SAFETY DATA SHEET

Issue Date: 15 May 2015 Revision date: 15 May 2015 Version 1

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

Product identifier
Product Name: **Bio-Metal Cool HD (Water Emulsifiable Metal Working Fluid)**+ biocide
Other means of identification
Product code: **86811, 86813, 86814, 86816**
CAS NO: Mixture
Synonyms: None

Recommended use of the chemical and restrictions on use
Recommended Use: Biobased Water Emulsifiable Cutting Fluid for Metal Working

Details of the supplier of the safety data sheet
Supplier and Manufacture
Renewable Lubricants, Inc.
476 Griggy RD NE, P.O. Box 474
Hartville, Oh 44632
Phone: (330) 877-9982
Fax: (330) 877-2266
www.renewablelube.com, www.renewablelubricants.com

2. Hazard(s) identification

Hazard Classification

Health Hazards

Serious Eye Damage/Eye Irritation	Category 2B

Unknown toxicity

Acute toxicity, oral	0.0 %
Acute toxicity, dermal	0.0 %
Acute toxicity, inhalation, vapor	56 %
Acute toxicity, inhalation, dust or mist	55 %

Label Elements:

Hazard Symbol: No symbol

Signal Word: Warning

Hazard Statement: Causes eye irritation.

Precautionary Statement:

Prevention: Wash thoroughly after handling.

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.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None identified.

3. Composition/information on ingredients

Chemical name	CAS number	Percent by Weight
Mineral oil	64742-54-7	25 - 40%
Biobased ester mixture	Not determined.	50 - 70%
Hexylene glycol	107-41-5	0.5 - 1%

The mineral oil contained in this material may be described by one or more of the following CAS Nos.: 64742-54-7, 64742-65-0, 64742-55-8, and 64742-56-9.

Trade secret information: A specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Ingestion: Treat symptomatically. Get medical attention.

Inhalation: Remove exposed person to fresh air if adverse effects are observed.

Skin Contact: Wash with soap and water. Get medical attention if symptoms occur. Launder contaminated clothing before reuse.

Eye contact: 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.

Most important symptoms/effects, acute and delayed

Symptoms: See section 11.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically.

5. Fire-fighting measures

General Fire Hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: CO2, Dry chemical or Foam. Water can be used to cool and protect exposed material.

Unsuitable extinguishing media: Not determined.

Specific hazards arising from the chemical: See section 10 for additional information.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations.

Methods and material for containment and cleaning up: Dike far ahead of larger spill for later recovery and disposal. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas.

Environmental Precautions: Avoid release to the environment. Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling: Avoid contact with eyes. Observe good industrial hygiene practices. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid environmental contamination.

Maximum Handling Temperature: 60 °C 140 °F

Conditions for safe storage, including any incompatibilities: Store away from incompatible materials. See section 10 for incompatible materials.

Maximum Storage Temperature: 45 °C 113 °F

8. Exposure controls/personal protection

Control Parameters:

Occupational Exposure Limits

Chemical name	type	Exposure Limit Values		Source
Mineral oil - Inhalable fraction.	TWA		5 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
Mineral oil - Inhalable fraction.	TWA		5 mg/m3	US. ACGIH Threshold Limit Values (02 2012)
Mineral oil - Mist.	REL		5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Mineral oil - Mist.	STEL		10 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Mineral oil - Mist.	PEL		5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Hexylene glycol	Ceiling	25 ppm	125 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Hexylene glycol	Ceiling	25 ppm		US. ACGIH Threshold Limit Values (02 2012)
Hexylene glycol	Ceil_Time	25 ppm	125 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)

Appropriate engineering controls:	Mechanical ventilation or local exhaust ventilation may be required. Use material in well ventilated area only. No special requirements under ordinary conditions of use and with adequate ventilation.

Individual protection measures, such as personal protective equipment

General information:	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory and eye protection may be needed in special circumstances, such as poorly ventilated spaces, heating, evaporation of liquids from large surfaces, spraying of mists, mechanical generation of dusts, drying of solids, etc.
Eye/face protection:	Safety glasses. If potential for splash or mist exists, wear chemical goggles or faceshield.

