International SDS Documents

*FOR INFORMATION REFERENCE ONLY. A product specific SDS is included with each shipment. Use the SDS sent with each sample for information related to the product supplied per program cycle.
SAFETY DATA SHEET

Revised: November 14, 2016

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Name of the substance: Residual Fuel Oils - All Grades (Refer to Synonyms for Product Name)
Identification number: 649-024-00-9
Registration number: 01-2119474894-22-0031
Synonyms: Ultra Low Sulfur Diesel
SDS number: 2003

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Laboratory test sample
Uses advised against: Other uses are not recommended unless an assessment is completed, prior to commencement of that use, which demonstrates that the use will be controlled.

1.3. Details of the supplier of the safety data sheet
Supplier: Clark Laboratories
1801 Route 51 South
Jefferson Hills, PA 15025
412-387-1001

1.4. Emergency telephone number

Transportation Emergency Response
Chemtrec - 24 hour emergency response: (800)424-9300
International Collect: +1 703 741 5970
SDS Assistance Email: sds@clarktesting.com

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended
Classification: Carc. Cat. 2; R45, Repr. Cat. 3; R63, Xn; R20-48/21, R66, N; R50/53
The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards
- Acute toxicity, inhalation: Category 4
- Carcinogenicity: Category 1B
- Reproductive toxicity: Category 2
- Specific target organ toxicity - repeated exposure: Category 2 (blood, thymus, liver)
- Aspiration hazard: Category 1

Environmental hazards
- Hazardous to the aquatic environment, long-term aquatic hazard: Category 1

H332 - Harmful if inhaled.
H350 - May cause cancer.
H361d - Suspected of damaging the unborn child.
H373 - May cause damage to organs (blood, thymus, liver) through prolonged or repeated exposure.
H304 - May be fatal if swallowed and enters airways.

H410 - Very toxic to aquatic life with long lasting effects.
Hazard summary

Physical hazards
Not classified for physical hazards.

Health hazards
May cause cancer. Also harmful by inhalation. Also harmful: danger of serious damage to health by prolonged exposure in contact with skin. Possible risk of harm to the unborn child. Repeated exposure may cause skin dryness or cracking.

Environmental hazards
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Specific hazards
Breathing of high vapour concentrations may cause dizziness, light-headedness, headache, nausea and loss of co-ordination. Continued inhalation may result in unconsciousness. Prolonged or repeated contact with skin may cause redness, itching, irritation, eczema/chapping and oil acne. Components of the product may be absorbed into the body through the skin.

Main symptoms
In high concentrations, vapours are narcotic and may cause headache, fatigue, dizziness and nausea. Defatting of the skin. Dermatitis. Ingestion may cause irritation and malaise.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Fuel oil, residual
Identification number 649-024-00-9

Hazard pictograms

Signal word
Danger

Hazard statements
H304 - May be fatal if swallowed and enters airways.
H332 - Harmful if inhaled.
H350 - May cause cancer.
H361d - Suspected of damaging the unborn child.
H373 - May cause damage to organs (blood, thymus, liver) through prolonged or repeated exposure.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention
P201 - Obtain special instructions before use.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P260 - Do not breathe dust/gas/mist/vapours/spray.

Response
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician.
P331 - Do NOT induce vomiting.

Storage
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

Disposal
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information
Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

Not a PBT or vPvB substance or mixture. Hydrogen sulfide (H2S) can accumulate in the headspace of storage tanks and reach potentially hazardous concentrations. Static accumulator - Static accumulating flammable materials can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite material and vapor may cause flash fire (or explosion).

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>%</th>
<th>CAS-No. / EC No.</th>
<th>REACH Registration No.</th>
<th>INDEX No.</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Fuel oil, residual</td>
<td>100</td>
<td>68476-33-5</td>
<td>01-2119474894-22-0031</td>
<td>649-024-00-9</td>
<td></td>
</tr>
<tr>
<td>Classification:</td>
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<tr>
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<td></td>
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<td>Carc. Cat. 2;R45, Repr. Cat. 3;R63, Xn;R20-48/21, R66, N;R50/53</td>
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<td>CLP:</td>
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<td>Acute Tox. 4;H332, Carc. 1B;H350, STOT RE 2;H373, Aquatic Chronic 1;H410</td>
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</tbody>
</table>
SECTION 4: First aid measures

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation
Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

If there is any suspicion of inhalation of H2S:
Rescuers must wear breathing apparatus, belt and safety rope, and follow rescue procedures.
Remove casualty to fresh air as quickly as possible.
Immediately begin artificial respiration if breathing has ceased.
Provision of oxygen may help.
Obtain medical advice for further treatment.

