Product Safety Summary

FUEL OIL PRODUCTS

This Product Safety Summary document is a high-level summary intended to provide the general public with an overview of product safety information on these chemical substances. It is not intended to provide emergency response, medical or treatment information, or to provide a discussion of all safety and health information. This document is not intended to replace the Material Safety Data Sheet. Warnings and handling precautions provided below are not intended to replace or supersede manufacturers’ instructions and warning for their consumer products which may contain these chemical substances.

1. Chemical Identity

The Fuel Oils manufactured in our chemical plants are generally petroleum distillates with carbon ranges that fall within the C9 to C15 range. They may contain polycyclic aromatic compounds such as naphthalene and methyl naphthalene, and may contain trace amounts of benzene. These Fuel Oils are created as part of the cracking of other petroleum streams during the manufacture of chemicals such as benzene. Around the world, Fuel Oils can be identified by a variety of CAS numbers including those shown below.

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Chemical Name</th>
<th>Other Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>64742-91-2</td>
<td>Distillates (petroleum), steam-cracked</td>
<td>Steam Cracked Gas Oil</td>
</tr>
<tr>
<td>8008-20-6</td>
<td>Kerosene</td>
<td>Kerosene (petroleum)</td>
</tr>
<tr>
<td>101631-14-5</td>
<td>Distillates (petroleum), heavy steam-cracked</td>
<td>Quench Oil Fluxant</td>
</tr>
<tr>
<td>64742-90-1</td>
<td>Residues (petroleum), steam-cracked</td>
<td>Pyrolysis Fuel Oil, SK-125</td>
</tr>
</tbody>
</table>

2. Product Uses

Fuel Oils that are manufactured in a chemical plant, have the same types of uses as the Fuel Oils manufactured in petroleum refineries including bunker fuel (fuel for ships) or use as a flux oil (used to cut heavier petroleum streams into lighter grades). In addition, some of these Fuel Oils can be used as a feedstock to make other chemicals. All uses pertain to an industrial setting.

3. Physical / Chemical Properties

At ambient temperature and pressure, Fuel Oils are liquid, with most being viscous and dark in color. The flash point for these Fuel Oils ranges from approximately 50°C to higher than 70°C, which identifies them as either flammable or combustible liquids. They are typically only handled in industrial facilities where safe conditions regarding ignition sources and ventilation are adequately controlled.

4. Health Information

Fuel Oils may be irritating to the eyes and skin. At high concentrations, well above recommended exposure levels, they may cause drowsiness and lightheadedness.

5. Additional Hazard Information

If accidentally swallowed, small amounts of liquid may be aspirated into the lungs during ingestion or from vomiting which may cause severe lung inflammation and lung edema (an accumulation of fluid in the lungs). This is a medical emergency which must be immediately and properly treated. Do not induce vomiting.

Constituents:
Most Fuel Oils contain Polycyclic Aromatic Compounds (PACs). The following health hazard information is applicable to PACs: Carcinogenic in animal studies. Caused mutations in-vitro. Reproductive and developmental studies resulted in decreased fetal weights, survival and malformations, as well as reduced sperm count in males. Dermal studies resulted in increased mortality, skin irritation, liver, kidney, thymus, bone marrow, blood and lymphoid tissue toxic effects. Possible allergen and/or photoallergen.

Most Fuel Oils contain naphthalene. Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain.

Some Fuel Oils contain benzene in trace amounts. Prolonged and repeated exposure to benzene may cause serious injury to the blood forming organs and is associated with anemia and to the later development of acute myelogenous leukemia.

6. Food Contact Regulated Uses

Fuel Oils are not claimed as compliant for food contact uses.

7. Environmental Information

If accidentally released to the aquatic environment in sufficient quantities, Fuel Oils have the potential to demonstrate a high degree of toxicity (e.g., to fish, invertebrates, algae). If spilled, they are likely to sink and migrate to the sediment, and to be persistent, with the potential to bioaccumulate. Considerable measures are taken to prevent releases from manufacturing and use activities.

8. Exposure Potential

- **Workplace exposure** – This refers to potential exposure of workers to Fuel Oil in a manufacturing facility or industrial workplace. Generally, the potential for exposure of personnel to these products in manufacturing facilities is relatively low because the process, storage and handling operations are closed, with little potential for releases to the air. Although specific guidance may vary by product, ExxonMobil recommends that exposures to most of these Fuel Oils be limited to less than 0.1 mg/m3 per 8 hour day. In addition, the American Conference of Government Industrial Hygienists has established recommendations for certain of the components that may be found in Fuel Oils, such as limiting benzene exposure to less than 0.5 ppm per 8 hour day, and limiting naphthalene exposure to less than 10 ppm per 8 hour day.

- **Consumer use of products containing Fuel Oils** – These Fuel Oils are not sold to the general public. Consequently, the potential for exposure to consumers would be expected to be low, far below the recommended occupational exposure level described above.

- **Environmental releases** – As a chemical manufacturer, we are committed to operating in an environmentally responsible manner everywhere we do business. Our efforts are guided by in-depth scientific understanding of the environmental impact of our operations, as well as by the social and economic needs of the communities in which we operate. Industrial spills or releases are rare; however a spill or release may pose a significant flammability issue. Our operational improvement targets and plans are based on driving incidents with real environmental impact to zero and delivering superior environmental performance.

9. Manufacture of Product
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- **Capacity** – The CAS numbers used for these Fuel Oils are the same as those used by petroleum refineries; thus, their annual production is extremely high. For example, according to the US Environmental Protection Agency, over 1 billion pounds of CAS #64742-90-1 was manufactured in the U.S. in 2005 (the most recent reporting year available).

- **Process** – Fuel Oils are created as part of the cracking of other petroleum streams during the manufacture of chemicals such as benzene.

10. Risk Management

- **Workplace Risk Management** – When using these products, make sure that there is adequate ventilation. If controls do not maintain air concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Always use chemical resistant gloves to protect your hands and skin and always wear eye protection such as chemical goggles. Do not eat, drink, or smoke where this chemical is handled, processed, or stored. Wash hands and skin following contact. If this chemical gets into your eyes, rinse eyes thoroughly for at least 15 minutes with tap water and seek medical attention. Please refer to the Safety Data Sheet for additional safety information.

- **Consumer Risk Management** - These products are not sold directly to the public for general consumer uses. As a result of their use in industrial chemical reactions, consumer exposure is not expected. If exposure should occur, it is expected to be infrequent and of short duration. Always follow manufacturers’ instructions, warnings and handling precautions when using their products. The best way to prevent exposure to vapors is to work in well-ventilated areas.

11. Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use and/or disposal of this chemical and may vary by city, state, country or geographic region. Additional helpful information may be found by consulting the relevant ExxonMobil Safety Data Sheet at:


12. Conclusion Statements

- The Fuel Oils manufactured in chemical plants are generally used as industrial fuels or to make other industrial chemicals. They are not sold to the general public.
- Chemical plant Fuel Oils have the potential to cause adverse health effects; however worker exposures are expected to be low.
- Fuel Oils have the potential to exhibit a high level of aquatic toxicity if released; if released in sufficient quantity, may cause long-term adverse environmental effects.
- Fuel Oils are flammable or combustible liquids; they should be used in closed systems.

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