

# 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

RM Number: 8590  
MSDS Number: 8590  
RM Name: High Sulfur Gas Oil Feed

Date of Issue: 23 January 2012

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+1-703-527-3887 (International)

**Description:** Reference Material (RM) 8590 is vacuum distillate which is intended for use in determining the activity of FCC Catalysts by Microactivity Test D3907-87 [1] primarily by petroleum refining industries and catalysts suppliers for this industry. A unit of RM 8590 consists of 946 mL (1 quart) of High Sulfur Gas Oil Feed (Amoco Oil No. FCC 893).

**Substance:** High Sulfur Gas Oil Feed

**Other Designations:** Vacuum distillates (petroleum)

## 2. HAZARDS IDENTIFICATION

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

**Major Health Hazards:** Possible cancer hazard in humans.

**Physical Hazards:** There are no known physical hazards associated with this material.

**Potential Health Effects:**

**Inhalation:** No information available on significant adverse effects.

**Skin Contact:** Prolonged or repeated skin contact may cause irritation of the hair follicles and block the sebaceous glands. Comedones, perifollicular papules and pustules (oil boils) may develop. Melanosis may appear later. Repeated or prolonged contact may cause dermatitis due to defatting.

**Eye Contact:** No information available on significant adverse effects.

**Ingestion:** No information available on significant adverse effects.

**Listed as a Carcinogen/Potential Carcinogen**

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

<sup>(a)</sup>IARC - Group 3 - Not classifiable as to their carcinogenicity to humans.

## 3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Component <sup>(a)</sup>	CAS Registry	EC Number (EINECS)	Nominal Concentration
Vacuum Distillates (petroleum)	70592-78-8	274-685-1	100 %

<sup>(a)</sup>RM 8590 is a mixture containing a trace amount of sulfur. The trace amounts found in this SRM do not require individual MSDS information under current OSHA regulations, only hazardous components 1 % or greater; carcinogens 0.1 % or greater are listed. For the actual concentrations see the Report of Investigation.

**EC Classification:** T

**EC Risk (R No.):** 45

**EC Safety (S No.):** 45, 53

**EC Risk/Safety Phrases:** Refer to Section 15, "Regulatory Information".

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#### 4. FIRST AID MEASURES

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**Inhalation:** If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration or oxygen by qualified personnel. Seek immediate medical attention.

**Eye Contact:** Immediately flush eyes, including under the eyelids with copious amounts of water for at least 15 minutes. Seek immediate medical attention.

**Skin Contact:** Rinse affected area with copious amounts of water followed by washing with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Seek medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**Ingestion:** If a large amount is swallowed, seek immediate medical attention.

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#### 5. FIRE FIGHTING MEASURES

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**Fire and Explosion Hazards:** Slight fire hazard.

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

**Fire Fighting:** Avoid inhalation of material or combustion byproducts. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

**Flash Point:** >93.3°C (199.9 °F)

**OSHA Flammability Class:** IIIB

**Autoignition Temp:** Not available.

**Flammability Limits in Air**

UPPER (Volume %): Not available.

LOWER (Volume %): Not available.

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#### 6. ACCIDENTAL RELEASE MEASURES

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**Occupational Release:** Stop leak if possible without personal risk. Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Keep unnecessary people away, isolate hazard area and deny entry. Keep out of water supplies and sewers.

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

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#### 7. HANDLING AND STORAGE

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**Handling and Storage:** Store and handle in accordance with all current regulations and standards.

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

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#### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

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**Exposure Limits:** 2500 mg/m<sup>3</sup> (vendor-supplied)

**Ventilation:** Use local exhaust ventilation system. Ensure compliance with applicable exposure limits. Refer to the ACGIH document, *Industrial Ventilation, a Manual of Recommended Practices*.

**Respirator:** If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29 CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

**Eye Protection:** Wear splash resistant safety goggles. An eyewash station should be readily available near areas of use.