Skin contact
Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water.
Get medical attention if irritation develops or persists.
Wash clothing separately before reuse.
Destroy or thoroughly clean contaminated shoes. If high pressure injection under the skin occurs, always seek medical attention.

Eye contact
Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids wide apart. Get medical attention if irritation develops or persists.

Ingestion
Immediately rinse mouth and drink plenty of water or milk. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Transport immediately to hospital and take these instructions.

4.2. Most important symptoms and effects, both acute and delayed
Defatting of the skin. May cause eye irritation on direct contact. In high concentrations, vapours are narcotic and may cause headache, fatigue, dizziness and nausea. May cause damage to organs (if) through prolonged or repeated exposure.

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards
The product is combustible, and heating may generate vapours which may form explosive vapour/air mixtures. Material will float and can be re-ignited on surface of water.

5.1. Extinguishing media
Suitable extinguishing media: Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture
Thermal decomposition may produce smoke, oxides of carbon and lower molecular weight organic compounds whose composition have not been characterised. Sulfur Oxides (SOx). Nitrogen Oxides (NOx).

5.3. Advice for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special protective equipment for firefighters
Move containers from fire area if you can do it without risk. Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Keep upwind. Keep out of low areas. Ventilate closed spaces before entering. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Local authorities should be advised if significant spillages cannot be contained.

For emergency responders
Keep unnecessary personnel away. Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Extremely flammable. Review Fire and Explosion Hazard Data before proceeding with clean up.
Keep all sources of ignition (flames, smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g., by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies.

6.3. Methods and material for containment and cleaning up

6.4. Reference to other sections

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Use non-sparking tools and explosion-proof equipment. Stop leak if you can do so without risk. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas.

Small Spills: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. This material and its container must be disposed of as hazardous waste.

Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent product from entering drains. Do not allow material to contaminate ground water system. Should not be released into the environment.

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Before entering storage tanks and commencing any operation in a confined area check the atmosphere for oxygen content and flammability. (Subject to applicability) If sulfur compounds are suspected to be present in the product, check the atmosphere for H2S content. Access to work area should be restricted to people handling the product only. Should be handled in closed systems, if possible. Avoid inhalation of vapors and contact with skin, eyes and clothing. Avoid release to the environment. Wear appropriate personal protective equipment. Immediately change contaminated clothes. Do not eat, drink or smoke when using the product. Be aware of potential for surfaces to become slippery. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames and high temperatures. Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)


SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Material</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel oil, residual (CAS 68476-33-5)</td>
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</tbody>
</table>

Czech Republic

<table>
<thead>
<tr>
<th>Material</th>
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<th>Value</th>
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</thead>
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<tr>
<td>Fuel oil, residual (CAS 68476-33-5)</td>
<td>Ceiling</td>
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Iceland

<table>
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<th>Value</th>
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<td>TWA</td>
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Italy

<table>
<thead>
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<th>Value</th>
</tr>
</thead>
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<td>Fuel oil, residual (CAS 68476-33-5)</td>
<td>Romania</td>
<td>25 ppm</td>
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</table>
### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Recommended monitoring procedures

### Derived no-effect level (DNEL)

<table>
<thead>
<tr>
<th>Material</th>
<th>Type</th>
<th>Route</th>
<th>Value</th>
<th>Form</th>
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<tr>
<td>Fuel oil, residual (CAS 68476-33-5)</td>
<td>Workers</td>
<td>Dermal</td>
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<td>Long term exposure systemic effects</td>
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<td></td>
<td>Inhalation</td>
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<td>Aerosol, Acute exposure systemic effects</td>
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<td></td>
<td>Inhalation</td>
<td>0.12 mg/m³/8h</td>
<td>Aerosol, Long term exposure systemic effects</td>
</tr>
</tbody>
</table>

### Predicted no effect concentrations (PNECs)

Not available.

### 8.2. Exposure controls

#### Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment.

#### Individual protection measures, such as personal protective equipment

##### General information

Use personal protective equipment as required. Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Keep working clothes separately. Launder contaminated clothing before reuse.