Skin Protection

Hand Protection:	Use nitrile or neoprene gloves. Use good industrial hygiene practices. In case of skin contact, wash hands and arms with soap and water.
Other:	No data available.
Respiratory Protection:	Use respirator with a combination organic vapor and dust/mist cartridge. Use respirator if irritation is experienced or if the recommended exposure limit is exceeded. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator. Under normal use conditions, respirator is not usually required. Use appropriate respiratory protection if exposure to dust particles, mist or vapors is likely. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.
Hygiene measures:	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Dark
Odor:	Pungent
Odor threshold:	No data available.
pH:	< 10
Freezing point:	No data available.
Boiling Point:	No data available.
Flash Point:	> 482 °F (250 °C) (COC)
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.

Vapor pressure:	No data available.
Vapor density:	No data available.
Relative density:	0.92 - .93 60.1 °F (15.6 °C)
Solubility(ies)	
Solubility in water:	Emulsifiable in water.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	85 cSt @ 40°C

Other information

Bulk density:	7.7 lb/gal 77 °F (25 °C)
Pour Point Temperature:	5 °F (-15 °C)

10. Stability and reactivity

Reactivity:	Not applicable.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Will not occur.
Conditions to avoid:	Do not expose to excessive heat, ignition sources, or oxidizing materials.
Incompatible Materials:	Strong oxidizing agents.
Hazardous Decomposition Products:	Thermal decomposition or combustion may generate smoke, carbon monoxide, carbon dioxide , nitrogen oxides, and other products of incomplete combustion. Thermal decompositon may generate potassium oxides and other potassium containing compounds.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	No data available.
Ingestion:	No data available.
Skin Contact:	No data available.
Eye contact:	Causes eye irritation.

Information on toxicological effects

Acute toxicity

Oral

Product**:** Ingestion can cause central nervous system effects such as headache, dizziness, drowsiness, and generalized weakness. ATEmix > 10,000 mg/kg.

Dermal

Product**:** Prolonged or widespread contact with this material could result in the absorption of potentially harmful amounts.
Not classified for acute toxicity based on available data.

Inhalation

Product**:**	Not classified for acute toxicity based on available data.

Skin Corrosion/Irritation:

Product**:**	Classification: Not irritating (Read across); Rabbit. Remarks: Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, and cracking of the skin. Not classified as a primary skin irritant.

Serious Eye Damage/Eye Irritation:

Product**:**	Classification: Slightly irritating. (Read across); Rabbit. Remarks: Causes eye irritation.

Respiratory sensitization:

No data available

Skin sensitization:

Product**:**	Remarks: Risk of sensitization or allergic reactions among sensitive individuals.
Mineral oil	Classification: Not a skin sensitizer. (Read across)
Mineral oil	Classification: Not a skin sensitizer. (Read across)
Hexylene glycol	Remarks: This product contains hexylene glycol which has been reported to cause dermatitis in sensitive individuals.

Specific Target Organ Toxicity - Single Exposure:

Product**:**	If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract.
Mineral oil	If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract.
Hexylene glycol	May cause irritation to the mucous membranes and upper respiratory tract.

Aspiration Hazard:

Mineral oil	Material can be aspirated into the lungs during the act of swallowing or vomiting. This could result in severe injury to the lungs and death.

Chronic Effects

Carcinogenicity:

Product**:**	This product contains mineral oils which are severely refined and not considered carcinogenic. All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test.

Mineral oil	All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test. This product contains mineral oils which are severely refined and not considered carcinogenic.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ Cell Mutagenicity:
Not expected to be a germ cell mutagen, based on assessment of the components.

Reproductive toxicity:
Not expected to be a reproductive toxicant, based on assessment of the components.

Specific Target Organ Toxicity - Repeated Exposure:
Not expected to cause organ damage from repeated exposure.

12. Ecological information

Ecotoxicity

Fish

Mineral oil	LC 50 (Fathead Minnow, 4 d): > 100 mg/l
Hexylene glycol	LC 50 (Fathead Minnow, 4 d): > 5,000 mg/l
Biobased ester mixture	LC 50 (Fathead Minnow, 4 d): > 5,000 mg/l

Aquatic Invertebrates

Mineral oil	EC 50 (Water flea (Daphnia magna), 2 d): > 10,000 mg/l EC 50 (Water flea (Daphnia magna), 21 d): > 10 mg/l NOEC (Water flea (Daphnia magna), 21 d): 10 mg/l
Biobased ester mixture	EC 50 (Water flea (Daphnia magna), 2 d): > 10,000 mg/l EC 50 (Water flea (Daphnia magna), 21 d): > 10 mg/l NOEC (Water flea (Daphnia magna), 21 d): > 10 mg/l
Hexylene glycol	EC 50 (Water flea (Daphnia magna), 2 d): > 2,000 mg/l

