

2331 LEICHTLAUF HIGH TECH 5W-40, 1L

Liqui Moly GmbH

Chemwatch: 48-0462

Version No: 3.1.1.1

Safety Data Sheet

Chemwatch Hazard Alert Code: 1

Issue Date: 15/10/2015

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Initial Date: Not Available

S.GHS.CAN.EN

SECTION 1 IDENTIFICATION

Product Identifier

| | |
|-------------------------------|-------------------------------------|
| Product name | 2331 LEICHTLAUF HIGH TECH 5W-40, 1L |
| Synonyms | Item No. 2331 |
| Other means of identification | Not Available |

Recommended use of the chemical and restrictions on use

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

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 | Not Available |
| Email | Not Available |

Emergency phone number

| | |
|-----------------------------------|---------------|
| Association / Organisation | Not Available |
| Emergency telephone numbers | Not Available |
| Other emergency telephone numbers | Not Available |

SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

CHEMWATCH HAZARD RATINGS

| | Min | Max |
|--------------|-----|-----|
| Flammability | 1 | 1 |
| Toxicity | 1 | 1 |
| Body Contact | 1 | 1 |
| Reactivity | 1 | 1 |
| Chronic | 1 | 1 |

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

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

| | |
|--------------------|----------------|
| GHS Classification | Not Applicable |
|--------------------|----------------|

Label elements

| | |
|--------------------|----------------|
| GHS label elements | Not Applicable |
|--------------------|----------------|

| | |
|-------------|----------------|
| SIGNAL WORD | NOT APPLICABLE |
|-------------|----------------|

Hazard statement(s)

Not Applicable

Hazard(s) not otherwise specified

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

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Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Not Applicable

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**Substances**

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|-------------|-----------|------------------------------------------------------------------|
| 64742-54-7. | 30-60 | <u>paraffinic distillate, heavy, hydrotreated (severe)</u> |
| 90480-91-4 | 1-5 | <u>calcium alkyl phenate sulfide</u> |
| 147880-09-9 | 1-<5 | <u>polyolefin polyamine succinimide</u> |
| 68784-31-6 | 1-<2.5 | <u>zinc bis(sec-butyl and 1,3-dimethylbutyl) dithiophosphate</u> |

SECTION 4 FIRST-AID MEASURES**Description of first aid measures**

| | |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye Contact | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> Wash out immediately with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| Skin Contact | <p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. |
| Inhalation | <ul style="list-style-type: none"> If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital, or doctor. |
| Ingestion | <ul style="list-style-type: none"> If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice. Avoid giving milk or oils. Avoid giving alcohol. If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus. |

Indication of any immediate medical attention and special treatment needed

- 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.

Special hazards arising from the substrate or mixture

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

Special protective equipment and precautions for fire-fighters

| | |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fire Fighting | <ul style="list-style-type: none"> Alert Fire Brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. Use water delivered as a fine spray to control fire and cool adjacent area. |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> Combustible. Slight fire hazard when exposed to heat or flame. Heating may cause expansion or decomposition leading to violent rupture of containers. On combustion, may emit toxic fumes of carbon monoxide (CO). |

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Combustion products include; carbon dioxide (CO₂) sulfur oxides (SO_x) other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes. **CARE:** Water in contact with hot liquid may cause foaming and a steam explosion with wide scattering of hot oil and possible severe burns. Foaming may cause overflow of containers and may result in possible fire.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

| | |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Minor Spills | Slippery when spilt. <ul style="list-style-type: none"> Remove all ignition sources. Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. |
| Major Spills | Slippery when spilt. Moderate hazard. <ul style="list-style-type: none"> Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves. |

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

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

| | |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safe handling | <ul style="list-style-type: none"> 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 (≤ 1 m/sec until fill pipe submerged to twice its diameter, then ≤ 7 m/sec). Avoid splash filling. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. |
| Other information | <ul style="list-style-type: none"> Store in original containers. Keep containers securely sealed. No smoking, naked lights or ignition sources. Store in a cool, dry, well-ventilated area. |