##### Eye/face protection

Wear safety glasses. If splash potential exists, wear full face shield or chemical goggles.

##### Skin protection

- **Hand protection**
  
  Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Viton, Polyurethane, Nitrile rubber. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Wear suitable gloves tested to EN374.

- **Other**
  
  Full body suit and boots are recommended when handling large volumes or in emergency situations. Flame retardant protective clothing is recommended.

##### Respiratory protection

In case of inadequate ventilation or risk of inhalation of oil mist, suitable respiratory equipment with combination filter (type A2/P2) can be used. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

##### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

##### Hygiene measures

When using, do not eat, drink or smoke. Wash hands after handling. Launder contaminated clothing before reuse. Private clothes and working clothes should be kept separately. Handle in accordance with good industrial hygiene and safety practices. Follow up on any medical surveillance requirements.

### Environmental exposure controls

Contain spills and prevent releases and observe national regulations on emissions.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

##### Appearance

Black liquid.

##### Physical state

Liquid.

##### Form

Liquid.

##### Colour

Black.

##### Odour

Petroleum.

##### Odour threshold

Not available.

##### pH

Not applicable.

##### Melting point/freezing point

Not available.

##### Initial boiling point and boiling range

160 - 600 °C (320 - 1112 °F)

##### Flash point

62.0 °C (143.6 °F) Pensky-Martens Closed Cup

##### Evaporation rate

Not available.

##### Flammability (solid, gas)

Non flammable.

#### Upper/lower flammability or explosive limits

300 ppm
Flammability limit - lower
(%) Not available.
Flammability limit - upper (%) Not available.

Vapour pressure < 0,04 psi estimated
Vapour density > 1 estimated
Relative density Not available.
Solubility(ies) Insoluble in water.
Partition coefficient (n-octanol/water) Not applicable.
Auto-ignition temperature 263 °C (505,4 °F)
Decomposition temperature Not available.
Viscosity 10 - 55 mm²/s (100°C)
Explosive properties Not explosive.
Oxidizing properties Not oxidizing.

9.2. Other information
Density 840,00 - 1100,00 kg/m³ (15 °C)

SECTION 10: Stability and reactivity
10.1. Reactivity The product is stable and non reactive under normal conditions of use, storage and transport.
10.2. Chemical stability Stable under normal temperature conditions and recommended use.
10.3. Possibility of hazardous reactions Hazardous polymerisation does not occur.
10.4. Conditions to avoid Heat, flames and sparks. Ignition sources. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.
10.5. Incompatible materials Strong acids. Strong oxidizers such as nitrates, chlorates, peroxides.
10.6. Hazardous decomposition products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

SECTION 11: Toxicological information
General information Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure
Ingestion Ingestion may cause irritation and malaise.
Inhalation Harmful if inhaled. In high concentrations, vapours and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea.
Skin contact Repeated exposure may cause skin dryness or cracking. May be absorbed through the skin.
Eye contact Direct contact with eyes may cause temporary irritation.
Symptoms Skin irritation. Defatting of the skin. Rash. May cause eye irritation on direct contact. In high concentrations, vapours and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea.

11.1. Information on toxicological effects
Acute toxicity Harmful if inhaled.
Skin corrosion/irritation Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Skin sensitisation Based on available data, the classification criteria are not met.
Germ cell mutagenicity Based on available data, the classification criteria are not met.
Carcinogenicity Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity
Fuel oil, residual (CAS 68476-33-5) 2B Possibly carcinogenic to humans.
Reproductive toxicity Suspected of damaging fertility or the unborn child.
Specific target organ toxicity - single exposure
Specific target organ toxicity - repeated exposure
Based on available data, the classification criteria are not met.

May cause damage to organs through prolonged or repeated exposure: Blood. Thymus. Liver.

**Aspiration hazard** May be fatal if swallowed and enters airways.

**Mixture versus substance information**
Not available.

**Other information** Symptoms may be delayed.

SECTION 12: Ecological information

### 12.1. Toxicity
Oil spills are generally hazardous to the environment.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test results</th>
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<tbody>
<tr>
<td>Fuel oil, residual (CAS 68476-33-5)</td>
<td>Algae</td>
<td>EL50, Pseudokirchneriella subcapitata</td>
</tr>
<tr>
<td></td>
<td>Crustacea</td>
<td>EL50, Daphnia magna</td>
</tr>
<tr>
<td></td>
<td>Fish</td>
<td>LL50, Oncorhynchus mykiss</td>
</tr>
</tbody>
</table>

### 12.2. Persistence and degradability
The degradability of the product has not been stated.

### 12.3. Bioaccumulative potential
No data available on bioaccumulation.

### 12.4. Mobility in soil
Not available.

### 12.5. Results of PBT and vPvB assessment
Not a PBT or vPvB substance or mixture.

### 12.6. Other adverse effects
Very toxic to aquatic life with long lasting effects. Oil spills are generally hazardous to the environment.

SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**Residual waste** Dispose of in accordance with local regulations.

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied.

**EU waste code** 13 07 03* The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Disposal methods/information** Dispose in accordance with all applicable regulations. This material and its container must be disposed of as hazardous waste. Do not discharge into drains, water courses or onto the ground.

SECTION 14: Transport information

Environmentally hazardous substances may be shipped as non restricted when meeting the descriptions of UN3082 as they are not subject to the IMO-IMDG or IATA/ICAO Codes when transported in packaging that does not exceed 5L or 5kg net and the packaging used meets defined standards (Special Provision A197)

**ADR**

<table>
<thead>
<tr>
<th>14.1. UN number</th>
<th>UN3082</th>
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<tr>
<td>14.2. UN proper shipping name</td>
<td>Environmentally hazardous substance, liquid, n.o.s. (Fuel oil, residual)</td>
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<tr>
<td>14.3. Transport hazard class(es)</td>
<td>9</td>
</tr>
<tr>
<td>14.4. Packing group</td>
<td>III</td>
</tr>
<tr>
<td>14.5. Environmental hazards</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Tunnel restriction code
- E

### Labels required
- 9

### 14.6. Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.

### RID

<table>
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<th>14.1. UN number</th>
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<td>14.4. Packing group</td>
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15
15.1. Environmental hazards  Yes
Labels required 9
UN3082 Environmental Hazardous Liquid, N.o.s. (Fuel oil, residual)

15.2. Special precautions for user
9

ADN
14.1. UN number  UN3082
14.2. UN proper shipping name  Environmentally hazardous substance, liquid, n.o.s. (Fuel oil, residual)
14.3. Transport hazard class(es)  9
Subsidiary class(es)
14.4. Packing group  III
14.5. Environmental hazards  Yes
Labels required 9
14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA
14.1. UN number  UN3082
14.2. UN proper shipping name  Environmentally hazardous substance, liquid, n.o.s. (Fuel oil, residual)
14.3. Transport hazard class(es)  9
Subsidiary class(es) -
14.4. Packing group  III
14.5. Environmental hazards  Yes
Labels required 9
ERG code  9L
14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG
14.1. UN number  UN3082
14.2. UN proper shipping name  ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Residues (petroleum), atmospheric)
14.3. Transport hazard class(es)  9
Subsidiary class(es) -
14.4. Packing group  III
14.5. Environmental hazards  Yes
Marine pollutant
Labels required 9
EmS F-A, S-F
14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

14.7. Transport in bulk not applicable. However, this product is a liquid and if transported in bulk covered under MARPOL 73/78, Annex I.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations
Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I
Not listed.
Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II
Not listed.
Not listed.
Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended
Not listed.
Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended
Not listed.
15.1. Chemical safety assessment

For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

List of abbreviations

DSD: Directive 67/548/EEC.
DNEL: Derived No-Effect Level.
PNEC: Predicted No-Effect Concentration.
PBT: Persistent, bioaccumulative and toxic.
vPvB: Very Persistent and very Bioaccumulative.

Information on evaluation method leading to the classification of mixture

The mixture is classified based on test data for physical hazards. The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. For details, refer to Sections 9, 11 and 12.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15

R20 Harmful by inhalation.
R45 May cause cancer.
R48/21 Harmful: danger of serious damage to health by prolonged exposure in contact with skin.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R63 Possible risk of harm to the unborn child.
R66 Repeated exposure may cause skin dryness or cracking.
H332 Harmful if inhaled.
H350 May cause cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

This SDS contains revisions in the following section(s):

