

**MICROLUBE GB 00**

Version 1.0      Revision Date: 05/12/2021      Date of last issue: -  
Date of first issue: 05/12/2021      Print Date: 10/22/2021

**SECTION 1. IDENTIFICATION**

Product name : MICROLUBE GB 00

Article-No. : 020236

**Manufacturer or supplier's details**

Company name of supplier : Klüber Lubrication NA LP  
9010 CR 2120  
Tyler, Texas 75707  
Phone: (903) 534-8021  
Fax: (903) 581-4376

32 Industrial Drive  
Londonderry, NH 03053  
Phone: (603) 647-4104  
Fax: (603) 647-4106

E-mail address of person responsible for the SDS : mcm@us.kluber.com  
Material Compliance Management

Emergency telephone number : +1-517-545-7070 NCEC

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

Recommended use : Grease

Restrictions on use : Restricted to professional users.

**SECTION 2. HAZARDS IDENTIFICATION**

**GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Eye irritation : Category 2A

Skin sensitisation : Category 1

**GHS label elements**

Hazard pictograms :



Signal word : Warning

Hazard statements : May cause an allergic skin reaction.  
Causes serious eye irritation.

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Precautionary statements : **Prevention:**  
Wash skin thoroughly after handling.  
Wear protective gloves/ eye protection/ face protection.

**Response:**  
If skin irritation or rash occurs: Get medical advice/ attention.  
If eye irritation persists: Get medical advice/ attention.  
Take off contaminated clothing and wash it before reuse.

**Disposal:**  
Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

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

Substance / Mixture : Mixture

Chemical nature : Mineral oil.  
lithium soap  
silicate

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
Residual oils (petroleum), solvent-dewaxed	64742-62-7	Trade secret ( $\geq 60 - < 80$ )
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7	Trade secret ( $\geq 5 - < 10$ )
Silicon dioxide	7631-86-9	Trade secret ( $\geq 1 - < 5$ )
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	Trade secret ( $\geq 1 - < 5$ )
Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl	Not Assigned	Trade secret ( $\geq 1 - < 5$ )
zinc O,O',O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate)	2215-35-2	Trade secret ( $\geq 1 - < 5$ )
lithium 12-hydroxystearate	7620-77-1	Trade secret ( $\geq 1 - < 5$ )

Actual concentration is withheld as a trade secret

**SECTION 4. FIRST AID MEASURES**

If inhaled : Remove person to fresh air. If signs/symptoms continue, get

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- medical attention.  
Keep patient warm and at rest.  
If unconscious, place in recovery position and seek medical advice.  
Keep respiratory tract clear.  
If breathing is irregular or stopped, administer artificial respiration.
- In case of skin contact : Take off all contaminated clothing immediately.  
Wash off immediately with soap and plenty of water.  
Get medical attention immediately if irritation develops and persists.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes.  
Seek medical advice.
- If swallowed : Move the victim to fresh air.  
If unconscious, place in recovery position and seek medical advice.  
Keep respiratory tract clear.  
Do not induce vomiting without medical advice.  
Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : May cause an allergic skin reaction.  
Allergic appearance
- Notes to physician : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

**SECTION 5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Unsuitable extinguishing media : High volume water jet
- Hazardous combustion products : Carbon oxides  
Nitrogen oxides (NOx)  
Sulphur oxides  
Oxides of phosphorus  
Metal oxides
- Further information : Standard procedure for chemical fires.  
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Special protective equipment : In the event of fire, wear self-contained breathing apparatus.

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for firefighters                      Use personal protective equipment.  
Exposure to decomposition products may be a hazard to health.

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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.  
Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust).  
Do not breathe vapours, aerosols.  
Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow contact with soil, surface or ground water.  
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Clean up promptly by sweeping or vacuum.  
Keep in suitable, closed containers for disposal.

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**SECTION 7. HANDLING AND STORAGE**

Advice on safe handling : Avoid contact with skin and eyes.  
For personal protection see section 8.  
Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.  
Smoking, eating and drinking should be prohibited in the application area.  
Wash hands and face before breaks and immediately after handling the product.  
Do not get in eyes or mouth or on skin.  
Do not get on skin or clothing.  
Do not ingest.  
Do not repack.  
These safety instructions also apply to empty packaging which may still contain product residues.  
Keep container closed when not in use.

