

SDS – SAFETY DATA SHEET

1. Identification

Product Identifier: #2 FUEL OIL

Synonyms: HOME HEATING OIL, DIESEL OIL, OFF-HIGHWAY FUEL OIL, ROAD FORCE DIESEL

Chemical Formula: Not applicable to mixtures

Recommended Use of the Chemical and Restrictions On Use: Distillation Product

2. Hazard(s) Identification

Classification of the Substance or Mixture:

Flammable Liquids - Category 3

Acute Toxicity, Inhalation - Category 4

Skin Irritation – Category 2

Eye Irritation – Category 2B

Carcinogenicity - Category 2

Specific Target Organ Toxicity (Single Exposure) – Category 3

Aspiration Hazard – Category 1

Chronic Aquatic Toxicity – Category 2

Risk Phrases:

R10: Flammable

R20: Harmful by inhalation.

R35: Irritating to eyes.

R38: Irritating to skin.

R45: May cause cancer.

R51 / 53: Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

R65: Harmful: may cause lung damage if swallowed.

Label Elements:

Trade Name: #2 FUEL OIL

Signal Word: Danger



Hazard Statements:

H226: Flammable liquid and vapor.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H320: Causes eye irritation.
H332: Harmful if inhaled.
H351: Suspected of causing cancer.
H373: May cause damage to organs through prolonged or repeated exposure.
H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements:

P210: Keep away from heat / sparks / open flames / hot surfaces. No smoking.
P260: Do not breathe dust / fume / gas / mist / vapors / spray.
P280: Wear protective gloves / protective clothing / eye protection / face protection.
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician.
P331: Do not induce vomiting.
P501: Dispose of contents / container to an approved waste disposal plant.

3. Composition / Information on Ingredients

CAS Number: 68476-30-2
EC Number: 270-671-4
Index Number: 649-225-00-1
Molecular Weight: Not applicable to mixtures

Ingredient	CAS Number	Percent	Hazardous	Chemical Characterization
#2 Fuel Oil	68476-30-2	99 - 100%	Yes	Substance
Polycyclic Hydrocarbons *	130498-29-2	< 1%	Yes	Substance

* Total Sulfur: <1.0 wt%

4. First-aid Measures

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 person's head lower than hips 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: Check for and remove any contact lenses. 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.

5. Fire-fighting Measures

Fire: Flammable Liquid and Vapor!

Explosion: When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces.

Fire Extinguishing Media: Foam, Carbon Dioxide, Dry Chemical, Halon, and Water Fog.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. 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.) Vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back. Runoff to sewer may cause fire or explosion hazard.

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Environmental Precautions and Methods and Materials for Containment and Cleaning Up: Keep out of sewers, drainage areas and waterways. If properly trained, proceed with the following measures:

1. For small spills, take up with sand or other absorbent material and place into containers for later disposal.
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.

7. Handling and Storage

Precautions for Safe Handling and Conditions for Safe Storage, Including Any Incompatibilities:

Protect against physical damage and excessive temperatures. Store in a well-ventilated location, away from any area where the fire hazard may be acute that complies with NFPA 30 "Flammable and Combustible Liquid Code." Separate from incompatibles, including strong oxidizers.

Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid.) Observe all warnings and precautions listed for the product. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition: they may explode and cause injury or death.

The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks."

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when this product is loaded into tanks previously containing low flash point products (such as gasoline) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

8. Exposure Controls / Personal Protection

Airborne Exposure Limits:

For #2 Fuel Oil (68476-30-2):

ACGIH Threshold Limit Value (TWA): 100 mg/m³ TWA (aerosol and vapor, as total hydrocarbons) 8 h (skin)

For Polycyclic Hydrocarbons (130498-29-2): benzene soluble as coal tar pitch volatiles

OSHA Permissible Exposure Limit (PEL): 0.2 g/m³

ACGIH Threshold Limit Value (TLV): 0.2 mg/m³

Ventilation System: Indoors: A system of local and / or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details. Use explosion-proof equipment. / Outdoors: Work upwind.

Personal Respirators (NIOSH Approved): A respirator is not needed under normal and intended conditions of use. If the exposure limit is exceeded and engineering controls are not feasible, use a mask with an organic vapor cartridge or positive pressure air supplied (SCBA) unit. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134).

Skin Protection: Gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure - Neoprene, PVC.

Eye Protection: Use chemical safety goggles and / or a full face shield where splashing is possible.

Hygiene Measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9. Physical and Chemical Properties

Appearance: Green, slightly viscous liquid

Odor: Petroleum odor

Odor Threshold: Not determined

pH: No information found

% Volatiles by volume @ 21C (70F): Greater than 50%

Melting Point: Not determined

Boiling Point / Boiling Range: 340 - 675F (171 - 357C)

Flash Point: 126 - 204F (52 - 96C) Closed Cup

Evaporation Rate (BuAC=1): Slow; varies with conditions

Flammability: Flammable Liquid and Vapor!

