



MATERIAL SAFETY DATA SHEET

MSDS # F3

SINCLAIR JET FUELS

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: Jet Fuel

APPLICATIONS: Fuel

SYNONYMS: Commercial Jet Fuel, Jet A, Turbine Fuel, Aviation Fuel, JP - 8

CAS REGISTRY #: #50854-94-9, 8008-20-6

CHEMICAL FAMILY: Liquid Hydrocarbon

EMERGENCY PHONE: CHEMTREC – (800) 424-9300 or (703) 527-3887 (collect)

SUPPLIER: Sinclair Oil Corporation
P.O. Box 30825
Salt Lake City, Utah 84130

TELEPHONE / FAX: (888) 340-3466 / (801) 524-2740

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENTS:	CAS#	Typical wt.%
Jet Fuel (kerosene)	8008-20-6	100
Jet Fuel	50854-94-9	100
Cyclohexane	110-82-7	3.5
Benzene	71-43-2	0.9
Toluene	108-88-3	0.8
Xylene	1330-20-7	0.9
Naphthalene	91-20-3	0.5

3. HAZARDS IDENTIFICATION

APPEARANCE: Colorless

PHYSICAL STATE: Liquid

ODOR: Kerosene odor

EMERGENCY OVERVIEW: Can cause irritation to the eyes, skin and respiratory tract. Combustible liquid and vapor. Harmful or fatal if swallowed. May cause lung damage if aspirated. Toxic to aquatic organisms.

POTENTIAL HEALTH EFFECTS: Trauma and burns secondary to explosions and fires can result. In enclosed spaces, oxygen may be displaced by vapors or consumed by combustion. Incomplete combustion will produce carbon monoxide and other toxic gases.

INHALATION: Overexposure may cause weakness, headache, nausea, confusion, blurred vision, drowsiness and other central nervous system effects. Extremely high-level exposure may result in dizziness, irregular heartbeat, coma, collapse and death.

EYE CONTACT: Contact may cause eye irritation. Naphthalene vapor causes eye irritation.

SKIN CONTACT: Contact may irritate or burn skin. Absorption through the skin may cause symptoms of intoxication.

INGESTION: Based on acute toxicity studies in animals, Jet Fuel is practically non-toxic by ingestion. If aspirated (liquid enters lung) following ingestion, severe lung irritation and pulmonary edema (swelling of lung tissue) may occur. Aspiration may also result in central nervous system depression or excitement. Serious, permanent lung damage may result. Nausea, vomiting, diarrhea and abdominal pain may occur following ingestion.

CARCINOGENICITY: Possible cancer hazard.

4. FIRST AID MEASURES

INHALATION: Remove from further exposure. If unconsciousness occurs, seek immediate medical assistance. If breathing stops, use mouth-to-mouth resuscitation.

EYE CONTACT: Flush immediately with water for at least 15 minutes. Seek medical attention promptly.

SKIN CONTACT: Discard contaminated leather articles. Wash contact areas with soap and water. Launder contaminated clothing before reuse.

INGESTION: DO NOT INDUCE VOMITING. Get medical assistance promptly. (Note to Physician: Material, if aspirated into lungs, may cause chemical pneumonitis. Treat appropriately.)

5. FIRE FIGHTING MEASURES

FLASH POINT (°F): 110°F - 130°F (closed cup)

FLAMMABLE LIMITS: LEL – 0.6 UEL – 5.6

AUTOIGNITION TEMPERATURE: 440°F - 560°F

FLAMMABILITY CLASSIFICATION: Combustible Liquid

GENERAL HAZARD: Incomplete burning can produce carbon monoxide. Vapors will be released above the flash point and when mixed with air, the mixture can burn or explode in confined spaces, if exposed to sources of ignition.

FIRE FIGHTING INSTRUCTIONS: Use foam, dry chemical, CO₂, water fog or vaporizing liquid (Halon). Keep personnel removed from and upwind of fire. Cool adjacent structures and storage drums with water spray. Prevent runoff from fire control dilution entering streams or drinking water supply. Run off may create fire and/or explosion hazard in sewers.

FIRE FIGHTING EQUIPMENT: HAZARDOUS COMBUSTION PRODUCTS: Use of SCBA in enclosed or confined spaces, or as other wise needed (Bunker gear).