Conditions for safe storage : Store in original container.  
Keep container closed when not in use.  
Keep in a dry, cool and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Store in accordance with the particular national regulations.  
Keep in properly labelled containers.

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**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Residual oils (petroleum), solvent-dewaxed	64742-62-7	TWA (Mist)	5 mg/m <sup>3</sup>	OSHA Z-1
		TWA (Inhalable particulate matter)	5 mg/m <sup>3</sup>	ACGIH
		TWA (Mist)	5 mg/m <sup>3</sup>	OSHA P0
		TWA (Mist)	5 mg/m <sup>3</sup>	NIOSH REL
		ST (Mist)	10 mg/m <sup>3</sup>	NIOSH REL
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7	TWA (Mist)	5 mg/m <sup>3</sup>	OSHA Z-1
		TWA (Inhalable particulate matter)	5 mg/m <sup>3</sup>	ACGIH
		TWA (Mist)	5 mg/m <sup>3</sup>	OSHA P0
		TWA (Mist)	5 mg/m <sup>3</sup>	NIOSH REL
		ST (Mist)	10 mg/m <sup>3</sup>	NIOSH REL
Silicon dioxide	7631-86-9	TWA	6 mg/m <sup>3</sup>	NIOSH REL
		TWA (Dust)	20 Million particles per cubic foot	OSHA Z-3
		TWA (Dust)	80 mg/m <sup>3</sup> / %SiO <sub>2</sub>	OSHA Z-3
		TWA (Dust)	20 Million particles per cubic foot (Silica)	OSHA Z-3
		TWA (Dust)	80 mg/m <sup>3</sup> / %SiO <sub>2</sub> (Silica)	OSHA Z-3
		TWA	6 mg/m <sup>3</sup> (Silica)	NIOSH REL
		TWA (Respirable dust)	0.05 mg/m <sup>3</sup> (Silica)	NIOSH REL
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	TWA (Inhalable particulate matter)	5 mg/m <sup>3</sup>	ACGIH
		TWA (Mist)	5 mg/m <sup>3</sup>	OSHA P0
		TWA (Mist)	5 mg/m <sup>3</sup>	NIOSH REL
		ST (Mist)	10 mg/m <sup>3</sup>	NIOSH REL
		TWA (Mist)	5 mg/m <sup>3</sup>	OSHA Z-1
lithium 12-hydroxystearate	7620-77-1	TWA (Inhalable particulate matter)	10 mg/m <sup>3</sup>	ACGIH
		TWA (Respirable particulate matter)	3 mg/m <sup>3</sup>	ACGIH

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**Engineering measures** : none

**Personal protective equipment**

Respiratory protection : Not required; except in case of aerosol formation.

Filter type : Filter type P

Hand protection  
Material : Nitrile rubber  
Break through time : > 10 min  
Protective index : Class 1

Remarks : Wear protective gloves. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case.

Eye protection : Safety glasses with side-shields

Protective measures : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.  
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures : Wash face, hands and any exposed skin thoroughly after handling.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : paste

Colour : red

Odour : characteristic

Odour Threshold : No data available

pH : substance/mixture is non-soluble (in water)

Melting point/range : No data available

Boiling point/boiling range : No data available

Flash point : Not applicable

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Evaporation rate	:	No data available
Flammability (solid, gas)	:	Combustible Solids
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	< 0.001 hPa (68 °F / 20 °C)
Relative vapour density	:	No data available
Relative density	:	0.93 (68 °F / 20 °C) Reference substance: Water The value is calculated
Bulk density	:	No data available
Solubility(ies)		
Water solubility	:	insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	No data available
Sublimation point	:	No data available

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity	:	No hazards to be specially mentioned.
Chemical stability	:	Stable under normal conditions.

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Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.

Conditions to avoid : No conditions to be specially mentioned.

Incompatible materials : No materials to be especially mentioned.

Hazardous decomposition products : No decomposition if stored and applied as directed.