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

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance and Odor:** Dark liquid, distinct petroleum odor

**Pour Point:** 26.7 °C (80.1 °F)

**Boiling Point:** 270–600 °C (518–1112 °F)

**Vol ABP:** 414.4 °C (778 °F)

**Refractive Index:** 1.4772 (67 °C)

**Gravity, API:** 27.6

**Vol ABP:** 100 %

**Aniline Point:** 83.3 °C (182 °F)

**Viscosity, CS +:** 4.42 (98.8 °C, 210 °F)

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## 10. STABILITY AND REACTIVITY

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**Stability:**         Stable                     Unstable

Stable at normal temperatures and pressure.

**Conditions to Avoid:** Avoid heat, flames, sparks, and other sources of ignition. Avoid contact with incompatible materials. Keep out of water supplies and sewers.

**Incompatible Materials:** Oxidizing materials.

**Fire/Explosion Information:** See Section 5, “Fire Fighting Measures”.

**Hazardous Decomposition:** Oxides of sulfur, carbon.

**Hazardous Polymerization:**         Will Occur         Will Not Occur

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## 11. TOXICOLOGICAL INFORMATION

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**Route of Entry:**         Inhalation                     Skin                     Ingestion

**Toxicity Data:**

Rat, Oral LD<sub>50</sub>: 4320 mg/kg

Rat, Dermal LD<sub>50</sub>: >2000 mg/kg

Rabbit, Dermal LD<sub>50</sub>: >2000 mg/kg

**Target Organ(s):** No data available.

**Health Effects (Acute and Chronic):** See Section 2, “Hazards Identification” for potential health effects.

**Medical Conditions Aggravated by Exposure:** Respiratory disorders.

**Mutagen/Teratogen:** No data available.

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## 12. ECOLOGICAL INFORMATION

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**Ecotoxicity Data:**

Fish Toxicity: Zebrafish (*Brachydanio rerio*) LC<sub>50</sub> (semi-static): 48 mg/L (96 h)

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## 13. DISPOSAL CONSIDERATIONS

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

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## 14. TRANSPORTATION INFORMATION

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**U.S. DOT and IATA:** This material is not regulated by DOT or IATA (flash point 93.3 °C).

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## 15. REGULATORY INFORMATION

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### U.S. REGULATIONS

CERCLA Sections 102a/103 (40 CFR 302.4): Not regulated for this material.  
SARA Title III Section 302 (40 CFR 355.30): Not regulated for this material.  
SARA Title III Section 304 (40 CFR 355.40): Not regulated for this material.  
SARA Title III Section 313 (40 CFR 372.65): Not regulated for this material.  
OSHA Process Safety (29 CFR 1910.119): Not regulated for this material.  
SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

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

### STATE REGULATIONS

California Proposition 65: Not listed.

### CANADIAN REGULATIONS

WHMIS Classification: Not provided for this material.

### EUROPEAN REGULATIONS

#### EC Classification:

T: Toxic

#### EC Risk (R No.):

R45 – May cause cancer.

#### EC Safety (S No.):

S45 – In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S53 – Avoid exposure – Obtain special instructions before use.

### NATIONAL INVENTORY STATUS

**U.S. Inventory (TSCA):** Listed.

#### TSCA 12(b)

**Export Notification:** Not listed.

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## 16. OTHER INFORMATION

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**Sources:** American Society of Testing and Materials (ASTM); ASTM Research Report, File No. RR D32-10-16, *Supporting Data for D3907, Method of Testing Fluid Cracking Catalysts by Microactivity Test*, 1985 June 24.

ChemAdvisor, Inc., MSDS *Vacuum Distillates*, 06 April 2011.

EC; European Chemical Substance Information System (ESIS), *Distillates (petroleum), Vacuum*, CAS No. 70592-78-8; available at <http://esis.jrc.ec.europa.eu/> (accessed Jan 2012).

**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 reference values for this material are given in the NIST Report of Investigation.