Hazardous Decomposition Products: May produce carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

LAND SPILL: Treat spill as an oil spill. Eliminate all sources of ignition. Remove leaking containers to a safe area. Contain and remove by mechanical means. Guard against contamination of water supplies. Spilled material, made solid by using an inert substance, may be scraped up from the ground. Report spills to appropriate authorities. Dispose of in accordance with Federal, State, and Local regulations.

WATER SPILL: Treat spill as an oil spill. Spill may be removed from water with boom and vacuuming equipment. Report spills to appropriate authorities. Dispose of in accordance with Federal, State, and Local regulations.

7. HANDLING AND STORAGE

HANDLING / STORAGE: Ground and bond all transfer and storage equipment. Drums must be grounded/bonded/equipped with self-closing valves, pressure vacuum bungs and flame arrestors. Do not use as a cleaner or solvent. Do not siphon by mouth. Store away from ignition sources in a cool area. Containers should be labeled: **FLAMMABLE - VAPOR HARMFUL**. When handling, use non-sparking tools and equipment.

NOTE: Make sure Tanker is grounded before loading.

8. EXPOSURE CONTROLS, RESPIRATORY & PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide ventilation sufficient to prevent exceeding recommended exposure limit or build-up of explosive concentrations of vapor in air. Use explosion-proof equipment. Use away from all ignition sources.

PERSONAL PROTECTION:

PROTECTIVE CLOTHING: Use full-face shield, chemical goggles, impervious gloves, and boots.

RESPIRATOR: Approved respiratory protection must be used when vapor or mist concentrations are unknown or exceed the TLV. Avoid prolonged or repeated breathing of vapor or mists.

OCUPATIONAL EXPOSURE LIMITS

COMPONENT	LIMIT	TWA	STEL	CEILING	NOTATION	OTHER
Jet Fuel (Kerosene)	ACGIH_TLV	200mg/M ³			A3	Skin, CNS
Cyclohexane	OSHA_PEL	300ppm				
Cyclohexane	ACGIH_TLV	100ppm				CNS
Benzene	OSHA_PEL	1ppm	5ppm			
Benzene	OSHA_Z2	10ppm		25ppm		
Benzene	ACGIH_TLV	0.5ppm	2.5ppm		A1	Skin
Toluene	OSHA_PEL	200ppm		300ppm		
Toluene	ACGIH_TLV	50ppm			A4	Skin, CNS
Xylene	OSHA_PEL	100ppm				
Xylene	ACGIH_TLV	100ppm	150ppm		A4	Irritation
Naphthalene	OSHA_PEL	10ppm				
Naphthalene	ACGIH_TLV	10ppm	15ppm		A4	Skin

A1= Confirmed Human Carcinogen

A3= Confirmed Animal Carcinogen with Unknown Relevance to Humans

A4= Not Classified as a Human Carcinogen

CNS= Central Nervous System

Skin= Absorption through the skin may contribute to overall exposure

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE: Liquid

COLOR: Colorless

DENSITY/SPECIFIC GRAVITY (g/ml): 0.77 – 0.84

VAPOR DENSITY (air=1): 4.5

VAPOR PRESSURE: <1 PSIA

BOILING POINT/RANGE: 360°F

SOLUBILITY IN WATER: No

VISCOSITY: N/A/F

pH : N/A

FREEZING POINT: -40°F

10. STABILITY AND REACTIVITY

GENERAL: This product is stable

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID: Strong acids, alkalis and oxidizers. Also avoid heat, sparks, flame and static electricity.

HAZARDOUS DECOMPOSITION: Incomplete burning can produce carbon monoxide.

11. TOXICOLOGICAL INFORMATION

SYSTEMIC: Petroleum-derived fuels and fuel oils are complex and variable mixtures of hydrocarbons. In general, the more viscous the mixture, the less toxic it will be. At high level exposures, humans experience multiple organ failures, some of which may be due to hypoxia and secondary to the failure of other organ systems. In humans' kidney failure has been noted only at high, acute levels of exposures, and appears reversible. Liver enzymes may be transiently elevated. At lower level exposures, most acute health effects are reversible. Inhalation, ingestion and dermal contact can expose people. Frequently, people are exposed by combined dermal and inhalation exposure.