**SECTION 11. TOXICOLOGICAL INFORMATION**

**Acute toxicity**

**Product:**

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method

Acute inhalation toxicity : Remarks: This information is not available.

Acute dermal toxicity : Symptoms: Redness, Local irritation

**Components:**

**Residual oils (petroleum), solvent-dewaxed:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes

**Distillates (petroleum), hydrotreated heavy paraffinic:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes

Acute inhalation toxicity : LC50 (Rat): > 5.53 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402

**Silicon dioxide:**



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Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes

Acute inhalation toxicity : LC50 (Rat): > 5.53 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
GLP: yes  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl:

Acute oral toxicity : LD50 (Rat): 2,000 mg/kg  
Assessment: The component/mixture is moderately toxic after single ingestion.

**zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate):**

Acute oral toxicity : LD50 (Rat): 2,230 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male): > 2.0 mg/l  
Exposure time: 1 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.

Acute dermal toxicity : LD50 (Rabbit): > 25,000 mg/kg  
Method: OECD Test Guideline 402

**lithium 12-hydroxystearate:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rabbit): > 3,000 mg/kg

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Assessment: The substance or mixture has no acute dermal toxicity

**Skin corrosion/irritation**

**Product:**

Remarks : This information is not available.

**Components:**

**Residual oils (petroleum), solvent-dewaxed:**

Species : Rabbit  
 Assessment : No skin irritation  
 Method : OECD Test Guideline 404  
 Result : No skin irritation  
 GLP : yes

**Distillates (petroleum), hydrotreated heavy paraffinic:**

Species : Rabbit  
 Assessment : No skin irritation  
 Method : OECD Test Guideline 404  
 Result : No skin irritation  
 GLP : yes

**Silicon dioxide:**

Species : Rabbit  
 Assessment : No skin irritation  
 Method : OECD Test Guideline 404  
 Result : No skin irritation  
 GLP : yes

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Species : Rabbit  
 Assessment : No skin irritation  
 Method : OECD Test Guideline 404  
 Result : No skin irritation

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl:

Result : Mild skin irritation

**zinc O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate):**

Species : Rabbit  
 Assessment : Irritating to skin.  
 Method : OECD Test Guideline 404  
 Result : Irritating to skin.  
 GLP : yes

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**lithium 12-hydroxystearate:**

Assessment : No skin irritation  
Method : OECD Test Guideline 439  
Result : No skin irritation

**Serious eye damage/eye irritation**

**Product:**

Remarks : Irritating to eyes.

**Components:**

**Residual oils (petroleum), solvent-dewaxed:**

Species : Rabbit  
Result : No eye irritation  
Assessment : No eye irritation  
Method : OECD Test Guideline 405  
GLP : yes

**Distillates (petroleum), hydrotreated heavy paraffinic:**

Species : Rabbit  
Result : No eye irritation  
Assessment : No eye irritation  
Method : OECD Test Guideline 405  
GLP : yes

**Silicon dioxide:**

Species : Rabbit  
Result : No eye irritation  
Assessment : No eye irritation  
Method : OECD Test Guideline 405  
GLP : yes

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Species : Rabbit  
Result : No eye irritation  
Assessment : No eye irritation  
Method : OECD Test Guideline 405  
GLP : yes

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl:

Result : Risk of serious damage to eyes.  
Assessment : Risk of serious damage to eyes.

**zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate):**

Species : Rabbit  
Result : Risk of serious damage to eyes.

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Assessment : Risk of serious damage to eyes.  
Method : OECD Test Guideline 405  
GLP : yes

**lithium 12-hydroxystearate:**

Species : Rabbit  
Result : No eye irritation  
Assessment : No eye irritation  
Method : OECD Test Guideline 405

**Respiratory or skin sensitisation**

**Product:**

Remarks : This information is not available.

**Components:**

**Residual oils (petroleum), solvent-dewaxed:**

Species : Guinea pig  
Assessment : Did not cause sensitisation on laboratory animals.  
Method : OECD Test Guideline 406  
Result : Did not cause sensitisation on laboratory animals.  
GLP : yes

**Distillates (petroleum), hydrotreated heavy paraffinic:**

Species : Guinea pig  
Assessment : Does not cause skin sensitisation.  
Method : OECD Test Guideline 406  
Result : Does not cause skin sensitisation.  
GLP : yes

**Silicon dioxide:**

Assessment : Does not cause skin sensitisation.  
Result : Does not cause skin sensitisation.

