

# MATERIAL SAFETY DATA SHEET

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## 1. SUBSTANCE AND SOURCE IDENTIFICATION

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

RM Number: 2771  
MSDS Number: 2771  
RM Name: Sulfur in Diesel Fuel  
Blend Stock

Date of Issue: 27 July 2010

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**Description:** SRM 2771 is intended for use in the evaluation of methods, preparation of calibration mixes, and the calibration of instruments used in the determination of total sulfur in diesel fuel oils or materials of a similar matrix. A unit of SRM 2771 consists of an amber bottle containing approximately 100 mL of diesel fuel blend stock.

**Substance:** Diesel Fuel Blend Stock

**Other Designations:** Diesel Fuel Blend Stock (hydrotreated middle distillate; straight run middle, hydrotreated)

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## 2. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

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<b>Substance:</b>	<b>Hydrotreated Middle Distillate</b>
<b>CAS Number:</b>	64742-46-7
<b>EC Number (EINECS):</b>	265-148-2
<b>Nominal Concentration (%):</b>	100
<b>EC Classification Assigned:</b>	Carcinogen Category 2
<b>EC Hazard Symbol:</b>	T
<b>EC Risk (R No.):</b>	45
<b>EC Safety (S No.):</b>	45,53

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## 3. HAZARDS IDENTIFICATION

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

**Major Health Hazards:** Respiratory tract discomfort. Central nervous system depression.

**Potential Health Effects**

**Inhalation:** Vapors or mist may cause respiratory irritation and a cough. Headache, dizziness, nausea, vomiting, and loss of coordination may result from high levels of inhalation exposure.

**Skin Contact:** Skin contact with may cause redness and irritation. Prolonged or repeated contact may cause drying, cracking, and blistering of the skin with open sores.

**Eye Contact:** Eye contact with liquid or vapor may cause slight irritation. No data listed for chronic exposure.

**Ingestion:** Ingestion may cause gastrointestinal irritation, digestive disorders, diarrhea, and symptoms of drunkenness. Aspiration hazard.

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

Yes	No	
_____	<u>  X  </u>	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).

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#### 4. FIRST AID MEASURES

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<b>Inhalation:</b>	If inhaled, move the victim to fresh air. If breathing is difficult, give oxygen; if the victim is not breathing, give artificial respiration by qualified personnel. Obtain immediate medical assistance.
<b>Skin Contact:</b>	Remove contaminated shoes and clothing. Rinse affected area with large amounts of water followed by washing the area with soap and water. Obtain medical assistance if necessary.
<b>Eye Contact:</b>	Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Obtain medical assistance if irritation persists.
<b>Ingestion:</b>	<b>DO NOT</b> induce vomiting. If vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get immediate medical attention.

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#### 5. FIRE FIGHTING MEASURES

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<b>Fire and Explosion Hazards:</b>	Hydrotreated middle distillate is a slight fire hazard.
<b>Extinguishing Media:</b>	Use water spray, dry chemical, carbon dioxide, regular foam, or sand. <b>DO NOT</b> use direct water stream. For large fires, use regular foam or flood with fine water spray.
<b>Fire Fighting:</b>	Move containers from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Avoid using straight water streams. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).
<b>Flash Point (°C):</b>	105.6 °C
<b>Method Used:</b>	Closed Cup – ASTM D 93 (A)-94
<b>Autoignition Temp. (°C):</b>	> 210 °C
<b>Flammability Limits in Air</b>	
<b>Upper Explosion Limit (UEL):</b>	6.0 % to 16.1 % (approximate)
<b>Lower Explosion Limit (LEL):</b>	0.9 % to 2.5 % (approximate)

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#### 6. ACCIDENTAL RELEASE MEASURES

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<b>Occupational Release:</b>	Avoid heat, flames, sparks, and other sources of ignition. Absorb small spills with sand or other non-combustible material. Collect spilled material in an appropriate container for disposal. For large spills, isolate the hazard area, and keep unnecessary people away. <b>DO NOT</b> touch spilled material. Notify fire authorities and appropriate federal, state, and local agencies. If spill is made into navigable waters or adjoining shorelines, notify the National Response Center at 800-424-8802 (USA).
<b>Disposal:</b>	Refer to Section 13, "Disposal Considerations".