Conditions for safe storage, including any incompatibilities

| | |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Suitable container | <ul style="list-style-type: none"> Metal can or drum Packaging as recommended by manufacturer. Check all containers are clearly labelled and free from leaks. |
| Storage incompatibility | CARE: Water in contact with heated material may cause foaming or a steam explosion with possible severe burns from wide scattering of hot material. Resultant overflow of containers may result in fire. <ul style="list-style-type: none"> Avoid reaction with oxidising agents |

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------------------|---------------|--------------------------------------------------------------------|
| Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances | paraffinic distillate, heavy, hydrotreated (severe) | Oil mist, mineral | 5 mg/m ³ / --- ppm | 10 mg/m ³ / --- ppm | Not Available | Not Available |
| Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits | paraffinic distillate, heavy, hydrotreated (severe) | Oil mist, mineral | 5 mg/m ³ | 10 mg/m ³ | Not Available | Not Available |
| Canada - Saskatchewan Occupational Health and Safety Regulations - Designated Chemical Substances | paraffinic distillate, heavy, hydrotreated (severe) | Mineral oils, untreated and mildly treated | Not Available | Not Available | Not Available | Not Available |
| Canada - Northwest Territories Occupational Exposure Limits (English) | paraffinic distillate, heavy, hydrotreated (severe) | Oil mist, mineral | 5 mg/m ³ | 10 mg/m ³ | Not Available | Not Available |
| Canada - Nova Scotia Occupational Exposure Limits | paraffinic distillate, heavy, hydrotreated (severe) | Oil mist - mineral | 5 mg/m ³ | 10 mg/m ³ | Not Available | TLV Basis: lung. As sampled by method that does not collect vapor. |
| Canada - Prince Edward Island Occupational Exposure Limits | paraffinic distillate, heavy, hydrotreated (severe) | Mineral oil, excluding metal working fluids - Pure, highly and severely refined / Mineral oil, excluding metal working fluids - Poorly and mildly refined | 5 mg/m ³ | Not Available | Not Available | TLV® Basis: URT irr |

Continued...

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| | | | | | | |
|---------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------|---------------------|---------------|---------------|---------------|
| Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English) | paraffinic distillate, heavy, hydrotreated (severe) | Mineral oil (mist) / Oil mist, mineral | 5 mg/m3 | 10 mg/m3 | Not Available | Not Available |
| Canada - Alberta Occupational Exposure Limits | paraffinic distillate, heavy, hydrotreated (severe) | Oil mist, mineral | 5 mg/m3 | 10 mg/m3 | Not Available | Not Available |
| Canada - British Columbia Occupational Exposure Limits | paraffinic distillate, heavy, hydrotreated (severe) | Oil mist - mineral, mildly refined / Oil mist - mineral, severely refined | 0.2 mg/m3 / 1 mg/m3 | Not Available | Not Available | Not Available |

EMERGENCY LIMITS

| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|-----------------------------------------------------|-----------------------------------------------------------|----------|-----------|------------|
| paraffinic distillate, heavy, hydrotreated (severe) | Hydrotreated (mild & severe) heavy paraffinic distillates | 45 mg/m3 | 500 mg/m3 | 3000 mg/m3 |

| Ingredient | Original IDLH | Revised IDLH |
|-----------------------------------------------------------|---------------|---------------|
| paraffinic distillate, heavy, hydrotreated (severe) | Not Available | Not Available |
| calcium alkyl phenate sulfide | Not Available | Not Available |
| polyolefin polyamine succinimide | Not Available | Not Available |
| zinc bis(sec-butyl and 1,3-dimethylbutyl) dithiophosphate | Not Available | Not Available |

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.</p> |
| Personal protection |  |
| Eye and face protection | <ul style="list-style-type: none"> ▶ Safety glasses with side shields. ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| Skin protection | See Hand protection below |
| Hands/feet protection | <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>Suitability and durability of glove type is dependent on usage.</p> <ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber |
| Body protection | See Other protection below |
| Other protection | <ul style="list-style-type: none"> ▶ Overalls. ▶ P.V.C. apron. ▶ Barrier cream. |
| Thermal hazards | Not Available |

Respiratory protection

Not Available

Not Available

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | | | |
|-------------------------|-------------------------------------------------------------------------|------------------------------------------------|---------------|
| Appearance | Brown colour liquid with characteristic odour; not miscible with water. | | |
| Physical state | #00Liquid | Relative density (Water = 1) | 0.855 |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Available |
| pH (as supplied) | Not Applicable | Decomposition temperature | Not Available |

Continued...