Toxicity to Aquatic Plants

Mineral oil	EC 50 (Green algae (Scenedesmus quadricauda), 3 Days): > 100 mg/l
Biobased ester mixture	EC 50 (Green algae (Scenedesmus quadricauda), 3 Days): > 1000 mg/l

Toxicity to soil dwelling organisms
No data available

Sediment Toxicity

No data available

Toxicity to Terrestrial Plants

No data available

Toxicity to Above-Ground Organisms

No data available

Toxicity to microorganisms

Hexylene glycol	EC 50 (Bacteria, 0.1 d): > 100 mg/l

Persistence and Degradability

Biodegradation

Product	Expected to be biodegradable
Mineral oil	OECD TG 301 B, 31 %, 28 d, Inherently biodegradable.
Hexylene glycol	Miscellaneous, 95 %, 28 d, Readily biodegradable
Biobased ester mixture	OECD TG 301 B, > 60 %, 28 d, Readily biodegradable

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Product	Not expected to bioaccumulate

Partition Coefficient n-octanol / water (log Kow)

Hexylene glycol	Log Kow: 0.58 (Measured)

Mobility:

No data available

Other Adverse Effects: No data available.

13. Disposal considerations

Disposal instructions: Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Dispose of packaging or containers in accordance with local, regional, national and international regulations. Empty container contains product residue which may exhibit hazards of product.

Contaminated Packaging: Container packaging may exhibit hazards.

14. Transport information

DOT

Not regulated.

IMDG

Not regulated.

IATA

Not regulated.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

None known.

The DOT shipping information in this section is based on a bulk container. Please review the accompanying shipping papers for the correct shipping descriptions based the size of the package. Shipping descriptions may vary based on mode of transport, quantities, temperature of the material, package size, and/or origin and destination. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material. During transportation, steps must be taken to prevent load shifting or materials falling, and all relating legal statutes should be obeyed. Review classification requirements before shipping materials at elevated temperatures.

15. Regulatory information

US Federal Regulations

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

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4)

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 311/312 Classifications

(Acute) Health Hazards

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

None present or none present in regulated quantities.

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

None present or none present in regulated quantities.

Inventory Status

Australia (AICS)

All components are in compliance with chemical notification requirements in Australia.

Canada (DSL/NDSL)

All components are in compliance with the Canadian Environmental Protection Act and are present on the Domestic Substances List.

China (IECSC)

All components of this product are listed on the Inventory of Existing Chemical Substances in China.

European Union
All components are in compliance with the EC Seventh amendment Directive 92 /32/EEC.

Japan (ENCS)
All components are in compliance with the Chemical Substances Control Law of Japan.

Korea (ECL)
All components are in compliance in Korea.

New Zealand (NZIoC)
This product requires notification before sale in New Zealand.

Philippines (PICCS)
All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).

Switzerland (SWISS)
All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.

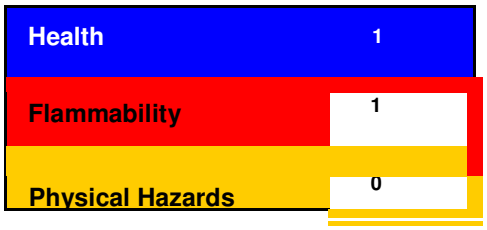
Taiwan (TCSCA)
All components of this product are listed on the Taiwan inventory.

United States (TSCA)
All components of this material are on the US TSCA Inventory.

The information that was used to confirm the compliance status of this product may deviate from the chemical information shown in Section 3.

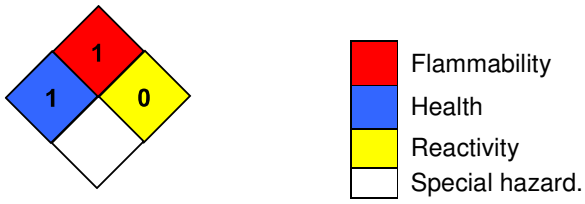
16.Other information, including date of preparation or last revision

HMIS Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date:	02/19/2016
Version #:	2.0
Source of information:	Internal company data and other publically available resources.
Further Information:	Contact supplier (see Section 1)

Disclaimer:

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.