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## 7. HANDLING AND STORAGE

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<b>Storage:</b>	Store and handle in accordance with all current regulations and standards. Store tightly capped bottle under normal laboratory conditions away from direct sunlight, and sulfur-containing fumes.
<b>Safe Handling Precautions:</b>	See Section 8, "Exposure Controls and Personal Protection".

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## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

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<b>Exposure Limits:</b>	<b>Hydrotreated Middle Distillate:</b> No established exposure limits for this product.
<b>Ventilation:</b>	Use an explosion-resistant local exhaust ventilation system. Ensure compliance with applicable exposure limits.
<b>Respirator:</b>	A respirator is <b>NOT</b> required under normal conditions and adequate ventilation. For conditions of frequent use or heavy exposure where exposure exceeds exposure limits, respirator protection may be needed. 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.
<b>Eye Protection:</b>	Wear safety goggles. <b>DO NOT</b> wear contact lenses in the laboratory. An eye wash station should be readily available near areas of use.
<b>Personal Protection:</b>	Wear appropriate protective clothing and neoprene or nitrile gloves to prevent skin contact.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Component:</b>	<b>Hydrotreated Middle Distillate</b>
<b>Appearance and Odor:</b>	Colorless to white oily liquid. Faint petroleum odor.
<b>Density @ 15 °C:</b>	835.4 kg/m <sup>3</sup>
<b>Density @ 60 °F:</b>	37.8 API
<b>Kinematic Viscosity @ 37.8 °C:</b>	4.590 × 10 <sup>-6</sup> m <sup>2</sup> /s (4.590 cSt)
<b>Boiling Point Range:</b>	205 °C to 400 °C (401 °F to 752 °F)
<b>Water Solubility:</b>	Negligible.

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## 10. STABILITY AND REACTIVITY

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<b>Stability:</b>	<u>  X  </u> Stable <u>      </u> Unstable
	Stable at normal storage and handling conditions of temperature and pressure. Flammable liquid and vapor. Vapor can cause flash fire.
<b>Conditions to Avoid:</b>	Avoid heat, flames, sparks, and other sources of ignition.
<b>Incompatible Materials:</b>	Hydrotreated middle distillate is incompatible with strong oxidizing materials.
<b>Fire/Explosion Information:</b>	See Section 5, "Fire Fighting Measures".

**Hazardous Decomposition:** Oxides of carbon, sulfur, other hydrocarbons, and low oxygen levels.

**Hazardous Polymerization:** \_\_\_\_\_ Will Occur                        X   Will Not Occur

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## 11. TOXICOLOGICAL INFORMATION

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**Route of Entry:**       X   Inhalation                        X   Skin                        X   Ingestion

**Component:** Hydrotreated Middle Distillate

**Toxicity Data:** Rat, Oral LD<sub>50</sub>: 7400 mg/kg  
Rabbit, Dermal LD<sub>50</sub>: > 2000 mg/kg

**Mutagenic, Tumorigenic**

**Reproductive Data:** Animal studies have confirmed an association between cancer and inhalation exposure to whole diesel exhaust.

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

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## 12. ECOLOGICAL INFORMATION

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**Ecotoxicity Data:** Fish (Pimephales promelas): 35 mg/L [flow through] 96 hr LC<sub>50</sub>.

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## 13. DISPOSAL CONSIDERATIONS

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**Waste Disposal:** Dispose in accordance with all applicable federal, state, and local regulations. Subject to disposal regulations, U.S. EPA 40 CFR 262.

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## 14. TRANSPORTATION INFORMATION

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**U.S. DOT and IATA:** Not regulated by DOT.

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## 15. REGULATORY INFORMATION

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**U.S. Regulations:** SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE: Yes.

CHRONIC: Yes.

FIRE: No.

REACTIVE: No.

SUDDEN RELEASE: No.

**CANADIAN Regulations:** Not determined.

**EUROPEAN Regulations**

**EC Classification:** Carcinogen Category 2.

**EC Hazard Symbol:** T                      Toxic

**EC Risk Phrases:** R45                      May cause cancer.

**EC Safety Phrases:** S45                      In case of accident or if feeling ill, seek medical advice immediately (show label where 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.

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## 16. OTHER INFORMATION

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**Sources:** CHEMAdvisor, Inc., MSDS *Hydrotreated Middle Distillate*, March 08, 2010.

**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.