Upper / Lower Flammability or Explosive Limits: Upper - 7.5 / Lower - 0.6

Vapor Pressure (mm Hg): 1 mm Hg @ 68F (20C)

Vapor Density (Air=1): Greater than 5

Relative Density: 0.86 g/mL

Solubility: Insoluble

Partition Coefficient: n-octanol / water: > 3.3 as log Pow

Auto-ignition Temperature: 494F (257C)

Decomposition Temperature: Will evaporate or boil and possibly ignite before decomposition occurs

Viscosity: 1 to 6 mm²/s range reported for No.1 or No.2 diesel at ambient temperatures

10. Stability and Reactivity

Reactivity and / or Chemical Stability: Stable under ordinary conditions of use and storage at normal temperatures and pressures.

Possibility of Hazardous Reactions and Conditions to Avoid: Heat, flames, ignition sources and incompatibles.

Incompatible Materials: May explode or react violently when exposed to oxidizing materials.

Hazardous Decomposition Products: Thermal decomposition may release various hydrocarbons and hydrocarbon derivatives including carbon dioxide, water, organic acids, and aldehydes.

11. Toxicological Information

Potential 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.

Ingestion: Irritation, giddiness, vertigo, headache, anesthetic stupor, CNS depression, coma and death.

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.

Eye Contact: Irritation is possible. However, animal studies indicate that irritation is unlikely.

Chronic Exposure:

Inhalation: 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.

Skin Contact: Repeated or prolonged exposure may cause irritation, dermatitis, and a rash of pimples and spots.

Carcinogenicity: Confirmed animal carcinogen with unknown relevance to humans. Chronic dermal application of certain middle distillate streams contained in Diesel Fuel No. 2 resulted in an increased incidence of skin tumors in mice. This material has not been identified as carcinogen by NTP, IARC, or OSHA. Diesel exhaust is a probable cancer hazard based on tests with laboratory animals.

Reproductive Toxicity: This product is not reported to have any reproductive toxicity effects.

Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System): No data available.

Specific Target Organ Toxicity - Repeated Exposure (Globally Harmonized System): No data available.

Aspiration Respiratory Organs Hazard: The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs,) severe lung damage, respiratory failure and even death.

Acute Toxicity:

Oral Rat LD50 - RESULTS: 14,500 mg/kg (NIOSH RTECS July 1993)

12. Ecological Information

Ecotoxicity: Very toxic to aquatic life with long lasting effects.
For #2 Fuel Oil (68476-30-2): 96 Hr LC50 Pimephales promelas - 35 mg/L (flow-through)

Persistence and Degradability: No information available.

Bioaccumulative Potential: No information available.

Mobility in Soil: No information available.

Other adverse effects: No information available.

13. Disposal Considerations

Under EPA RCRA (40 CFR 261.21):

1. 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.)
2. 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.)

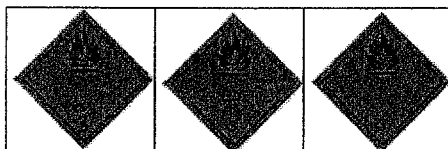
Refer to latest EPA or state regulations regarding proper disposal.

14. Transport Information

UN Number: UN1993

UN Proper Shipping Name: FUEL OIL (#2)

Packing Group: III



DOT

IMDG

IATA

Land Transport ADR/RID and GGVS/GGVE (Cross Border / Domestic)

Transport Hazard Class(es): 3

Maritime Transport IMDG/GGVSea
Transport Hazard Class(es): 3
Marine Pollutant: Yes

Air Transport ICAO-TI and IATA-DGR
Transport Hazard Class(es): 3

Transport in Bulk according to Annex II of MARPOL 73/78 and the IBC Code

Special Precautions for User: 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.

15. Regulatory Information

Chemical Inventory Status

Ingredient	TSCA	EC	Canada - DSL
#2 Fuel Oil (68476-30-2)	Yes	Yes	Yes

Federal, State & International Regulations

Ingredient	SARA 302		SARA 313		CERCLA	RCRA
	RQ	TPQ	List Chemical	Catg.		
#2 Fuel Oil (68476-30-2)	No	No	No	No	No	D001*, D018**

SARA 311/312	Acute: Yes	Chronic: Yes	Fire: Yes	Pressure: No	Reactivity: No
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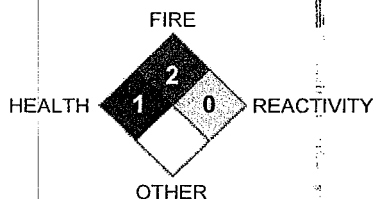
* Under EPA RCRA (40 CFR 261.21) If this product becomes a waste material intended for disposal and has a flash point below 140 F, it would be considered ignitable hazardous waste (waste code number D001) with a SARA / CERCLA RQ of 100 pounds.

** 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.

16. Other Information

HMIS / NFPA Hazard Rating:

- 4=EXTREME
- 3= SERIOUS
- 2= MODERATE
- 1=SLIGHT
- 0=MINIMAL



Effective Date: 11/01/13 – Modified aspiration instructions; modified Airborne Exposure Limits

Previous Revisions:

05/01/13 – Standardized for GHS and REACH

9/01, 07/02, 06/05, 10/08, 1/11

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