

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Microlon Heavy Duty Grease

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

Identified uses : Lubricant

1.3 Details of the supplier of the safety data sheet

Company : Microlon Inc.
PO Box 80341
Austin, Texas 78708-0341
USA

Telephone : (512) 490-6460 (09:00 - 17:00)

Email address : info@microlon.com

1.4 Emergency telephone number

<http://www.pers-er.com/>

Emergency phone # : Domestic Shipments: 800-633-8253
International Shipments: 801-629-0667

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Acute aquatic toxicant: Category 3. Chronic aquatic toxicant: Category 3.

2.2 Environmental Hazards

Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

2.3 PRECAUTIONARY STATEMENTS:

Prevention

Avoid release to the environment

Disposal

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.4 Other hazards - none

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Mixtures

| Components | Amount | CAS Number |
|--|------------------|--|
| Highly refined mineral oil (C15 - C50) | 70 - 99 %wt/wt | 64741-88-4, 64741-89-5, 64741-96-4, 64741-97-5, 64742-01-4, 64742-52-5, 64742-53-6, 64742-54-7, 64742-62-7, 64742-65-0, or 72623-83-7. |
| The Base Oil may be a mixture of any of the following: | | |
| Zinc Dialkyldithiophosphate | 0.5 - 1.5 %wt/wt | 68649-42-3 |

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4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, apply a waterless hand cleaner, mineral oil, or petroleum jelly. Then wash with soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

4.2 Most important symptoms and effects, both acute and delayed

IMMEDIATE SYMPTOMS AND HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

4.3 DELAYED OR OTHER SYMPTOMS AND HEALTH EFFECTS: Not classified.

5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

5.2 PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

6. ACCIDENTAL RELEASE MEASURES

6.1 Protective Measures:

Eliminate all sources of ignition in vicinity of spilled material.

6.2 Spill Management:

Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

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6.3 Reporting:

Report spills to local authorities as appropriate or required.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautionary Measures:

Do not get in eyes, on skin, or on clothing. Use only in well ventilated areas. Avoid inhalation of vapor or mist. Keep container closed. Keep out of the reach of children. Wash thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 General Handling Information:

Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits:

| Component | Agency | TWA | STEL |
|--|----------------|---------------------|----------------------|
| Highly refined mineral oil (C15 - C50) | ACGIH | 5 mg/m ³ | 10 mg/m ³ |
| Highly refined mineral oil (C15 - C50) | OSHA Z-1 | 5 mg/m ³ | |
| Zinc dialkyldithiophosphate | Not Applicable | | |

Consult local authorities for appropriate values.

8.2 Exposure Controls

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

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Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Attention: the data below are typical values and do not constitute a specification.

| | |
|-------------------------------------|--|
| Physical State: | Red Semi-solid |
| Odor: | Petroleum odor |
| Odor Threshold: | No data available |
| pH | Not Applicable |
| Vapor Pressure: | No data available |
| Vapor Density (Air= 1) | No data available |
| Boiling Point: | No data available |
| Freezing Point: | Not Applicable |
| Melting Point: | Not Applicable |
| Solubility: | Soluble in hydrocarbon solvents, insoluble in water. |
| Specific Gravity: | 1.1 @ 15.6°C (15.6°F) |
| Density: | No data available |
| Auto-ignition temperature | No data available |
| Evaporation Rate: | No data available |
| Percent Volatile (VOL): | No data available |
| Viscosity | No data available |
| Octanol/Water Partition Coefficient | No data available |

FLAMMABLE PROPERTIES

| | |
|--|---|
| Flammability (solid, gas) | No Data Available |
| Flashpoint | 274 °C (525 °F) |
| Autoignition | No data available |
| Flammability (Explosive) Limits (% by volume in air) | Lower: Not Applicable Upper: Not Applicable |

9.2 Other safety data

No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

This material is not expected to react.

10.2 Chemical Stability

This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

No data available.

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10.4 Conditions to avoid

High temperature (>50°C), sources of ignition & direct sunlight.

10.5 Incompatibility With Other Materials:

May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

10.6 Hazardous Decomposition Products:

None known (None expected)

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity

No data available on mixture. Not expected to have any acute toxic effects.

Skin corrosion/irritation

No data available on mixture. Not expected to cause any acute skin corrosion/irritation.

Serious eye damage/eye irritation

No data available on mixture. Not expected to cause any acute serious eye damage or primary irritation; mild reversible eye irritation may be possible following exposure.