This safety data sheet contains revisions in the following section(s): 2, 3, 5, 7, 11, 12.
NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. Adequate training and instruction should be given by you to your employees and affected personnel. Appropriate warnings and safe handling procedures should be provided by you to handlers and users. Additionally, the user should review this information, satisfy itself as to its suitability and completeness, and pass on the information to its employees or customers in accordance with the applicable federal, state, provincial or local hazard communication requirements. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the fitness for use of the material, or the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, vendor neither assumes nor retains any responsibility for any damage or injury resulting from abnormal use, from any failure to adhere to appropriate practices, or from any hazards inherent in the nature of the material. Moreover, unless an employee or a customer accesses or receives a SDS directly from the company, there is no assurance that a document obtained from alternate sources is the most currently available SDS. The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Completed by Clark PTP Staff

NO ANNEX
Domestic SDS Documents

*FOR INFORMATION REFERENCE ONLY*. A product specific SDS is included with each shipment. Use the SDS sent with each sample for information related to the product supplied per program cycle.
SAFETY DATA SHEET

Revised: November 14, 2016

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Name of the substance: Residual Fuel Oils - All Grades (Refer to Synonyms for Product Name)
Identification number: 649-024-00-9
Registration number: 01-2119474894-22-0031
Synonyms: Ultra Low Sulfur Diesel
SDS number: 2003

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Laboratory test sample
Uses advised against: Other uses are not recommended unless an assessment is completed, prior to commencement of that use, which demonstrates that the use will be controlled.

1.3. Details of the supplier of the safety data sheet
Supplier: Clark Laboratories
1801 Route 51 South
Jefferson Hills, PA 15025
412-387-1001

1.4. Emergency telephone number
Transportation Emergency Response
Chemtrec - 24 hour emergency response: (800) 424-9300
International Collect: +1 703 741 5970
SDS Assistance Email: sds@clarktesting.com

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended
Classification: Carc. Cat. 2;R45, Reproid. Cat. 3;R63, Xn;R20-48/21, R66, N;R50/53
The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards
- Acute toxicity, inhalation: Category 4
- Carcinogenicity: Category 1B
- Reproductive toxicity: Category 2
- Specific target organ toxicity - repeated exposure: Category 2 (blood, thymus, liver)
- Aspiration hazard: Category 1

Environmental hazards
- Hazardous to the aquatic environment, long-term aquatic hazard: Category 1

H332 - Harmful if inhaled.
H350 - May cause cancer.
H361d - Suspected of damaging the unborn child.
H373 - May cause damage to organs (blood, thymus, liver) through prolonged or repeated exposure.
H304 - May be fatal if swallowed and enters airways.
H410 - Very toxic to aquatic life with long lasting effects.
Hazard summary

Physical hazards
Not classified for physical hazards.

Health hazards
May cause cancer. Also harmful by inhalation. Also harmful: danger of serious damage to health by prolonged exposure in contact with skin. Possible risk of harm to the unborn child. Repeated exposure may cause skin dryness or cracking.

Environmental hazards
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Specific hazards
Breathing of high vapour concentrations may cause dizziness, light-headedness, headache, nausea and loss of co-ordination. Continued inhalation may result in unconsciousness. Prolonged or repeated contact with skin may cause redness, itching, irritation, eczema/chapping and oil acne. Components of the product may be absorbed into the body through the skin.

Main symptoms
In high concentrations, vapours are narcotic and may cause headache, fatigue, dizziness and nausea. Defatting of the skin. Dermatitis. Ingestion may cause irritation and malaise.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Fuel oil, residual
Identification number 649-024-00-9

Signal word
Danger

Hazard statements
H304 - May be fatal if swallowed and enters airways.
H332 - Harmful if inhaled.
H350 - May cause cancer.
H361d - Suspected of damaging the unborn child.
H373 - May cause damage to organs (blood, thymus, liver) through prolonged or repeated exposure.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements
Prevention
P201 - Obtain special instructions before use.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P260 - Do not breathe dust/fume/gas/mist/vapors/spray.

Response
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician.
P331 - Do NOT induce vomiting.

Storage
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

Disposal
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information
Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards
Not a PBT or vPvB substance or mixture. Hydrogen sulfide (H2S) can accumulate in the headspace of storage tanks and reach potentially hazardous concentrations. Static accumulator - Static accumulating flammable materials can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite material and vapor may cause flash fire (or explosion).

