

MICROLUBE GB 0

Version 2.0 Revision Date: 06/13/2022 Date of last issue: 12/01/2021 Print Date: 10/04/2023
Date of first issue: 05/12/2021

SECTION 1. IDENTIFICATION

Product name : MICROLUBE GB 0

Article-No. : 020232

Manufacturer or supplier's details

Company name of supplier : Klüber Lubrication NA LP
9010 County Road 2120
Tyler, Texas 75707
USA
Phone: +1 903 534-8021
Fax: +1 903 581-4376

32 Industrial Drive
Londonderry, NH 03053
USA
Phone: +1 603 647-4104
Fax: +1 603 647-4106

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

GHS label elements

Hazard pictograms : 

Signal word : Warning

Hazard statements : Causes serious eye irritation.

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

Response:
IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.

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 (>= 30 - < 60) |
| Distillates (petroleum), hydrotreated heavy paraffinic | 64742-54-7 | Trade secret (>= 10 - < 30) |
| Distillates (petroleum), hydrotreated heavy naphthenic | 64742-52-5 | Trade secret (>= 5 - < 10) |
| Silicon dioxide | 7631-86-9 | Trade secret (>= 1 - < 5) |
| lithium 12-hydroxystearate | 7620-77-1 | Trade secret (>= 1 - < 5) |
| Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts | 85940-28-9 | Trade secret (>= 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 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.

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- 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.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.
Exposure to decomposition products may be a hazard to health.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protection : Evacuate personnel to safe areas.

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- tive equipment and emergency procedures : 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 : Try to prevent the material from entering drains or water courses.
Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Clean up promptly by sweeping or vacuum.
Keep in suitable, closed containers for disposal.

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.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
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| Residual oils (petroleum), solvent-dewaxed | 64742-62-7 | TWA (Inhalable particulate matter) | 5 mg/m3 | ACGIH (2013-03-01) |
| | | TWA (Mist) | 5 mg/m3 | OSHA Z-1 (2018-03-15) |
| | | TWA (Mist) | 5 mg/m3 | OSHA P0 (1989-01-19) |
| | | TWA (Mist) | 5 mg/m3 | NIOSH REL (2019-10-04) |
| | | ST (Mist) | 10 mg/m3 | NIOSH REL (2019-10-04) |
| Distillates (petroleum), hydrotreated heavy paraffinic | 64742-54-7 | TWA (Inhalable particulate matter) | 5 mg/m3 | ACGIH (2013-03-01) |
| | | TWA (Mist) | 5 mg/m3 | OSHA Z-1 (2018-03-15) |
| | | TWA (Mist) | 5 mg/m3 | OSHA P0 (1989-01-19) |
| | | TWA (Mist) | 5 mg/m3 | NIOSH REL (2019-10-04) |
| | | ST (Mist) | 10 mg/m3 | NIOSH REL (2019-10-04) |
| Distillates (petroleum), hydrotreated heavy naphthenic | 64742-52-5 | TWA (Inhalable particulate matter) | 5 mg/m3 | ACGIH (2013-03-01) |
| | | TWA (Mist) | 5 mg/m3 | OSHA Z-1 (2018-03-15) |
| | | TWA (Mist) | 5 mg/m3 | OSHA P0 (1989-01-19) |
| | | TWA (Mist) | 5 mg/m3 | NIOSH REL (2019-10-04) |
| | | ST (Mist) | 10 mg/m3 | NIOSH REL (2019-10-04) |
| Silicon dioxide | 7631-86-9 | TWA | 6 mg/m3 | NIOSH REL (2005-09-01) |
| | | TWA (Dust) | 20 Million particles per cubic foot | OSHA Z-3 (2011-07-01) |
| | | TWA (Dust) | 80 mg/m3 / %SiO2 | OSHA Z-3 (2011-07-01) |
| | | TWA (Dust) | 20 Million particles per cubic foot (Silica) | OSHA Z-3 (2012-07-01) |
| | | TWA (Dust) | 80 mg/m3 / %SiO2 (Silica) | OSHA Z-3 (2012-07-01) |
| | | TWA | 6 mg/m3 (Silica) | NIOSH REL (2013-10-08) |
| lithium 12-hydroxystearate | 7620-77-1 | TWA (Inhalable particulate matter) | 10 mg/m3 | ACGIH (2018-03-20) |
| | | TWA (Res- | 3 mg/m3 | ACGIH |

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| | | pirable particulate matter) | | (2018-03-20) |
|--|--|-----------------------------|--|--------------|

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

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Protective measures : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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 : Not applicable
substance/mixture is non-soluble (in water)

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Melting point/range : No data available

Boiling point/boiling range : No data available

Flash point : Not applicable

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 : 0.90 (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

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Sublimation point : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No hazards to be specially mentioned.

Chemical stability : Stable under normal conditions.

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

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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

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

Silicon dioxide:

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

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

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
Assessment: The substance or mixture has no acute dermal toxicity

Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts:

Acute oral toxicity : LD50 (Rat): 3,080 mg/kg
Method: OECD Test Guideline 401
GLP: yes

Acute dermal toxicity : LD50 (Rat): > 20,000 mg/kg
Method: OECD Test Guideline 402
GLP: no

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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

Distillates (petroleum), hydrotreated heavy naphthenic:

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

Silicon dioxide:

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

lithium 12-hydroxystearate:

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

Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts:

Assessment : Irritating to skin.
Result : Irritating to skin.

Serious eye damage/eye irritation

Product:

Remarks : Irritating to eyes.