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Species : Guinea pig  
Assessment : Does not cause skin sensitisation.  
Method : OECD Test Guideline 406  
Result : Does not cause skin sensitisation.

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl:

Assessment : Probability or evidence of skin sensitisation in humans  
Result : May cause sensitisation by skin contact.

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**zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate):**

Test Type	:	Buehler Test
Species	:	Guinea pig
Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

**lithium 12-hydroxystearate:**

Exposure routes	:	Dermal
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	negative

**Germ cell mutagenicity**

**Product:**

Genotoxicity in vitro	:	Remarks: No data available
Genotoxicity in vivo	:	Remarks: No data available

**Components:**

**Residual oils (petroleum), solvent-dewaxed:**

Germ cell mutagenicity - Assessment	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
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**Silicon dioxide:**

Germ cell mutagenicity - Assessment	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
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**Distillates (petroleum), hydrotreated heavy naphthenic:**

Genotoxicity in vitro	:	Test Type: In vitro mammalian cell gene mutation test Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative
Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Mouse Cell type: Bone marrow Application Route: Intraperitoneal injection Method: OECD Test Guideline 474 Result: negative
Germ cell mutagenicity - Assessment	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl:

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Genotoxicity in vitro : Test Type: Ames test  
Test system: Salmonella typhimurium  
Method: OECD Test Guideline 471  
Result: negative

**zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate):**

Genotoxicity in vitro : Test Type: reverse mutation assay  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative

Genotoxicity in vivo : Test Type: Cytogenetic assay  
Species: Mouse  
Cell type: Bone marrow  
Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative

**Carcinogenicity**

**Product:**

Remarks : No data available

**Components:**

**Residual oils (petroleum), solvent-dewaxed:**

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

**Distillates (petroleum), hydrotreated heavy paraffinic:**

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

**Silicon dioxide:**

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

**IARC** Group 1: Carcinogenic to humans  
Silicon dioxide 7631-86-9  
(Silica dust, crystalline)

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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**NTP** Known to be human carcinogen  
Silicon dioxide  
(Silica, Crystalline (Respirable Size)) 7631-86-9

**Reproductive toxicity**

**Product:**

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

**Components:**

**Residual oils (petroleum), solvent-dewaxed:**

Reproductive toxicity - Assessment : - Fertility -  
No toxicity to reproduction  
- Teratogenicity -  
No effects on or via lactation

**Distillates (petroleum), hydrotreated heavy paraffinic:**

Reproductive toxicity - Assessment : - Fertility -  
No toxicity to reproduction

**Silicon dioxide:**

Reproductive toxicity - Assessment : - Fertility -  
No toxicity to reproduction  
- Teratogenicity -  
No effects on or via lactation

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Effects on foetal development : Species: Rat  
Application Route: Dermal  
General Toxicity Maternal: LOAEL: 125 mg/kg body weight  
Teratogenicity: NOAEL: >= 2,000 mg/kg body weight  
Developmental Toxicity: NOAEL: >= 2,000 mg/kg body weight  
Embryo-foetal toxicity: NOAEL: >= 2,000 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No effects on fertility and early embryonic development were detected.

Reproductive toxicity - Assessment : - Fertility -  
No toxicity to reproduction  
- Teratogenicity -  
No toxicity to reproduction

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Reproductive toxicity - Assessment : - Fertility -  
No toxicity to reproduction

**zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate):**

Effects on foetal development : Test Type: reproductive and developmental toxicity study  
Species: Rat  
Application Route: Oral  
General Toxicity Maternal: NOAEL: 160 mg/kg body weight  
Developmental Toxicity: NOAEL: 160 mg/kg body weight  
Method: OECD Test Guideline 422  
Result: No effects on fertility and early embryonic development were detected.

**STOT - single exposure**

**Components:**

**Silicon dioxide:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

**STOT - repeated exposure**

**Components:**

**Silicon dioxide:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Repeated dose toxicity**

**Product:**

Remarks : This information is not available.



