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An Axel Johnson, Inc. Company

MATERIAL SAFETY DATA SHEET

#2 FUEL OIL

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SECTION 1 - MATERIAL IDENTIFICATION		24 HOUR EMERGENCY INFO.	
PRODUCT / CHEMICAL NAME	#2 FUEL OIL	Sprague: 603-431-1000 Chemtrec: 800-424-9300	
PRODUCT / CHEMICAL SYNONYMS	HOME HEATING OIL, DIESEL OIL, OFF-HIGHWAY FUEL OIL ROAD FORCE DIESEL	HMS / NFPA HAZARD RATING	
CHEMICAL FAMILY / FORMULA	BRANCHED CHAIN PETROLEUM HYDROCARBONS/VARIABLE	4=EXTREME 3=SERIOUS 2=MODERATE 1=SLIGHT 0=MINIMAL	
MATERIAL USE OR OCCURENCE	DISTILLATION PRODUCT		

SECTION 2 - INGREDIENTS						
COMPONENT	%	C.A.S. NO.	OSHA PEL	OSHA STEL	ACGIH TLV	OTHER
NO. 2 FUEL OIL Consisting of a complex mixture of parafinic, olefinic, and naphthenic hydrocarbons, plus fused polycyclic hydrocarbons (C10 and higher) as benzene solubles.	>99	68476-30-2	5 mg/M ³ (mineral oil mist)		5 mg/M ³	
THIS PRODUCT CONTAINS 4% SULFUR CONTENT OR LESS. Polycyclic Hydrocarbons	<1	130498-29-2	0.2 mg/M ³ (benzene solubles as coal tar pitch volatiles).		0.2 mg/M ³	

SECTION 3 - PHYSICAL DATA			
BOILING POINT:	340°-675°F (171°-357°C)	% VOLATILITY BY VOLUME:	Greater than 50%
VAPOR PRESSURE (mm Hg):	1 mm Hg @ 68 F (20 C)	VAPOR DENSITY (AIR = 1):	Greater than 5.
SPECIFIC GRAVITY (H2O = 1):	.876	SOLUBILITY IN WATER:	Insoluble.
EVAPORATION RATE (n-butyl acetate = 1): None Determined.			
APPEARANCE & ODOR: Green, slightly viscous liquid, petroleum odor.			

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA	
FLASH POINT: 126-204 F (52-96 C) (Tag. Closed Cup)	AUTOIGNITION TEMP: 494 F (257 C)
FLAMMABILITY LIMITS IN AIR (% BY VOL.)	LEL: 0.6 UEL: 7.5
EXTINGUISHING MEDIUM: Foam, carbon dioxide, dry chemical, halon, and water fog.	
SPECIAL FIRE FIGHTING PROCEDURES: Use supplied-air breathing equipment for enclosed areas. Cool exposed containers with water spray. Continue water spray until entire container contents are cool. Withdraw immediately in the event of rising sound from venting safety devices or any discoloration of storage tank due to fire (subject to the fire chief's directions).	
UNUSUAL FIRE AND EXPLOSION HAZARDS: Do not mix or store with strong oxidants. Do not store or pour near sources of ignition. Do not pressurize, cut, heat, weld, or expose to sources of ignition. Vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back.	

SECTION 5 - HEALTH DATA

TOXICOLOGICAL TEST DATA:	Oral Rat; LD50	RESULTS: 14,500 mg/kg (NIOSH RTECS July 1993)
ACUTE HEALTH EFFECTS		CHRONIC HEALTH EFFECTS
INHALATION	Mist or vapor may cause respiratory tract irritation. CNS depressant. High levels may cause giddiness, headache, dizziness, nausea, vomiting, and lack of coordination, narcosis, stupor, coma, and unconsciousness.	Prolonged exposure may cause dizziness, weakness, weight loss, anemia, nervousness, and pains in the limbs, peripheral numbness, and paresthesia. Renal failure possible. Degenerative changes of liver and kidneys may occur after prolonged exposure to high concentrations.
INGESTION	Irritation, giddiness, vertigo, headache, anesthetic stupor, CNS depression, coma and death.	No data available
SKIN CONTACT	Drying, cracking and defatting dermatitis. Direct contact may cause extreme irritation with severe erythema and edema with blistering and open sores. Absorption of large amounts may result in narcosis.	Repeated or prolonged exposure may cause irritation, dermatitis, and a rash of pimples and spots.
EYE CONTACT	Irritation is possible. However, animal studies indicate that irritation is unlikely.	No data available.

FIRST AID



PROCEDURES

INHALATION: Remove from vapor to fresh air. If breathing has stopped give artificial respiration. Maintain airway and blood pressure and administer oxygen if available. Keep affected person warm and at rest. Qualified personnel should perform administration of oxygen. Get medical attention immediately.

INGESTION: **DO NOT INDUCE VOMITING or give anything by mouth to an unconscious person.** When vomiting occurs, keep persons head lower than head to prevent pulmonary aspiration. Get medical attention immediately.

SKIN CONTACT: Remove fuel soaked clothing. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15-20 minutes). If irritation develops, seek medical aid.

EYE CONTACT: Flush eyes immediately with large amounts of water, occasionally lifting upper and lower lids until no evidence of chemical remains (approximately 15-20 minutes). If irritation develops, seek medical aid.

