SDS – SAFETY DATA SHEET

1. Identification

Product Identifier: ULTRA LOW SULFUR HEATING OIL
Synonyms:
#2 Heating Oil
#2 Fuel Oil
Chemical Formula: Not applicable to mixtures
Recommended Use of the Chemical and Restrictions On Use: Fuel
Manufacturer / Supplier: Sprague Operating Resources LLC
185 International Drive, Suite 200, Portsmouth, NH 03801
Emergency Phone Number: SPRAGUE: 603-431-1000; CHEMTREC: 800-424-9300

2. Hazard(s) Identification

Classification of the Substance or Mixture:
Flammable Liquids - Category 3
Acute Toxicity, Oral - Category 4
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: ULTRA LOW SULFUR HEATING OIL

Signal Word: Danger

Hazard Statements:
H226: Flammable liquid and vapor.
H302: Harmful if swallowed.
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.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves / protective clothing / eye protection / face protection.
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician.
P313: Get medical advice / attention.
P331: Do not induce vomiting.
P391: Collect spillage.
P501: Dispose of contents / container to an approved waste disposal plant.

3. Composition / Information on Ingredients

CAS Number: Not applicable to mixtures
EC Number: Not applicable to mixtures
Index Number: Not applicable to mixtures
Molecular Weight: Not applicable to mixtures

Ingredient	CAS Number	Percent	Hazardous	Chemical Characterization
#2 Fuel Oil	68476-30-2	>95%	Yes	Substance
Naphthalene	91-20-3	0.1 - 1%	Yes	Substance
Methyl Esters	67784-80-9	0 – 5%	No	Substance

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). Get medical attention if symptoms occur.

5. Fire-fighting Measures

Fire: Flammable Liquid and Vapor!

Explosion: Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. When mixed with air and exposed to an ignition source, flammable vapors

can burn in the open or explode in confined spaces. Biodiesel soaked rags or spill absorbents (i.e. oil dry, polypropylene socks, sand, etc.) can cause spontaneous combustion if stored near combustibles and not handled properly.

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

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA) 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: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment as per Section 8.

Environmental Precautions and Methods and Materials for Containment and Cleaning Up: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air.)

If properly trained, proceed with the following measures:

1. For small spills: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
2. For large spills: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material (e.g. sand, earth, vermiculite or diatomaceous earth) and place in container for disposal according to local regulations (see Section 13.) Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

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): mineral oil mist
ACGIH Threshold Limit Value (TWA): 100 mg/m3 TWA (aerosol and vapor, as total hydrocarbons) 8 h (skin)
For Naphthalene (08-007-452):
OSHA Permissible Exposure Limit (TWA): 50 mg/m3 8 hour(s); 10 ppm 8 hour(s)
ACGIH Threshold Limit Value (STEL): 79 mg/m3 15 minute(s) / 15 ppm 15 minute(s)
ACGIH Threshold Limit Value (TWA): 50 mg/3 8 hour(s) / 10 ppm 8 hour(s)
NIOSH Threshold Limit Value (STEL): 75 mg/m3 15 minute(s) / 15 ppm 15 minute(s)
NIOSH Threshold Limit Value (TWA): 50 mg/m3 10 hour(s) / 10 ppm 10 hour(s)
For Methyl Esters (67784-80-9): There are no published threshold limits.

Ventilation System: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

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 - Natural rubber (latex.) Disposable outer garments or impervious garments of equal or greater protection should be worn.

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: Red/orange dyed liquid
Odor: Mild, petroleum distillate 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: 160 - 366C (320 - 690F)
Flash Point: > 52C (125F) minimum PMCC
Evaporation Rate (BuAC=1): Less than 1
Flammability: Flammable Liquid and Vapor!
Upper / Lower Flammability or Explosive Limits: Upper – 7.5 / Lower – 0.6 (#2 Fuel Oil)
Vapor Pressure (mm Hg): 1 mm Hg @ 68F (20C) (#2 Fuel Oil)
Vapor Density (Air=1): Greater than 1
Relative Density: 0.86 g/mL (#2 Fuel Oil)
Solubility: Neglible
Partition Coefficient: n-octanol / water: > 3.3 as log Pow (#2 Fuel Oil)
Auto-ignition Temperature: 494F (257C) (#2 Fuel Oil)
Decomposition Temperature: Will evaporate or boil and possibly ignite before decomposition occurs (#2 Fuel Oil)
Viscosity: 1 to 6 mm^2/s range reported for No.1 or No.2 diesel at ambient temperatures (#2 Fuel Oil)

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

Emergency Overview: WARNING! COMBUSTIBLE. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER.