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**Components:**

**zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate):**

Species : Rat  
NOAEL : 160 mg/kg  
Application Route : Oral  
Method : OECD Test Guideline 422

**Aspiration toxicity**

**Product:**

This information is not available.

**Components:**

**Residual oils (petroleum), solvent-dewaxed:**

No aspiration toxicity classification

**Distillates (petroleum), hydrotreated heavy paraffinic:**

No aspiration toxicity classification

**Silicon dioxide:**

No aspiration toxicity classification

**Distillates (petroleum), hydrotreated heavy naphthenic:**

No aspiration toxicity classification

**Further information**

**Product:**

Remarks : Information given is based on data on the components and the toxicology of similar products.

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**SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Product:**

Toxicity to fish :  
Remarks: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Toxicity to daphnia and other aquatic invertebrates :  
Remarks: No data available

Toxicity to algae/aquatic :



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**Silicon dioxide:**

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 10,000 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : LC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOELR (Oncorhynchus mykiss (rainbow trout)): >= 1,000 mg/l  
Exposure time: 28 d  
Remarks: The value is calculated

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR (Daphnia magna (Water flea)): 10 mg/l  
Exposure time: 21 d  
Test Type: Reproduction Test  
Method: OECD Test Guideline 211

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 8.5 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 91.4 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Selenastrum capricornutum (green algae)): 6.4 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR (Daphnia magna (Water flea)): 0.12 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211

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Toxicity to microorganisms : EC50 (activated sludge): 2,433 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209

**Ecotoxicology Assessment**

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

**zinc O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate):**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4.5 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 23 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 21 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.4 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211  
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 10,000 mg/l  
Exposure time: 3 h  
Test Type: Respiration inhibition  
Method: OECD Test Guideline 209  
GLP: yes

**lithium 12-hydroxystearate:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 160 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

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NOEC (Pseudokirchneriella subcapitata (green algae)): 160 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

**Persistence and degradability**

**Product:**

Biodegradability : Remarks: No data available

Physico-chemical removability : Remarks: No data available

**Components:**

**Residual oils (petroleum), solvent-dewaxed:**

Biodegradability : aerobic  
Inoculum: activated sludge  
Result: Not rapidly biodegradable  
Biodegradation: 3 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B  
GLP: yes

**Distillates (petroleum), hydrotreated heavy paraffinic:**

Biodegradability : aerobic  
Inoculum: activated sludge  
Result: Not rapidly biodegradable  
Biodegradation: 3 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B  
GLP: yes

**Distillates (petroleum), hydrotreated heavy naphthenic:**

Biodegradability : aerobic  
Inoculum: activated sludge  
Result: Not rapidly biodegradable  
Biodegradation: 3 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B  
GLP: yes

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl:

Biodegradability : aerobic  
Inoculum: activated sludge  
Result: Not rapidly biodegradable  
Biodegradation: 5.4 - 9.4 %  
Exposure time: 28 d

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Method: OECD Test Guideline 301B  
GLP: yes

**zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate):**

Biodegradability : aerobic  
Inoculum: activated sludge  
Result: Not readily biodegradable.  
Biodegradation: 1.5 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B

**lithium 12-hydroxystearate:**

Biodegradability : Primary biodegradation  
Inoculum: activated sludge  
Result: rapidly biodegradable  
Biodegradation: 74.7 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301C

**Bioaccumulative potential**

**Product:**

Bioaccumulation : Remarks: This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).  
This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

**Components:**

**Residual oils (petroleum), solvent-dewaxed:**

Biodegradability : Remarks: No data available

Partition coefficient: n-octanol/water : Pow: > 3.5

**Distillates (petroleum), hydrotreated heavy paraffinic:**

Partition coefficient: n-octanol/water : log Pow: > 2

Reaction products of 4-methyl-2-pentanol and diphosphorus pentasulfide, propoxylated, esterified with diphosphorus pentoxide, and salted by amines, C12-14- tert-alkyl:

Biodegradability : Species: Oncorhynchus mykiss (rainbow trout)  
Bioconcentration factor (BCF): 436  
Exposure time: 97 d  
Method: OPPTS 850.1730

**zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate):**

Partition coefficient: n-octanol/water : log Pow: 2.21 (68 °F / 20 °C)



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**SECTION 13. DISPOSAL CONSIDERATIONS**

**Disposal methods**

- Waste from residues : The product should not be allowed to enter drains, water courses or the soil.  
Do not dispose of with domestic refuse.  
Dispose of as hazardous waste in compliance with local and national regulations.
- Contaminated packaging : Packaging that is not properly emptied must be disposed of as the unused product.  
Dispose of waste product or used containers according to local regulations.

