



SAFETY DATA SHEET

KLONDIKE BIO HEES AW 46 Fire Resistant Full Synthetic

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Identifier KLONDIKE BIO HEES AW 46 Fire Resistant Full Synthetic
Other means of identification Synthetic Fire Resistant, Environmentally Friendly
Product Code Biodegradable Synthetic Hydraulic Fluid
Recommended use See Technical Data Sheet
Recommended restrictions None Known

Manufacturer/Importer/Supplier/Distributor Information

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

2. HAZARDS IDENTIFICATION

Physical hazards Not classified.
Health hazards Not classified.
OSHA defined hazards Not classified.
Label elements
Hazard symbol None.
Signal word None.
Hazard statement The mixture does not meet the criteria for classification.
Prevention Observe good industrial hygiene practices.
Response Wash hands after handling.
Storage Store away from incompatible materials.
Disposal Not applicable.
Hazard(s) not otherwise classified (HNOC) Not classified.
Supplemental information
Not applicable.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Hazardous components Chemical name	Common name and synonyms	CAS number	%
Synthetic organic ester		N/D	40 - 60
Phosphorothioic acid, O,O,O-triphenyl ester		597-82-0	2.5 - 10
Benzenepropanoic acid, 3,5-bis(1,1-dimethyl ethyl)-4-hydroxy-, thiodi-2,1-ethanedyl ester		41484-35-9	0.1 - 1

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Occupational Exposure Limits for constituents are listed in Section 8.

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4. FIRST AID MEASURES

Inhalation	Move to fresh air, 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 eyes with water as a precaution. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If swallowed, do NOT induce vomiting. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Foam. Dry chemicals. Carbon dioxide (CO ₂). Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	Water. Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Combustible. See also section 10.
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	In case of fire and/or explosion do not breathe fumes. Cool containers exposed to heat with water spray and remove container, if no risk is involved.
Specific methods	In the event of fire and/or explosion do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection, see section 8 of the MSDS.
Methods and materials for containment and cleaning up	The product is immiscible with water and will spread on the water surface. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Scrub the area with detergent and water. Prevent entry into waterways, sewer, basements or confined areas. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
Environmental precautions	Never return spills in original containers for re-use. For waste disposal, see section 13 of the MSDS. Local authorities should be advised if significant spillages cannot be contained. Prevent further leakage or spillage if safe to do so.

7. HANDLING AND STORAGE

Precautions for safe handling	To avoid thermal decomposition, do not overheat. Avoid prolonged or repeated contact with skin. Avoid prolonged exposure. Adequate ventilation should be provided so that exposure limits are not exceeded.
Conditions for safe storage, including any incompatibilities	Keep away from heat and sources of ignition. Store in closed original container in a dry place. Store away from incompatible materials (see Section 10 of the MSDS).

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
Synthetic organic ester		5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Synthetic organic ester	TWA	5 mg/m ³	Respirable.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
		10 mg/m ³	Mist.

Biological limit values

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

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment
Eye/face protection

Chemical goggles are recommended.

Hand protection

Nitrile gloves are recommended.

The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material. Use protective gloves.

Other

Normal work clothing (long sleeved shirts and long pants) is recommended.

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Use respiratory equipment with combination filter, type (ABEK)2-P3

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Wash hands after handling. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES
Appearance

Physical state Liquid.

Form Liquid.

Color Blonde.

Odor Oily.

Odor threshold Not available.

pH Not applicable.

Kinematic viscosity Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point > 572.0 °F (> 300.0 °C)

Evaporation rate 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	Not available.
Relative density	0.92
Relative density temperature	77 °F (25 °C)
Solubility(ies)	Insoluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Other information	
Flammability class	Combustible IIIB estimated
Pour point	-16.6 °F (-27 °C)

10. STABILITY AND REACTIVITY

Reactivity	Strong oxidizing agents.
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 decomposition temperature. Avoid temperatures exceeding the flash point. Eliminate all sources of ignition. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides. Decomposition may yield acrolein.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Ingestion	Not classified.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	Not available.
Eye contact	Not classified.

Symptoms related to the physical, chemical and toxicological characteristics	None known.
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Information on toxicological effects

Acute toxicity	Ingestion of large amounts may produce gastrointestinal disturbances including irritation, nausea, and diarrhea.
Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Not classified.
Respiratory sensitization	Not classified.
Skin sensitization	Not classified.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.
Reproductive toxicity	Not classified.

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Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not classified.
Chronic effects	When workers are facing concentrations above the exposure limit, Prolonged inhalation may be harmful.

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.

Product	Species	Test Results
KLONDIKE BIO Synthetic HEES (CAS Mixture) Algae	EC50 Algae	> 100 mg/l, 72 Hours, Based on test data for structurally similar materials.
Crustacea	EC50 Daphnia	> 100 mg/l, 48 Hours, Based on test data for structurally similar materials.

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

Persistence and degradability	>90% of the mixture consists of ingredient(s) : readily biodegradable. OECD Test Guideline 301 B
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Mobility in general	The product is immiscible with water and will spread on the water surface.
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. Do not discharge into drains, water courses or onto the ground.
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 a hazardous material by DOT.
IATA	Not regulated as a dangerous good.
IMDG	Not regulated as a dangerous good.
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. Pennsylvania RTK - Hazardous Substances**

Synthetic organic ester

US. Rhode Island RTK

Not regulated.

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.

US federal regulations**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

SARA 304 Emergency release notification

Not regulated.

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**

No

SARA 311/312 Hazardous chemical

No

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

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

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

Food and Drug Administration (FDA)

Not regulated.

US state regulations**US. Massachusetts RTK - Substance List**

Synthetic organic ester

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

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

Synthetic organic ester

US. Rhode Island RTK

Not regulated.

US. California Proposition 65California 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.

16. OTHER INFORMATION

Issue date 02-27-2020

Revision date

Version # 1.1

Further information According to the "HMIS implementation manual (third edition)", "each employer is responsible for determining the appropriate protective equipment that employees are to wear when handling chemicals in the workplace."

HMIS® ratings Health: 1
Flammability: 1
Physical hazard: 0

Disclaimer This document complements the technical sheets but does not replace them. The information contained herein is based on our knowledge of the concerned product on the date indicated. It is offered in good faith. Furthermore, the regulatory requirements referred to must not be considered as exhaustive. They do not exempt in any form the user from knowing and applying all regulations related to the possession and use of the product. The user takes as their sole responsibility the implementation of precautions relating to storage and their use of the product. The information in the sheet was written based on the best knowledge and experience currently available.

Revision Information Identification: Product use
Ecological information: Persistence and degradability