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| | | | |
|----------------------------------------------|----------------|----------------------------------|----------------|
| Melting point / freezing point (°C) | -33 | Viscosity (cSt) | 90 |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol) | Not Applicable |
| Flash point (°C) | 236 | Taste | Not Available |
| Evaporation rate | Not Available | Explosive properties | Not Available |
| Flammability | Not Applicable | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | Not Available | Surface Tension (dyn/cm or mN/m) | Not Available |
| Lower Explosive Limit (%) | Not Available | Volatile Component (%vol) | Not Available |
| Vapour pressure (kPa) | Not Available | Gas group | Not Available |
| Solubility in water (g/L) | #01immiscible | pH as a solution (1%) | Not Available |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |

SECTION 10 STABILITY AND REACTIVITY

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

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

| | |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhaled | <p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.</p> <p>There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.</p> <p>Inhalation hazard is increased at higher temperatures.</p> <p>Inhaling high concentrations of mixed hydrocarbons can cause narcosis, with nausea, vomiting and lightheadedness. Low molecular weight (C2-C12) hydrocarbons can irritate mucous membranes and cause incoordination, giddiness, nausea, vertigo, confusion, headache, appetite loss, drowsiness, tremors and stupor.</p> <p>Central nervous system (CNS) depression may include general 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.</p> <p>Inhalation of oil droplets or aerosols may cause discomfort and may produce chemical inflammation of the lungs.</p> |
| Ingestion | <p>Accidental ingestion of the material may be damaging to the health of the individual.</p> <p>Ingestion of petroleum hydrocarbons can irritate the pharynx, oesophagus, stomach and small intestine, and cause swellings and ulcers of the mucous.</p> <p>Symptoms include a burning mouth and throat; larger amounts can cause nausea and vomiting, narcosis, weakness, dizziness, slow and shallow breathing, abdominal swelling, unconsciousness and convulsions.</p> |
| Skin Contact | <p>Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>The material may accentuate any pre-existing dermatitis condition</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> |
| Eye | <p>There is some evidence to suggest that this material can cause eye irritation and damage in some persons.</p> <p>Direct eye contact with petroleum hydrocarbons can be painful, and the corneal epithelium may be temporarily damaged. Aromatic species can cause irritation and excessive tear secretion.</p> |
| Chronic | <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>Constant or exposure over long periods to mixed hydrocarbons may produce stupor with dizziness, weakness and visual disturbance, weight loss and anaemia, and reduced liver and kidney function. Skin exposure may result in drying and cracking and redness of the skin.</p> <p>Oil may contact the skin or be inhaled. Extended exposure can lead to eczema, inflammation of hair follicles, pigmentation of the face and warts on the soles of the feet.</p> |

| | | |
|-----------------------------------------------------|----------------------------------------------------|---------------|
| 2331 LEICHTLAUF HIGH TECH 5W-40, 1L | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| paraffinic distillate, heavy, hydrotreated (severe) | TOXICITY | IRRITATION |
| | Dermal (rabbit) LD50: >2000 mg/kg ^[1] | Not Available |
| | Inhalation (rat) LC50: >3.9 mg/l4 h ^[1] | |
| | Inhalation (rat) LC50: >4.7 mg/l4 h ^[1] | |
| | Inhalation (rat) LC50: >5 mg/l4 h ^[1] | |
| | Inhalation (rat) LC50: >5.2 mg/l4 h ^[1] | |
| | Inhalation (rat) LC50: >5.3 mg/l4 h ^[1] | |