**SECTION 14. TRANSPORT INFORMATION**

**International Regulations**

**UNRTDG**

- UN number : UN 3077  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Z)-octadec-9-enylamine  
Class : 9  
Packing group : III  
Labels : 9

**IATA-DGR**

- UN/ID No. : UN 3077  
Proper shipping name : Environmentally hazardous substance, solid, n.o.s.  
(Z)-octadec-9-enylamine  
Class : 9  
Packing group : III  
Labels : Miscellaneous  
Packing instruction (cargo aircraft) : 956  
Packing instruction (passenger aircraft) : 956

**IMDG-Code**

- UN number : UN 3077  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Z)-octadec-9-enylamine  
Class : 9  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Marine pollutant : yes



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**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**National Regulations**

**49 CFR**

UN/ID/NA number	:	UN 3077
Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (Z)-octadec-9-enylamine)
Class	:	9
Packing group	:	III
Labels	:	CLASS 9
ERG Code	:	171
Marine pollutant	:	no
Remarks	:	Not regulated by ground transportation in non-bulk packages less than 119 gallons. For packages greater than 119 gallons, or for air/sea shipping, refer to applicable marine pollutant regulations.

**Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

**SECTION 15. REGULATORY INFORMATION**

**EPCRA - Emergency Planning and Community Right-to-Know Act**

**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Respiratory or skin sensitisation  
Serious eye damage or eye irritation

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

zinc O,O,O',O'-	2215-35-2	>= 1 - < 5 %
tetrakis(1,3-		
dimethylbutyl)		
bis(phosphorodit		
hioate)		

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zinc bis[O,O-bis(2-ethylhexyl)]bis(dithiophosphate)	4259-15-8	>= 0.1 - < 1 %
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**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).  
 This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).  
 This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).  
 This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.  
 This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.  
 This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl)bis(phosphorodithioate)	2215-35-2	>= 1 - < 5 %
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This product does not contain any priority pollutants related to the U.S. Clean Water Act

**US State Regulations**

**Massachusetts Right To Know**

Silicon dioxide	7631-86-9
Distillates (petroleum), solvent-refined light naphthenic	64741-97-5

**Pennsylvania Right To Know**

Residual oils (petroleum), solvent-dewaxed	64742-62-7
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
sulphurised vegetable fatty acid esters	Not Assigned
olefin sulfide	Not Assigned
Silicon dioxide	7631-86-9
zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl)bis(phosphorodithioate)	2215-35-2
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)	4259-15-8
Propan-2-ol	67-63-0
1,2,4-trimethylbenzene	95-63-6

**Maine Chemicals of High Concern**

Silicon dioxide	7631-86-9
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**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

**Washington Chemicals of High Concern**

Product does not contain any listed chemicals

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**California Prop. 65**

WARNING: This product can expose you to chemicals including Silicon dioxide, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**California List of Hazardous Substances**

Silicon dioxide	7631-86-9
zinc O,O,O',O'-tetrakis(1,3-dimethylbutyl)bis(phosphorodithioate)	2215-35-2

**California Permissible Exposure Limits for Chemical Contaminants**

Residual oils (petroleum), solvent-dewaxed	64742-62-7
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
Silicon dioxide	7631-86-9
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5

**California Regulated Carcinogens**

Silicon dioxide	7631-86-9
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**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

**SECTION 16. OTHER INFORMATION**

**Further information**

**Full text of other abbreviations**

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-3	:	USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
ACGIH / TWA	:	8-hour, time-weighted average
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average
OSHA Z-3 / TWA	:	8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic

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Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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