TOXICOLOGICAL DATA

Kerosene generally contains benzene which has been designated a carcinogen by the National Toxicology Program (NTP), the International agency for Research on Cancer and the Occupational Safety and Health Administration. Benzene may produce blood changes that include reduced platelets, red blood cells, and white blood cells; also aplastic anemia, and acute nonlymphatic leukemia. Benzene has produced fetal death in laboratory animals and caused chromosome changes in humans and mutation changes in cells of other organisms. Health effects attributable to benzene aren't known to occur in humans exposed to kerosene. Kerosene has caused kidney injury in male rats only. No comparable health hazard for kidney disease is known to occur in humans. An epidemiology study of workers exposed to two isomers of trimethylbenzene had symptoms of nervousness, tension and anxiety, and asthmatic bronchitis. In addition, after inhalation of 60 ppm measured as hydrocarbon vapor, the works' peripheral blood showed a tendency to hypochromic anemia and a deviation from normal in the coagulability of the blood. Exposure of pregnant rats during gestation to toluene at levels of 250 ppm and higher produces some maternal toxicity and fetotoxicity. A lifetime inhalation study in rats did not show any toxic effects even at the high dose of 300 ppm. Behavioral signs of hearing loss were observed in rats exposed to toluene subchronically at levels of 1000 ppm or more. Comparable effects have not been reported in humans.

SECTION 6 - REACTIVITY DATA

STABILITY:	Stable under normal temperatures and pressures.
HAZARDOUS POLYMERIZATION:	Hazardous polymerization has not been known to occur under normal temperatures and pressures.
CONDITIONS TO AVOID:	May be ignited by heat, sparks, or flame. Vapors may travel to a source of ignition and flash back. Vapor explosion hazard indoors, outdoors, or in sewers.
INCOMPATIBLES:	May explode or react violently when exposed to oxidizing materials.
TYPICAL DECOMPOSITION PRODUCTS:	Thermal decomposition may release various hydrocarbons and hydrocarbon derivatives including carbon dioxide, water, organic acids, and aldehydes.

SECTION 7 - SPECIAL PROTECTION

RESPIRATORY PROTECTION:	Use with adequate ventilation. For large spills or when completing work in confined spaces, use a mask with an organic vapor cartridge or positive pressure air supplied (SCBA) unit.
VENTILATION	LOCAL EXHAUST: MECHANICAL (General):
EYE PROTECTION:	Splash goggles or shields with safety glasses
PROTECTIVE GLOVES:	Neoprene, PVC
OTHER PROTECTIVE CLOTHING OR EQUIPMENT:	Employee must wear appropriate impervious clothing and equipment to prevent repeated or prolonged skin contact with this substance.

SECTION 8 - SPECIAL PRECAUTIONS

PRECAUTIONS FOR SAFE HANDLING AND STORAGE:	Avoid excessive inhalation or skin contact. Isolate from sources of ignition.
SPILL AND LEAK PROCEDURES:	<p>Shut off ignition sources (no smoking, shut off flames or flares in hazard area). Isolate hazard area and restrict entry. If properly trained, proceed with the following measures:</p> <ol style="list-style-type: none"> 1. For small spills, take up with sand or other absorbent material and place into containers for later disposal; and, 2. For large spills, dike far ahead of spill to prevent entrance into watercourses and/or ground water. Observe local, state, and federal governmental regulations.
WASTE DISPOSAL METHOD	<ol style="list-style-type: none"> 1. Under EPA RCRA (40 CFR 261.21) If this product becomes a waste material intended for disposal and has a flash point below 140 F, it would be ignitable hazardous waste (waste code number D001). Refer to latest EPA or state regulations regarding proper disposal. 2. Under EPA RCRA (40 CFR 261.21) If this product becomes a waste material intended for disposal and has a TCLP benzene concentration greater than 0.5 PPM, it would be considered a toxic waste (waste code number D018). Refer to latest EPA or state regulations regarding proper disposal.



SECTION 9 - DOT HAZARDOUS MATERIAL INFORMATION

PROPER SHIPPING NAME: FUEL OIL (#2)		LABEL: FLAMMABLE	REQUIRED PLACARDING: FLAMMABLE OR COMBUSTIBLE / 1993
HAZARD CLASS: CLASS 3 (Flammable liquid)	PACKING GROUP (P.G.): III	N.A./U.N. NUMBER: NA 1993	
HAZARDOUS SUBSTANCE / RQ: NOT AVAILABLE		SHIPPING DESCRIPTION: FUEL OIL (#2), 3, NA 1993, PG III	
NOTE: This product may be re-classed as a combustible liquid when shipped domestically, by land only. If re-classed as a combustible liquid, this product is unregulated by DOT when shipped in non-bulk quantities.			

SECTION 10 - EPA SARA TITLE III INFORMATION

SECTION 311/312	ACUTE: YES	CHRONIC: YES	
HAZARD CLASSIFICATION:	FIRE: YES	PRESSURE: NO	REACTIVE: NO

SECTION 11 - REMARKS

None

SECTION 12 - ADDITIONAL REGULATORY DATA

REPORTABLE COMPONENTS: FEDERAL EPA	%	SARA RQ	CERCLA RQ	RCRA NO.
#2 FUEL OIL	100	-----	-----	
* Under EPA RCRA (40 CFR 261.21) If this product becomes a waste material intended for disposal and has a flash point below 140 F, it would be considered ignitable hazardous waste (waste code number D001) with a SARA / CERCLA RQ of 100 pounds.				D001*
** Under EPA RCRA (40 CFR 261.21), if this product becomes a waste material intended for disposal and has a TCLP benzene concentration greater than 0.5 PPM, it would be considered a toxic waste (waste code number D018) with a SARA / CERCLA RQ of 10 pounds.				D018**

The information contained herein is based on data available at this time and is believed to be accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Since information contained herein may be applied under conditions beyond our control and with which we may be unfamiliar, no responsibility is assumed for the results of its use. The person receiving this information shall make his own determination of the suitability of the material for his particular purposes.