project - Chemicals of High Concern List

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

**lubricating oils, petroleum C15-30 hydrotreated neutral is found on the following regulatory lists**

Canada Categorization decisions for all DSL substances

Canada Domestic Substances List (DSL)

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

Chemical Footprint Project - Chemicals of High Concern List

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

**lubricating oils, petroleum C20-50, hydrotreated neutral is found on the following regulatory lists**

Canada Categorization decisions for all DSL substances

Canada Domestic Substances List (DSL)

Chemical Footprint Project - Chemicals of High Concern List

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

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

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

**National Inventory Status**

| National Inventory                              | Status                                                                                                                                                                                              |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Australia - AIIC / Australia Non-Industrial Use | No ((C14-16-18)alkylphenol)                                                                                                                                                                         |
| Canada - DSL                                    | No ((C14-16-18)alkylphenol)                                                                                                                                                                         |
| Canada - NDSL                                   | No (paraffinic distillate, heavy, hydrotreated (severe); lubricating oils, petroleum C15-30 hydrotreated neutral; lubricating oils, petroleum C20-50, hydrotreated neutral; (C14-16-18)alkylphenol) |
| China - IECSC                                   | No ((C14-16-18)alkylphenol)                                                                                                                                                                         |
| Europe - EINEC / ELINCS / NLP                   | No ((C14-16-18)alkylphenol)                                                                                                                                                                         |
| Japan - ENCS                                    | Yes                                                                                                                                                                                                 |
| Korea - KECI                                    | No ((C14-16-18)alkylphenol)                                                                                                                                                                         |
| New Zealand - NZIoC                             | No ((C14-16-18)alkylphenol)                                                                                                                                                                         |
| Philippines - PICCS                             | No ((C14-16-18)alkylphenol)                                                                                                                                                                         |
| USA - TSCA                                      | No ((C14-16-18)alkylphenol)                                                                                                                                                                         |
| Taiwan - TCSI                                   | No ((C14-16-18)alkylphenol)                                                                                                                                                                         |
| Mexico - INSQ                                   | No (lubricating oils, petroleum C20-50, hydrotreated neutral; (C14-16-18)alkylphenol)                                                                                                               |
| Vietnam - NCI                                   | No ((C14-16-18)alkylphenol)                                                                                                                                                                         |
| Russia - FBEPH                                  | No (lubricating oils, petroleum C15-30 hydrotreated neutral; lubricating oils, petroleum C20-50, hydrotreated neutral; (C14-16-18)alkylphenol)                                                      |
| <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. These ingredients may be exempt or will require registration.   |

**SECTION 16 Other information**

|                      |            |
|----------------------|------------|
| <b>Revision Date</b> | 23/12/2022 |
| <b>Initial Date</b>  | 21/05/2020 |

**SDS Version Summary**

| Version | Date of Update | Sections Updated                                  |
|---------|----------------|---------------------------------------------------|
| 3.1     | 23/12/2022     | Classification review due to GHS Revision change. |

**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  
 ES: Exposure Standard  
 OSF: Odour Safety Factor  
 NOAEL: No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value  
 LOD: Limit Of Detection  
 OTV: Odour Threshold Value  
 BCF: BioConcentration Factors  
 BEI: Biological Exposure Index  
 AIIC: Australian Inventory of Industrial Chemicals

DSL: Domestic Substances List  
NDSL: Non-Domestic Substances List  
IECSC: Inventory of Existing Chemical Substance in China  
EINECS: European INventory of Existing Commercial chemical Substances  
ELINCS: European List of Notified Chemical Substances  
NLP: No-Longer Polymers  
ENCS: Existing and New Chemical Substances Inventory  
KECI: Korea Existing Chemicals Inventory  
NZIoC: New Zealand Inventory of Chemicals  
PICCS: Philippine Inventory of Chemicals and Chemical Substances  
TSCA: Toxic Substances Control Act  
TCSI: Taiwan Chemical Substance Inventory  
INSQ: Inventario Nacional de Sustancias Químicas  
NCI: National Chemical Inventory  
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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