ACUTE:

Inhalation: : Headaches, confusion, disorientation, blurred vision occur with inhalation. Higher exposures may cause hallucinations, CNS excitation, drowsiness, CNS depression. Seizure and coma occur from very high exposures and death may result from respiratory depression. ECG changes, cardiac arrhythmias, tachycardia, shock and cardiovascular collapse can occur. Pneumonia, pulmonary edema and hemorrhages can occur.

Coordination and concentration deficits have been reported in humans after one hour of exposure. Fatigue, depressed mood, lack of initiative and sleep disturbances have been reported in factory workers. Attention and sensorimotor speed were impaired and EEG changes were noted. Workers may complain of palpitations and heaviness in the chest.

Ingestion: Central nervous system, cardiovascular, and respiratory effects have been reported with acute exposures to various hydrocarbon fuels and oils similar to those reported with inhalation. Nausea, vomiting, cramping and diarrhea may occur.

Eye: Conjunctivitis and burning, watery eyes have been reported in acute exposures to various hydrocarbon fuels and oils.

Skin: Mild erythema to full thickness chemical burns have occurred after prolonged exposure to various hydrocarbon fuels and oils. High levels of skin exposure resulted in death of animals.

CHRONIC: Chronic exposure results in kidney damage in male rats. However, this damage appears to be related to a protein produced in large amounts in male rats, but not in humans or female rats. Occupational exposures in petroleum refining are considered Group 2A (probably carcinogenic) by IARC.

Naphthalene, a component of Jet Fuel, can cause hemolytic anemia, especially in those with a deficiency of Glucose-6 phosphate dehydrogenase (G6PD). Cataracts and other ocular effects have been reported after oral ingestions.

Contains benzene, which is suspected to cause cancer in humans and also can be toxic to the blood and blood forming organs.

12. DISPOSAL INFORMATION

RCRA: Disposal of this product or material contaminated with this material may be regulated under RCRA due to the characteristic of ignitability.

EPA Hazard Class: Acute Hazard/Chronic Hazard/Fire Hazard

Dispose of in accordance with Federal, State, and Local regulations.

13. TRANSPORT INFORMATION

DOT (Department of Transportation):

PROPER SHIPPING NAME: Fuel, Aviation, Turbine Engine (Jet-A), JP-8

HAZARD CLASS: 3

IDENTIFICATION NUMBER: UN 1863 PG III

NAERG96 NUMBER: 128

14. REGULATORY INFORMATION

CERCLA (Comprehensive Environmental Response Compensation and Liability Act): Naphthalene, Benzene, and Toluene are hazardous substances under RCRA and therefore are subject to emergency notification requirements.

SARA TITLE III (Superfund Amendments and Reauthorization Act): Naphthalene and Toluene are subject to SARA Title III, Sections 311 and 312, which require MSDS reporting and Hazardous Chemical Inventory reporting.

Naphthalene and Toluene are also subject to SARA Title III, Section 313, which requires Chemical Release reporting.

The following components are subject to OSHA 29CFR1910.1200 Hazard Communication Standard:

Benzene* 1
Cyclohexane 2
Naphthalene 2
Toluene 2
Xylene 2

(1)* Benzene has been identified by NIOSH, IARC, NTP as a human carcinogen. Refer to 29CFR1910.1000 Table Z-2 and 29CFR1910.1028 for information.

(2) Consult MSDS or NIOSH Occupational Guidelines for more information.

15. OTHER INFORMATION

NFPA 704/HMIS:

Health – 0 Flammability – 2 Reactivity – 0
(0 = insignificant, 1 = slight, 2 = moderate, 3 = high, 4 = extreme)

REVISION SUMMARY:

Complete review of MSDS, December 2005.

THIS PRODUCT MATERIAL SAFETY DATA SHEET PROVIDES HEALTH AND SAFETY INFORMATION. THE PRODUCT SHOULD BE USED IN APPLICATIONS CONSISTENT WITH THIS PRODUCT LITERATURE. FOR ANY OTHER USES, EXPOSURES SHOULD BE EVALUATED SO THAT APPROPRIATE HANDLING PRACTICES AND TRAINING PROGRAMS CAN BE ESTABLISHED TO ENSURE SAFE WORKPLACE OPERATIONS.

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