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>%</th>
<th>CAS-No. / EC No.</th>
<th>REACH Registration No.</th>
<th>INDEX No.</th>
<th>Notes</th>
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<td>100</td>
<td>68476-33-5</td>
<td>01-2119474894-22-0031</td>
<td>649-024-00-9</td>
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<td></td>
<td>270-675-6</td>
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</table>

Classification:
DSD: Carc. Cat. 2;R45, Repr. Cat. 3;R63, Xn;R20-48/21, R66, N;R50/53
CLP: Acute Tox. 4;H332, Carc. 1B;H350, STOT RE 2;H373, Aquatic Chronic 1;H410
Composition comments

This product is registered under the REACH Regulation 1907/2006 as a UVCB. The full text for all R- and H-phrases is displayed in section 16. All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

If there is any suspicion of inhalation of H2S:

Rescuers must wear breathing apparatus, belt and safety rope, and follow rescue procedures.

Remove casualty to fresh air as quickly as possible.

Immediately begin artificial respiration if breathing has ceased.

 Provision of oxygen may help.

Obtain medical advice for further treatment.

Skin contact

Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water.

Get medical attention if irritation develops or persists. Wash clothing separately before reuse.

Destroy or thoroughly clean contaminated shoes. If high pressure injection under the skin occurs, always seek medical attention.

Eye contact

Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids wide apart. Get medical attention if irritation develops or persists.

Ingestion

Immediately rinse mouth and drink plenty of water or milk. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Transport immediately to hospital and take these instructions.

4.2. Most important symptoms and effects, both acute and delayed

Defatting of the skin. May cause eye irritation on direct contact. In high concentrations, vapours are narcotic and may cause headache, fatigue, dizziness and nausea. May cause damage to organs () through prolonged or repeated exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards

The product is combustible, and heating may generate vapours which may form explosive vapour/air mixtures. Material will float and can be re-ignited on surface of water.

5.1. Extinguishing media

Suitable extinguishing media

Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition may produce smoke, oxides of carbon and lower molecular weight organic compounds whose composition have not been characterised. Sulfur Oxides (SOx). Nitrogen Oxides (NOx).

5.3. Advice for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special protective equipment for firefighters

Move containers from fire area if you can do it without risk. Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Keep upwind. Keep out of low areas. Ventilate closed spaces before entering. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Local authorities should be advised if significant spillages cannot be contained.

For emergency responders

Keep unnecessary personnel away. Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Extremely flammable. Review Fire and Explosion Hazard Data before proceeding with clean up.
6.3. Methods and material for containment and cleaning up

6.4. Reference to other sections

**ELIMINATE** all ignition sources (no smoking, flares, sparks or flames in immediate area). Use non-sparking tools and explosion-proof equipment. Stop leak if you can do so without risk. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas.

Small Spills: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. This material and its container must be disposed of as hazardous waste.

Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent product from entering drains. Do not allow material to contaminate ground water system. Should not be released into the environment.

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.

Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames and high temperatures. Keep away from food, drink and animal feeding stuffs.

**7.2. Conditions for safe storage, including any incompatibilities**

**7.3. Specific end use(s)**


SECTION 8: Exposure controls/personal protection

8.1. Control parameters

**Occupational exposure limits**

- **Bulgaria**
  - **Material**
    - Fuel oil, residual (CAS 68476-33-5)
  - **Type**
    - TWA
  - **Value**
    - 300 mg/m3

- **Czech Republic**
  - **Material**
    - Fuel oil, residual (CAS 68476-33-5)
  - **Type**
    - Ceiling
    - TWA
  - **Value**
    - 1000 mg/m3
    - 400 mg/m3

- **Iceland**
  - **Material**
    - Fuel oil, residual (CAS 68476-33-5)
  - **Type**
    - TWA
  - **Value**
    - 180 mg/m3
    - 25 ppm

- **Italy**
  - **Material**
    - Fuel oil, residual (CAS 68476-33-5)
  - **Type**
  - **Value**

- **Romania**
  - **Material**
    - Fuel oil, residual (CAS 68476-33-5)
  - **Type**
  - **Value**
**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Recommended monitoring procedures**

**Derived no-effect level (DNEL)**

<table>
<thead>
<tr>
<th>Material</th>
<th>Type</th>
<th>Route</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel oil, residual (CAS 68476-33-5)</td>
<td>Workers</td>
<td>Dermal</td>
<td>0.065 mg/kg/8h</td>
<td>Long term exposure systemic effects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalation</td>
<td>4700 mg/m³/15min</td>
<td>Aerosol, Acute exposure systemic effects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalation</td>
<td>0.12 mg/m³/8h</td>
<td>Aerosol, Long term exposure systemic effects</td>
</tr>
</tbody>
</table>

**Predicted no effect concentrations (PNECs)**

Not available.

