

# 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: 1085b  
MSDS Number: 1085b  
SRM Name: Wear Metals in Lubricating Oil

Date of Issue: 13 January 2009

MSDS Coordinator: Mario Cellarosi  
Telephone: 301-975-2200  
FAX: 301-926-4751  
E-mail: SRMMSDS@nist.gov

Emergency Telephone ChemTrec:  
1-800-424-9300 (North America)  
+1-703-527-3887 (International)

**Description:** A unit of SRM 1085b consists of five 5 mL amber borosilicate ampoules each containing approximately 1.2 g of a blend of constituent elements in a base oil at a nominal concentration of 300 mg/kg; and five ampoules, each containing approximately 1.2 g of a matching base oil intended for use as an analytical blank and for matrix matching.

**Substance:** Lubricating Base Oil

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

## 2. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

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

**NOTE** - Hazardous components 1 % or greater; carcinogens 0.1 % or greater are listed in compliance with OSHA 29 CFR 1910.1200. SRM 1085b contains trace amounts of different metals, each in a concentration of less than 1.0% (see Certificate of Analysis 1085b); no MSDS information is required for the trace elements 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:** Central nervous system depression, aspiration hazard, suspected cancer hazard in animals.

### Potential Health Effects

**Inhalation:** Respiratory tract irritation. Symptoms of drunkenness, headache, dizziness, drowsiness, coma.

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

**Eye Contact:** Slight irritation with acute exposure.

**Ingestion:** Same effects reported as in inhalation, gastrointestinal irritation, digestive disorders, diarrhea, symptoms of drunkenness, aspiration hazard.

**Listed as a Carcinogen/Potential Carcinogen:**

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

---

**4. FIRST AID MEASURES**

---

**Inhalation:** If adverse effects occur, remove to uncontaminated area. If not breathing have qualified personnel give artificial respiration. Seek 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. Seek 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 (> 200 °F)

**Method Used:** TCC

**Autoignition Temp. (°C):** > 210 (> 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: 5 mg/m<sup>3</sup> TWA

NIOSH: 5 mg/m<sup>3</sup> recommended TWA (10 hours)

NIOSH: 10 mg/m<sup>3</sup> recommended STEL

ACGIH STEL: 10 mg/m<sup>3</sup>

**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.

**Density (g/cm<sup>3</sup>):** 0.79 – 0.87

**Boiling Point (°C):** 205 to 400 (401 °F to 752 °F)

**Freezing Point (°C):** –38 to –1 (–36 °F to 30 °F)

**Volatility (%):** 19.2

**Water Solubility:** < 0.01 % @ 25 °C

**Solvent Solubility:** Soluble in hydrocarbons.

---

## 10. STABILITY AND REACTIVITY

---

**Stability:**   X   Stable        Unstable

Stable at normal temperatures and pressure.

**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

**Petroleum Distillate Toxicity Data:**

**Carcinogen Status:** Category 2 (EC)

**Health Effects:** See section 3: "Hazards Identification" for potential health effects.

**Target Organs:** Central nervous system.

**Medical Conditions Aggravated by Exposure:** Skin disorders, respiratory disorders.

---

## 12. ECOLOGICAL INFORMATION

---

**Ecotoxicity Data:** Not expected to leach through the soil or the sediment. 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.

OSHA Process Safety (29 CFR 1910.119): 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

### STATE REGULATIONS

California Proposition 65: Not regulated.

### CANADIAN REGULATIONS

WHMIS Classification: Not determined.

### EUROPEAN REGULATIONS

#### EC Classification:

T – Toxic. Carcinogen Category 2.

#### 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:** ChemAdvisor, Inc., MSDS *Hydrotreated Middle Distillate*, 13 September 2007

**Disclaimer:** Physical and chemical data contained in this MSDS are provided only for use 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.