Respiratory or skin sensitization

No data available on mixture. Not expected to have sensitization potential.

Germ Cell Mutagenicity

No data available.

Carcinogenicity

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.

Reproductive toxicity

No data available.

Specific Target Organ Toxicity - Single Exposure

No data available on mixture. Inhalation of significant vapors or mists may cause transient respiratory irritation.

Specific Target Organ Toxicity - Repeated Exposure

No data available.

Aspiration hazard

No data available on mixture. Not expected to pose an aspiration hazard.

Potential health effects

Inhalation

May be harmful if inhaled. May cause respiratory tract irritation

Ingestion

May be harmful if swallowed.

Skin

May be harmful if absorbed through skin. May cause skin irritation

Eyes

May cause eye irritation

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12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

This material contains one or more components that have a branched alkylphenol impurity that is highly toxic to aquatic organisms (disclosed in Section 3). The components containing the impurity have been tested and are not toxic to aquatic organisms. Therefore the data in Section 3 for the alkylphenol impurity should not be used to classify the product for aquatic toxicity.

12.2 Mobility

No data available.

12.3 Persistence and degradability

This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

12.4 Potential to bioaccumulate

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

13. DISPOSAL CONSIDERATIONS

- 13.1 Use material for its intended purpose or recycle if possible. Use of oil collection services available for used regular oil is acceptable for recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

Contaminated packaging

Dispose of as unused product

14. TRANSPORT INFORMATION

- 14.1 The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE ICAO TI OR IATA DGR

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:

Not applicable

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15. REGULATORY INFORMATION

- 15.1 EPCRA 311/312 CATEGORIES:**
- | | |
|---------------------------------------|----|
| 1. Immediate (Acute) Health Effects: | NO |
| 2. Delayed (Chronic) Health Effects: | NO |
| 3. Fire Hazard: | NO |
| 4. Sudden Release of Pressure Hazard: | NO |
| 5. Reactivity Hazard: | NO |

REGULATORY LISTS SEARCHED:

| | |
|---------------------|----------------------|
| 01-1=IARC Group 1 | 03=EPCRA 313 |
| 01-2A=IARC Group 2A | 04=CA Proposition 65 |
| 01-2B=IARC Group 2B | 05=MA RTK |
| 02=NTP Carcinogen | 06=NJ RTK |
| | 07=PA RTK |

The following components of this material are found on the regulatory lists indicated
 Zinc dialkyldithiophosphate 03, 06

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

Health & Safety at Work etc. Act 1974
 Control of substances hazardous to Health Regulations 2002 (as amended)
 Chemicals (Hazard Information and Packaging for Supply) Regulations 2009
 Classification, Labelling and Packaging of Substances and Mixtures Regulations 2008 (as amended)
 EH40/2005 Workplace Exposure Limits (as amended)
 Environmental Protection Act 1990
 Hazardous Waste Regulations 2005 (as amended)

16. OTHER INFORMATION

16.1 NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
 (0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

16.2 ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

| | |
|---|--|
| TLV - Threshold Limit Value | TWA - Time Weighted Average |
| STEL - Short-term Exposure Limit | PEL - Permissible Exposure Limit |
| GHS - Globally Harmonized System | CAS - Chemical Abstract Service Number |
| ACGIH - American Conference of Governmental Industrial Hygienists | IMO/IMDG - International Maritime Dangerous Goods Code |
| API - American Petroleum Institute | SDS - Safety Data Sheet |
| HMIS - Hazardous Materials Information System | NFPA - National Fire Protection Association (USA) |
| DOT - Department of Transportation (USA) | NTP - National Toxicology Program (USA) |
| IARC - International Agency for Research on Cancer | OSHA - Occupational Safety and Health Administration |
| NCEL - New Chemical Exposure Limit | EPA - Environmental Protection Agency |
| SCBA - Self-Contained Breathing Apparatus | |

16.3 Recommended restrictions on use

Use in accordance with manufacturer's technical instructions.

The information in this Safety Data Sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. This information has been prepared for the guidance of plant engineering, operations, management and for people working with or handling these products. This information is believed to be reliable and updated at Revision Date, and represents the best information currently available and known by Microlon Inc. However, Microlon Inc makes no guarantee or warranty, express or implied, with respect to such information and we assume no liability resulting from its use. The information related herein is based on proper handling and anticipated uses and is for the material without chemical additions or alterations. Users should make their own investigations to determine the suitability of the information for their particular purposes. It is the responsibility of the user to undertake a suitable risk assessment/COSHH assessment prior to using this material.