Combustible liquid. Moderately irritating to the eyes, skin, and respiratory system. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

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:
Fuel Oil #2:
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.
Naphthalene:
Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has been identified as a carcinogen by IARC.

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:
Fuel Oil #2 (68476-30-2):
Oral LD50: 14,500 mg/kg (rat)

Naphthalene (CAS: 91-20-3):
Dermal LD50: 2000 mg/kg (rabbit)
Inhalation LC50: 340 mg/m3 / 1h (rat)
Oral LD50: 490.0 mg/kg (rat)
Methyl Esters (67784-80-9):
Oral LD50: 14,400 mg/kg (rat)

12. Ecological Information

Ecotoxicity: Very toxic to aquatic life with long lasting effects.
For #2 Fuel Oil: 96 h LC50 Pimephales promelas - 35 mg/L (flow-through)
For Naphalene: 48 h LC50 Daphnia – 17.4 mg/L / 96h Fish – 2.25mg/L / 48h Crustaceans 2.6 – 2.89 mg/L

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.)

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal should be in accordance with applicable regional, national, state, and local laws and regulations. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport Information

UN Number: UN1202
Packing Group: III

DOT **IMDG** **IATA**

Land Transport ADR/RID and GGVS/GGVE (Cross Border / Domestic)
UN Proper Shipping Name: COMBUSTIBLE - LIQUID, N.O.S. (FUEL OIL #2)
Transport Hazard Class(es): Combustilbe Liquid

Maritime Transport IMDG/GGVSea
UN Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. (FUEL OIL #2)
Not regulated if flashpoint is > 60C
Transport Hazard Class(es): 3
EmS Number : F-E S-E
Marine Pollutant: Yes

Air Transport ICAO-TI and IATA-DGR
UN Proper Shipping Name: FLAMMABLE LIQUID, N.O.S. (FUEL OIL #2)
Not regulated if flashpoint is > 60C
Transport Hazard Class(es): 3

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

Special Precautions for User: No additional information

15. Regulatory Information

HCS Classification:
Combustible liquid
Irritating material
Carcinogen

U.S. Federal Regulations:
TSCA 4(a) final test rules: Naphthalene
TSCA 8(a) PAIR: Naphthalene
United States inventory (TSCA 8b): All components are listed or exempted.
TSCA 12(b) one-time export: Naphthalene
SARA 302/304/311/312 extremely hazardous substances: No products listed.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Naphthalene, Fuel Oil #2
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Naphthalene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard / Fuel Oil #2: Fire hazard, Immediate (acute) health hazard
Clean Water Act (CWA) 307: Naphthalene; Ethylbenzene
Clean Water Act (CWA) 311: Naphthalene; Ethylbenzene
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products listed.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313
Form R – Reporting Requirements and Supplier Notification

Product Name	CAS Number	Concentration
Naphthalene	91-20-3	0.1-1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State Regulations:
Connecticut Carcinogen Reporting: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: The following components are listed: Emery; Naphthalene
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: The following components are listed: Naphthalene; Fuel Oil #2
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: The following components are listed: Naphthalene
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: The following components are listed: Naphthalene
Rhode Island Hazardous Substances: None of the components are listed.

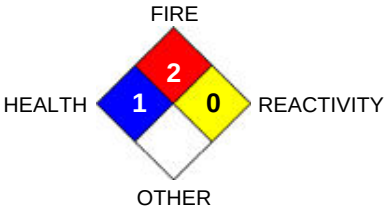
California Prop. 65 Ingredient Name	Cancer	Reproductive	No significant Risk Level	Maximum Acceptable Dosage Level
Naphthalene	Yes	No	Yes	No
Ethylbenzene	Yes	No	No	No

International Lists: This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969.)

16. Other Information

HMIS / NFPA Hazard Rating:

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



Effective Date: 02/11/14 – Initial release

Previous Revisions: Not applicable

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