SAFETY DATA SHEET

1. Identification

Product identifier **KLONDIKE Open Gear Lubricant**

Other means of identification

Product code Open Gear

Recommended use Grease

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name KLONDIKE Lubricants Corporation

Address 3078 275th Street
Langley, BC V4W 3L4
Canada

Telephone General Information 1-877-293-4691

Website www.klondikelubricants.com

E-mail info@klondikelubricants.com

Emergency phone number Chemtrec (Within US) 1-800-424-9300
Chemtrec (International) 1-703-527-3887

Supplier Refer to Manufacturer

2. Hazard(s) identification

Physical hazards This mixture does not meet the classification criteria according to OSHA HazCom 2012.

Health hazards This mixture does not meet the classification criteria according to OSHA HazCom 2012.

Environmental hazards This mixture does not meet the classification criteria according to OSHA HazCom 2012.

OSHA defined hazards This mixture does not meet the classification criteria according to OSHA HazCom 2012.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture does not meet the criteria for classification.

Precautionary statement

Prevention None required according to OSHA Hazcom 2012.

Response None required according to OSHA Hazcom 2012.

Storage None required according to OSHA Hazcom 2012.

Disposal None required according to OSHA Hazcom 2012.

Hazard(s) not otherwise classified (HNOC) No OSHA defined hazard classes.
Other hazards which do not result in classification: May cause mild skin and eye irritation. May cause respiratory irritation. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Prolonged or repeated overexposure may cause liver effects.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
1-decene, Homopolymer, Hydrogenated	HYDROGENATED POLYDECENE	68037-01-4	30 - 60
Distillates (petroleum), Hydrotreated Heavy Naphthenic	HYDROTREATED HEAVY NAPHTHENIC DISTILLATE (PETROLEUM)	64742-52-5	30 - 60
Antimony Dithiocarbmate	Antimony, tris(dipentylcarbamodithioato-S,S)-, (oc-6-11)-Tris(dipentyldithiocarbamato-S,S')antimony	15890-25-2	7 - 13

Chemical name	Common name and synonyms	CAS number	%
Octadecanoic Acid, 12-hydroxy-	HYDROXYSTEARIC ACID 12-Hydroxyoctadecanoic acid	106-14-9	7 - 13
Hydrotreated Heavy Synthetic Base Oil	DISTILLATES, (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC	64742-65-0	3 - 7
Molybdenum Disulphide	MOLYBDENUM (IV) SULFIDE	1317-33-5	3 - 7

The exact concentrations of the above listed chemicals are being withheld as a trade secret as allowed by 29CFR1910.1200.

4. First-aid measures

Inhalation
Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Call a physician if symptoms develop or persist.

Skin contact
Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact
Flush with large amounts of water for 15 minutes. Get medical attention if irritation develops and persists.

Ingestion
Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention if symptoms occur. If ingestion of a large amount does occur, call a poison control center immediately.

Most important symptoms/effects, acute and delayed
May be mildly irritating to skin, eyes and respiratory system. Symptoms may include redness, edema, drying, defatting and cracking of the skin. Symptoms may include stinging and tearing. Symptoms may include upper respiratory irritation, coughing, and breathing difficulties. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Product may present an aspiration hazard, if ingested in large amounts. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.

Indication of immediate medical attention and special treatment needed
Treat symptomatically.

General information
If you feel unwell, seek medical advice (show the label where possible).

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Ventilate the contaminated area. Remove all sources of ignition. Move containers from fire area if you can do it without risk. Use water spray to cool unopened containers. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
No unusual fire or explosion hazards noted.

Hazardous combustion products
Carbon oxides. Sulphur oxides. Phosphorus oxides. Nitrogen oxides (NOx). Hydrocarbons.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Use only non-sparking tools. Avoid inhalation of vapors and spray mists. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up
Ventilate the contaminated area. Stop leak if you can do so without risk. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Contaminated absorbent material may pose the same hazards as the spilled product. Prevent entry into waterways, sewer, basements or confined areas.

Never return spills in original containers for re-use. For waste disposal, see section 13 of the SDS. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Environmental precautions
Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Eliminate all sources of ignition. Avoid inhalation of vapors and spray mists. Avoid contact with eyes, skin, and clothing. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Handle and open container with care.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Antimony Dithiocarbmate (CAS 15890-25-2)	PEL	0.5 mg/m3	
Distillates (petroleum), Hydrotreated Heavy Naphthenic (CAS 64742-52-5)	PEL	5 mg/m3	Mist.
		2000 mg/m3	
		500 ppm	
Hydrotreated Heavy Synthetic Base Oil (CAS 64742-65-0)	PEL	5 mg/m3	Mist.
		2000 mg/m3	
		500 ppm	
Molybdenum Disulphide (CAS 1317-33-5)	PEL	15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Antimony Dithiocarbmate (CAS 15890-25-2)	TWA	0.5 mg/m3	
Molybdenum Disulphide (CAS 1317-33-5)	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Inhalable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Antimony Dithiocarbmate (CAS 15890-25-2)	TWA	0.5 mg/m3	
Distillates (petroleum), Hydrotreated Heavy Naphthenic (CAS 64742-52-5)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Hydrotreated Heavy Synthetic Base Oil (CAS 64742-65-0)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

If exposure limits have not been established, maintain airborne levels to an acceptable level. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing.

Individual protection measures, such as personal protective equipment

Eye/face protection

Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Advice should be sought from glove suppliers.

Other

Wear suitable protective clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. Seek advice from respiratory protection specialists.

Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Grease.
Color	Grey.
Odor	Mild petroleum odor.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	> 300 ºC (572 ºF)
Flash point	> 200.0 ºC (392 ºF)
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	> 1
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	618.2 cSt
Other information	
Percent volatile	Nil
Specific gravity	0.91

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials. Do not use in areas without adequate ventilation.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	None known, refer to hazardous combustion products in Section 5.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Inhalation of vapors/fumes generated by heating this product may cause respiratory irritation with throat discomfort, coughing or difficulty breathing.
Skin contact	May cause mild skin irritation.
Eye contact	May cause mild eye irritation.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Most important symptoms/effects, acute and delayed	May be mildly irritating to skin, eyes and respiratory system. Symptoms may include redness, edema, drying, defatting and cracking of the skin. Symptoms may include stinging and tearing. Symptoms may include upper respiratory irritation, coughing, and breathing difficulties. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Product may present an aspiration hazard, if ingested in large amounts. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.

Information on toxicological effects

Acute toxicity See below for individual ingredient acute toxicity data.

Product	Species	Test Results
KLONDIKE Open Gear Lubricant (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	3827 mg/kg
Inhalation		
LC50	Rat	5.52 mg/l, 4 hours
Oral		
LD50	Rat	4737 mg/kg

Components	Species	Test Results
1-decene, Homopolymer, Hydrogenated (CAS 68037-01-4)		
Acute		
Dermal		
LD50	Rabbit	> 3000 mg/kg, 24 Hours
Inhalation		
LC50	Rat	> 5.2 mg/l, 4 hours Mist
Oral		
LD50	Rat	> 5000 mg/kg
Antimony Dithiocarbmate (CAS 15890-25-2)		
Acute		
Dermal		
LD50	Rabbit	> 16000 mg/kg
Inhalation		
LC50	Rat	No data in literature
Oral		
LD50	Rat	> 16400 mg/kg
Distillates (petroleum), Hydrotreated Heavy Naphthenic (CAS 64742-52-5)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	> 5.23 mg/l, 4 hours Mist
Oral		
LD50	Rat	> 5000 mg/kg

Components	Species	Test Results
Hydrotreated Heavy Synthetic Base Oil (CAS 64742-65-0)		
Acute		
Dermal		
LD50	Rabbit	> 3000 mg/kg
Inhalation		
LC50	Rat	> 5 mg/l, 4 Hours (Mist)
Oral		
LD50	Rat	> 5000 mg/kg
Molybdenum Disulphide (CAS 1317-33-5)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	2.82 mg/l, 4 hours (Dust)
Oral		
LD50	Rat	> 2000 mg/kg
Octadecanoic Acid, 12-hydroxy- (CAS 106-14-9)		
Acute		
Dermal		
LD50	Rabbit	No data in literature
Inhalation		
LC50	Rat	No data in literature
Oral		
LD50	Rat	> 10000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation May be irritating to the skin.

Serious eye damage/eye irritation Direct contact may cause very mild, temporary irritation and redness.

Respiratory or skin sensitization

Respiratory sensitization This product is not expected to cause respiratory sensitization.

Skin sensitizer Not expected to be a skin sensitizer.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified as a specific target organ toxicity -single exposure.

Specific target organ toxicity - repeated exposure Not classified as a specific target organ toxicity -repeated exposure.

Aspiration toxicity Not expected to be hazardous by OSHA criteria.

Chronic effects Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

Further information This product has no known adverse effect on human health.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
1-decene, Homopolymer, Hydrogenated (CAS 68037-01-4)			
Aquatic			
Acute			
Algae	EC50	Green algae (Selenastrum capricornutum)	> 1000 mg/l, 72 hours
Crustacea	EC50	Water flea (Daphnia magna)	> 1000 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	> 1000 mg/l, 96 hours
Chronic			
Algae	NOEC	Green algae (Selenastrum capricornutum)	1000 mg/l, 72 hours
Crustacea	NOEC	Water flea (Daphnia magna)	125 mg/l, 21 days
Distillates (petroleum), Hydrotreated Heavy Naphthenic (CAS 64742-52-5)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours
Chronic			
Algae	NOEL	Green Algae (Pseudokirchneriella subcapitata)	> 100 mg/l, 72 hours
Crustacea	NOEC	Water flea (Daphnia magna)	10 mg/l, 21 days
Hydrotreated Heavy Synthetic Base Oil (CAS 64742-65-0)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours
Chronic			
Algae	NOEC	Green Algae (Pseudokirchneriella subcapitata)	> 100 mg/l, 72 hours
Crustacea	NOEC	Water flea (Daphnia magna)	10 mg/l, 21 days

* Estimates for product may be based on additional component data not shown.

Persistence and degradability Distillates, (petroleum), Hydrotreated Heavy Paraffinic is considered to be not readily biodegradable.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This substance/mixture is not intended to be transported in bulk.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Antimony Dithiocarbmate (CAS 15890-25-2) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Antimony Dithiocarbmate	15890-25-2	7 - 13

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Antimony Dithiocarbmate (CAS 15890-25-2)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

Distillates (petroleum), Hydrotreated Heavy Naphthenic (CAS 64742-52-5)
Hydrotreated Heavy Synthetic Base Oil (CAS 64742-65-0)
Molybdenum Disulphide (CAS 1317-33-5)

US. New Jersey Worker and Community Right-to-Know Act

Antimony Dithiocarbmate (CAS 15890-25-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Antimony Dithiocarbmate (CAS 15890-25-2)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 02-22-2017

Version # 02

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Bibliography Not available.