MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2300
Gaithersburg, Maryland 20899-2300

SRM Number: 1084a
MSDS Number: 1084a
SRM Name: Wear Metals in Lubricating Oil
Date of Issue: 11 October 2007

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Description: A unit of SRM 1084a consists of five 5 ml amber borosilicate ampoules each containing approximately 1.6 g of the oil blend.

Substance: Lubricating Base Oil

Other Designations: Lubricating Base Oil (mineral oil; distillates [petroleum], hydrotreated middle).

2. COMPOSITION AND INFROMATION ON HAZARDOUS INGREDIENTS

Component	CAS Registry	EC Number (EINECS)	Mass Fraction (%)
Lubricating Base Oil	64742-46-7	265-148-2	100 %

[(a)] Hazardous components 1 % or greater; carcinogens 0.1 % or greater are listed in compliance with OSHA 29 CFR 1910.1200. SRM 1084a contains trace amounts of 14 different metals, each in a concentration of less than 1.0% (see Certificate of Analysis 1084a); no MSDS information is required under current OSHA regulations.

EC Classification (assigned): Carcinogen Category 2

EC Hazard Symbol: T

EC Risk (R): R45

EC Safety (S): S45, S53

EC Risk/Safety Phrases: See Section 15 "Regulatory Information"

3. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 1 Fire = 1 Reactivity = 0

Major Health Hazards: None listed.

Potential Health Effects

Inhalation: Acute exposure by inhalation of mists of insoluble oils are not usually harmful to the respiratory tract. Chronic exposure may cause fibrotic nodules and lipid pneumonia.

Skin Contact: Prolonged or repeated contact may result in irritation or dermatitis.

Eye Contact: Slight irritation with acute exposure.

Ingestion: Ingestion of this material is unlikely under normal laboratory conditions. Lung damage may occur if aspirated into the lungs and may be fatal. Symptoms include coughing, difficulty breathing and pulmonary edema. Mineral oils may cause gastrointestinal disturbances such as diarrhea.

Listed as a Carcinogen/Potential Carcinogen:

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens.		X
In the International Agency for Research on Cancer (IARC) Monographs.		X
By the Occupational Safety and Health Administration (OSHA).		X

4. First Aid Measures

Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing have qualified personnel give artificial respiration. Get immediate medical attention.

Skin Contact: Wash exposed skin with soap and water for at least 15 minutes. Remove any contaminated clothing.

Eye Contact: Immediately flush eyes with copious amounts of water for at least 15 minutes. Get immediate medical attention.

Ingestion: Aspiration hazard. If swallowed DO NOT induce vomiting. If vomiting occurs, keep head lower than hips to prevent aspiration. Seek immediate medical attention. If not breathing have qualified personnel give artificial respiration.

5. Fire Fighting Measures

Fire and Explosion Hazards: Slight fire hazard.

Extinguishing Media: Regular dry chemical, carbon dioxide, regular foam.

Fire Fighting: Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

Flash Point (°C) : >93.3 °C (>200 °F)
Method Used: TCC

Autoignition Temp. (°C): >210 °C (>410 °F)

Flammability Limits in Air
UPPER (Volume %): Not applicable.
LOWER (Volume %): Not applicable.

6. Accidental Release Measures

Occupational Release: Absorb small spills with sand or other non-combustible materials. Collect spilled material and place in an appropriate container for disposal

Disposal: Refer to Section 13, "Disposal Considerations".

7. Handling and Storage

Storage: Store and handle in accordance with all current regulations and standards. Store in a cool dry place.

Safe Handling Precautions: See Section 8, "Exposure Controls and Personal Protection".

8. Exposure Controls and Personal Protection

Exposure Limits:
Mineral Oil Mist:
OSHA (PEL): 5 mg/m^3 TWA (oil mist)
NIOSH: 5 mg/m^3 recommended TWA (10 hours)
NIOSH: 10 mg/m^3 recommended STEL
ACGIH STEL: 10 mg/m^3

Ventilation: Use a local exhaust ventilation system. Ensure compliance with applicable exposure limits

Respirator: A respiratory protection program that meet OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed if workplace conditions warrant a respirator. Refer to the "NIOSH Guide to the Selection and Use of Particulate Respirators Certified under 42 CFR 84" for selection and use of respirators certified by NIOSH.

Eye Protection: Wear safety goggles. An eye wash station should be readily available near areas of use.

Personal Protection: Wear appropriate protective clothing and chemically resistant gloves to prevent skin exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Component: Lubricating Base Oil

Appearance and Odor: Clear, colorless, oily liquid. Faint petroleum odor.

Specific Gravity: 0.795 – 0.8735

Boiling Point: 205 °C to 400 °C

Volatility: 19.2

Water Solubility: < 0.01 % @ 25 °C

Solvent Solubility: Soluble in hydrocarbons.

10. STABILITY AND REACTIVITY

Stability: X Stable _____ Unstable

Conditions to Avoid: Avoid contact with incompatible materials, heat, flame, sparks and other sources of ignition.

Incompatible Materials: Oxidizers.

Fire/Explosion Information: See Section 5, "Fire Fighting Measures".

Hazardous Decomposition: Thermal decomposition produces oxide of carbon and aldehydes.

Hazardous Polymerization: _____ Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry: X Inhalation _____ Skin X Ingestion

Toxicity Data: Not available

Health Effects (Acute and Chronic): See section 3: "Hazards Identification" for potential health effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: Not available.

Environmental Summary: The material is NOT expected to leach through the soil and accumulates very little in the bodies of living organisms.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with all applicable federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and ICAO/IATA: This material is not regulated.

15. REGULATORY INFORMATION

U.S. REGULATIONS

CERCLA Sections 102a/1103 (40 CFR 302.4): Not regulated.

SARA Title III Sections 302 (40 CFR 355.30): Not regulated.
SARA Title III Sections 304 (40 CFR 355.40): Not regulated.
SARA Title III Sections 313 (40 CFR 372.65): Not regulated.
SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE:	Yes
CHRONIC:	Yes
FIRE:	No
REACTIVE:	No
SUDDEN RELEASE:	No

OSHA Process Safety (29 CFR 1910.119): Not regulated

STATE REGULATIONS

California Proposition 65: Not regulated.

CANADIAN REGULATIONS

WHMIS Classification: Not determined

EUROPEAN REGULATIONS

EC Classification (Assigned): Carcinogen Category 2.
(EC Classification my be inconsistent with independently researched data).

Danger/Hazard Symbol: T – Toxic.

EC Risk Phrases:

R45 May cause cancer.

EC Safety Phrases:

S45 In case of accident or if you feel unwell, seek medical advice immediately (show label if possible).
S53 Avoid exposure – obtain special instructions before use.

National Inventory Status

U.S. Inventory (TSCA): Listed on inventory.

TSCA 12 (b) Export Notification: Not listed.

16. OTHER INFORMATION

Sources: MDL Information Systems, Inc., MSDS *Hydrotreated Middle Distillate*, 14 June 2007

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use as a guide in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.