**8.2. Exposure controls**

**Appropriate engineering controls**

Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment.

**Individual protection measures, such as personal protective equipment**

**General information**

Use personal protective equipment as required. Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. Keep working clothes separately. Launder contaminated clothing before reuse.

**Eye/face protection**

Wear safety glasses. If splash potential exists, wear full face shield or chemical goggles.

**Skin protection**

- **Hand protection**
  
  Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Viton, Polyurethane, Nitrile rubber. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Wear suitable gloves tested to EN374.

- **Other**
  
  Full body suit and boots are recommended when handling large volumes or in emergency situations. Flame retardant protective clothing is recommended.

**Respiratory protection**

In case of inadequate ventilation or risk of inhalation of oil mist, suitable respiratory equipment with combination filter (type A2/P2) can be used. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

**Hygiene measures**

When using, do not eat, drink or smoke. Wash hands after handling. Launder contaminated clothing before reuse. Private clothes and working clothes should be kept separately. Handle in accordance with good industrial hygiene and safety practices. Follow up on any medical surveillance requirements.

**Environmental exposure controls**

Contain spills and prevent releases and observe national regulations on emissions.

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

**Appearance**

Black liquid.

**Physical state**

Liquid.

**Form**

Liquid.

**Colour**

Black.

**Odour**

Petroleum.

**Odour threshold**

Not available.

**pH**

Not applicable.

**Melting point/freezing point**

Not available.

**Initial boiling point and boiling range**

160 - 600 °C (320 - 1112 °F)

**Flash point**

62,0 °C (143,6 °F) Pensky-Martens Closed Cup

**Evaporation rate**

Not available.

**Flammability (solid, gas)**

Non flammable.

**Upper/lower flammability or explosive limits**

300 ppm
SECTION 10: Stability and reactivity

10.1. Reactivity
The product is stable and non reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions
Hazardous polymerisation does not occur.

10.4. Conditions to avoid
Heat, flames and sparks. Ignition sources. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.

10.5. Incompatible materials
Strong acids. Strong oxidizers such as nitrates, chlorates, peroxides.

10.6. Hazardous decomposition products
Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

SECTION 11: Toxicological information

General information
Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Ingestion
Ingestion may cause irritation and malaise.

Inhalation
Harmful if inhaled. In high concentrations, vapours and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea.

Skin contact
Repeated exposure may cause skin dryness or cracking. May be absorbed through the skin.

Eye contact
Direct contact with eyes may cause temporary irritation.

Symptoms
Skin irritation. Defatting of the skin. Rash. May cause eye irritation on direct contact. In high concentrations, vapours and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea.

11.1. Information on toxicological effects

Acute toxicity
Harmful if inhaled.

Skin corrosion/irritation
Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation
Direct contact with eyes may cause temporary irritation.

Skin sensitisation
Based on available data, the classification criteria are not met.

Germ cell mutagenicity
Based on available data, the classification criteria are not met.

Carcinogenicity
Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity
Fuel oil, residual (CAS 68476-33-5) 2B Possibly carcinogenic to humans.

Reproductive toxicity
Suspected of damaging fertility or the unborn child.
Specific target organ toxicity - single exposure
Specific target organ toxicity - repeated exposure
Based on available data, the classification criteria are not met.

May cause damage to organs through prolonged or repeated exposure: Blood. Thymus. Liver.

Aspiration hazard May be fatal if swallowed and enters airways.

Mixture versus substance information
Not available.

Other information Symptoms may be delayed.

SECTION 12: Ecological information

12.1. Toxicity Oil spills are generally hazardous to the environment.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel oil, residual (CAS 68476-33-5)</td>
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<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algae</td>
<td>EL50</td>
<td>Pseudokirchneriella subcapitata 0.75 mg/l, 72 Hours</td>
</tr>
<tr>
<td>Crustacea</td>
<td>EL50</td>
<td>Daphnia magna 2 mg/l, 48 Hours</td>
</tr>
<tr>
<td>Fish</td>
<td>LL50</td>
<td>Oncorhynchus mykiss 79 mg/l, 96 Hours</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

The degradability of the product has not been stated.

12.3. Bioaccumulative potential

No data available on bioaccumulation.

12.4. Mobility in soil

Not available.