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| | | |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| | Inhalation (rat) LC50: 10.5 mg/l4 h ^[1] | |
| | Inhalation (rat) LC50: 5.7 mg/l4 h ^[1] | |
| | Inhalation (rat) LC50: 9.6 mg/l4 h ^[1] | |
| | Oral (rat) LD50: >2000 mg/kg ^[1] | |
| calcium alkyl phenate sulfide | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| polyolefin polyamine succinimide | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| zinc bis(sec-butyl and 1,3-dimethylbutyl) dithiophosphate | TOXICITY | IRRITATION |
| | Dermal (rabbit) LD50: >5000 mg/kg ^[1] | Not Available |
| | Oral (rat) LD50: 2750 mg/kg ^[1] | |
| Legend: | 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances | |

| | | | |
|-----------------------------------|---|--------------------------|---|
| 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 available but does not fill the criteria for classification
✓ – Data required to make classification available
☐ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

| Ingredient | Endpoint | Test Duration | Species | Value | Source |
|-----------------------------------------------------------|----------|---------------|-------------------------------|------------|--------|
| paraffinic distillate, heavy, hydrotreated (severe) | EC50 | 48 | Crustacea | >10000mg/L | 1 |
| paraffinic distillate, heavy, hydrotreated (severe) | EC50 | 96 | Algae or other aquatic plants | >10000mg/L | 1 |
| zinc bis(sec-butyl and 1,3-dimethylbutyl) dithiophosphate | LC50 | 96 | Fish | 460mg/L | 2 |

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

| 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"> ▶ Reduction ▶ Reuse ▶ Recycling ▶ Disposal (if all else fails) <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</p> <ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Authority for disposal.
- Bury or incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 TRANSPORT INFORMATION

Labels Required

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

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

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

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

SECTION 15 REGULATORY INFORMATION

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

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

PARAFFINIC DISTILLATE, HEAVY, HYDROTREATED (SEVERE)(64742-54-7.) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Canada - Alberta Occupational Exposure Limits | Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits |
| Canada - British Columbia Occupational Exposure Limits | Canada - Saskatchewan Occupational Health and Safety Regulations - Designated Chemical Substances |
| Canada - Northwest Territories Occupational Exposure Limits (English) | Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances |
| Canada - Nova Scotia Occupational Exposure Limits | Canada Categorization decisions for all DSL substances |
| Canada - Prince Edward Island Occupational Exposure Limits | Canada Domestic Substances List (DSL) |
| Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens | International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs |
| Canada - Quebec Permissible Exposure Values for Airborne Contaminants (French) | |

CALCIUM ALKYL PHENATE SULFIDE(90480-91-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Not Applicable

POLYOLEFIN POLYAMINE SUCCINIMIDE(147880-09-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Not Applicable

ZINC BIS(SEC-BUTYL AND 1,3-DIMETHYLBUTYL) DITHIOPHOSPHATE(68784-31-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

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

| National Inventory | Status |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Australia - AICS | N (calcium alkyl phenate sulfide; polyolefin polyamine succinimide) |
| Canada - DSL | N (calcium alkyl phenate sulfide; polyolefin polyamine succinimide) |
| Canada - NDSL | N (calcium alkyl phenate sulfide; paraffinic distillate, heavy, hydrotreated (severe); polyolefin polyamine succinimide; zinc bis(sec-butyl and 1,3-dimethylbutyl) dithiophosphate) |
| China - IECSC | N (calcium alkyl phenate sulfide) |
| Europe - EINEC / ELINCS / NLP | N (polyolefin polyamine succinimide) |
| Japan - ENCS | N (calcium alkyl phenate sulfide; polyolefin polyamine succinimide; zinc bis(sec-butyl and 1,3-dimethylbutyl) dithiophosphate) |
| Korea - KECI | N (calcium alkyl phenate sulfide; polyolefin polyamine succinimide; zinc bis(sec-butyl and 1,3-dimethylbutyl) dithiophosphate) |
| New Zealand - NZIoC | N (calcium alkyl phenate sulfide) |
| Philippines - PICCS | N (calcium alkyl phenate sulfide) |
| USA - TSCA | N (calcium alkyl phenate sulfide; polyolefin polyamine succinimide) |
| Legend: | Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets) |

SECTION 16 OTHER INFORMATION

Other information

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.

A list of reference resources used to assist the committee may be found at:
www.chemwatch.net

The (M)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

Continued...

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ACGIH: American Conference of Governmental Industrial Hygienists

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit,

IDLH: Immediately Dangerous to Life or Health Concentrations

OSF: Odour Safety Factor

NOAEL :No Observed Adverse Effect Level

LOAEL: Lowest Observed Adverse Effect Level

TLV: Threshold Limit Value

LOD: Limit Of Detection

OTV: Odour Threshold Value

BCF: BioConcentration Factors

BEI: Biological Exposure Index

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