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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

Distillates (petroleum), hydrotreated heavy naphthenic:

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

lithium 12-hydroxystearate:

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

Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts:

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

Respiratory or skin sensitisation

Product:

Remarks : This information is not available.

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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

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.

Silicon dioxide:

Assessment : Does not cause skin sensitisation.
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.

Distillates (petroleum), hydrotreated heavy naphthenic:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster ovary cells

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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.

Silicon dioxide:

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

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.

Distillates (petroleum), hydrotreated heavy naphthenic:

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

Silicon dioxide:

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

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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

NTP No component of this product present at levels greater than or equal to 0.1% is

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identified as a known or anticipated carcinogen by NTP.

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

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

Silicon dioxide:

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

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STOT - single exposure

Components:

Distillates (petroleum), hydrotreated heavy naphthenic:

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

Silicon dioxide:

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

STOT - repeated exposure

Components:

Distillates (petroleum), hydrotreated heavy naphthenic:

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

Silicon dioxide:

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.

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

Distillates (petroleum), hydrotreated heavy naphthenic:

No aspiration toxicity classification

Silicon dioxide:

No aspiration toxicity classification

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Further information

Product:

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

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : Remarks: No data available

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

Toxicity to algae/aquatic plants : Remarks: No data available

Toxicity to microorganisms : Remarks: No data available

Components:

Residual oils (petroleum), solvent-dewaxed:

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

NOEC (Pimephales promelas (fathead minnow)): >= 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : LC50: > 10,000 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 202

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NOEC: \geq 10,000 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : NOEC (*Pseudokirchneriella subcapitata* (green algae)): \geq 100 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201

Distillates (petroleum), hydrotreated heavy paraffinic:

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: Immobilization
Method: OECD Test Guideline 202
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (*Daphnia magna* (Water flea)): 10 mg/l
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 211
GLP: yes

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 : LC50 (*Pseudokirchneriella subcapitata* (green algae)): $>$ 100

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plants : 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

Silicon dioxide:

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

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

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

Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4.5 mg/l
Exposure time: 96 h

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Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 5.4 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Selenastrum capricornutum (green algae)): 2.1 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.4 mg/l
Exposure time: 48 d
Method: OECD Test Guideline 211

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:

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

lithium 12-hydroxystearate:

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

Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts:

Biodegradability : Result: Not rapidly biodegradable

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:

Bioaccumulation : 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

lithium 12-hydroxystearate:

Partition coefficient: n-octanol/water : log Pow: 2.6

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Mobility in soil

Product:

Mobility : Remarks: No data available

Distribution among environmental compartments : Remarks: No data available

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks: 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).

Additional ecological information : No information on ecology is available.

Components:

Residual oils (petroleum), solvent-dewaxed:

Results of PBT and vPvB assessment : This substance is not considered to be very persistent and very bioaccumulating (vPvB). This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Distillates (petroleum), hydrotreated heavy paraffinic:

Results of PBT and vPvB assessment : Non-classified vPvB substance Non-classified PBT substance

Distillates (petroleum), hydrotreated heavy naphthenic:

Results of PBT and vPvB assessment : Non-classified PBT substance Non-classified vPvB substance

Silicon dioxide:

Results of PBT and vPvB assessment : Non-classified vPvB substance Non-classified PBT substance

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

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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

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

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

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

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 : Serious eye damage or eye irritation

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

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Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts 85940-28-9 >= 1 - < 5 %

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

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 SOCOMI 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

Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts 85940-28-9 >= 1 - < 5 %

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations

Massachusetts Right To Know

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

Pennsylvania Right To Know

| | |
|---|--------------|
| Residual oils (petroleum), solvent-dewaxed | 64742-62-7 |
| Distillates (petroleum), hydrotreated heavy paraffinic | 64742-54-7 |
| Distillates (petroleum), hydrotreated heavy naphthenic | 64742-52-5 |
| sulphurised vegetable fatty acid esters | Not Assigned |
| Fatty acids, C16-18 and C18-unsatd., Me esters, sulfurized | 68390-93-2 |
| Silicon dioxide | 7631-86-9 |
| Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso- | 85940-28-9 |

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Bu and iso-Pr) esters, zinc salts
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate) 4259-15-8

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Triphenyl phosphate 115-86-6

Washington Chemicals of High Concern

Triphenyl phosphate 115-86-6

New York City Hazardous Substances

Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso- 85940-28-9
Bu and iso-Pr) esters, zinc salts
zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate) 4259-15-8
Distillates (petroleum), hydrotreated light naphthenic 64742-53-6
Triphenyl phosphate 115-86-6
Distillates (petroleum), hydrotreated light paraffinic 64742-55-8
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil- 72623-86-0
based
Distillates (petroleum), hydrotreated heavy naphthenic 64742-52-5
lubricating oils (petroleum), C20-50, hydrotreated neutral oil- 72623-87-1
based
Distillates (petroleum), solvent-refined light naphthenic 64741-97-5
Distillates (petroleum), solvent-refined heavy naphthenic 64741-96-4

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

California List of Hazardous Substances

Silicon dioxide 7631-86-9
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso- 85940-28-9
Bu and iso-Pr) esters, zinc salts

California Permissible Exposure Limits for Chemical Contaminants

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

TSCA list

No substances are subject to a Significant New Use Rule.

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

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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. Table Z-1-A Limits for Air Contaminants (1989 vacated values) |
| 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 |

AIIIC - 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 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; TECl - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Con-

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trol 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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