12.5. Results of PBT and vPvB assessment

Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects

Very toxic to aquatic life with long lasting effects. Oil spills are generally hazardous to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste Dispose of in accordance with local regulations.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied.

EU waste code 13 07 03* The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information Dispose in accordance with all applicable regulations. This material and its container must be disposed of as hazardous waste. Do not discharge into drains, water courses or onto the ground.

SECTION 14: Transport information

Environmentally hazardous substances may be shipped as non restricted when meeting the descriptions of UN3082 as they are not subject to the IMO-IMDG or IATA/ICAO Codes when transported in packaging that does not exceed 5L or 5kg net and the packaging used meets defined standards (Special Provision A197)

ADR

14.1. UN number UN3082
14.2. UN proper shipping name Environmentally hazardous substance, liquid, n.o.s. (Fuel oil, residual)
14.3. Transport hazard class(es) 9
14.4. Subsidiary class(es) -
14.5. Packing group III
14.5. Environmental hazards Yes
<table>
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<th>Tunnel restriction code</th>
<th>E</th>
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<tbody>
<tr>
<td>Labels required</td>
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<tr>
<td>14.6. Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
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</table>

### RID

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<th>14.1. UN number</th>
<th>UN3082</th>
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<td>Subsidiary class(es)</td>
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<td>14.4. Packing group</td>
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</tbody>
</table>
### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

**EU regulations**

- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I
  - Not listed.
- Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II
  - Not listed.
  - Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended
  - Not listed.
- Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended
  - Not listed.
Not listed.

**Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended**
Not listed.

**Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended**
Not listed.

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(1) Candidate List as currently published by ECHA**
Not listed.

**Authorisations**

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended**
Not listed.

**Restrictions on use**

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**
Fuel oil, residual (CAS 68476-33-5)

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work**
Not regulated.

**Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding**
Fuel oil, residual (CAS 68476-33-5)

**Other EU regulations**

**Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances**
Not regulated.

**Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work**
Fuel oil, residual (CAS 68476-33-5)

**Directive 94/33/EC on the protection of young people at work**
Fuel oil, residual (CAS 68476-33-5)

**Other regulations**
The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended and respective national laws implementing EC directives. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006. 96/82/EC (Seveso II) Directive; Part 2 (Classified Substances) - Extremely Flammable

**National regulations**
Young people under 18 years old are not allowed to work with this product according to the EU Directive 94/33/EC on the protection of young people at work. Pregnant women should not work with the product, if there is the least risk of exposure.

**15.1. Chemical safety assessment**

For this substance a chemical safety assessment has been carried out.

**SECTION 16: Other information**

**List of abbreviations**
DSD: Directive 67/548/EEC.
DNEL: Derived No-Effect Level.
PNEC: Predicted No-Effect Concentration.
PBT: Persistent, bioaccumulative and toxic.
vPvB: Very Persistent and very Bioaccumulative.

**References**
Chemical safety report.
CLP files – http://concawe.org/

**Information on evaluation method leading to the classification of mixture**
The mixture is classified based on test data for physical hazards. The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. For details, refer to Sections 9, 11 and 12.

**Full text of any statements or R-phrases and H-statements under Sections 2 to 15**
R20 Harmful by inhalation.
R45 May cause cancer.
R48/21 Harmful: danger of serious damage to health by prolonged exposure in contact with skin.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R63 Possible risk of harm to the unborn child.
R66 Repeated exposure may cause skin dryness or cracking.
H332 Harmful if inhaled.
H350 May cause cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

**This SDS contains revisions in the following section(s):**
This safety data sheet contains revisions in the following section(s): 2, 3, 5, 7, 11, 12.
NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. Adequate training and instruction should be given by you to your employees and affected personnel. Appropriate warnings and safe handling procedures should be provided by you to handlers and users. Additionally, the user should review this information, satisfy itself as to its suitability and completeness, and pass on the information to its employees or customers in accordance with the applicable federal, state, provincial or local hazard communication requirements. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the fitness for use of the material, or the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, vendor neither assumes nor retains any responsibility for any damage or injury resulting from abnormal use, from any failure to adhere to appropriate practices, or from any hazards inherent in the nature of the material. Moreover, unless an employee or a customer accesses or receives a SDS directly from the company, there is no assurance that a document obtained from alternate sources is the most currently available SDS. The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Completed by Clark PTP Staff

NO ANNEX