



What are fuel oils?

Fuel oils are mixtures of refined crude oil. They are often yellowish/light brown in color and have strong odors. Some chemicals in the mixtures evaporate easily and some dissolve in water. They are highly flammable, and can possibly form explosive mixtures in air. Different refining processes produce the different fuel oils, which may be used as fuels for engines, lamps, heaters, furnaces, or stoves, or as solvents. Common fuel oils include kerosene, diesel fuel, jet fuel, and home heating oil.

Who is exposed to fuel oils?

Exposure to vapors occurs when filling your car's fuel tank or using other equipment that runs on fuel oils, such as kerosene stoves and heaters. Soil and water contaminated with fuel oils emit vapors, which can build in basements, crawlspaces and living areas. Exposure may also occur when using contaminated water to bathe or do laundry. Fuel oils can be absorbed through the skin during contact, such as when pumping gas or cleaning up a fuel oils spill. People can also be exposed when handling contaminated soil or water.

How can fuel oils affect my health?

Little is known about the health effects caused by exposure to fuel oils. Breathing small amounts of fuel oils vapors can lead to nose and throat irritation, headaches, dizziness, nausea, vomiting, confusion and breathing difficulties. Symptoms from swallowing small amounts of fuel oils include mouth, throat and stomach irritation, nausea, vomiting, dizziness and headaches. Some effects of skin contact with fuel oils include rashes, redness and swelling. Fuel oils can also damage the nervous system and lungs.

How likely are fuel oils to cause cancer?

The U.S. Department of Health and Human Services (DHHS) and the International Agency for Research on Cancer (IARC) have determined that some fuel oils may cause cancer but others do not have enough research to make that determination. IARC has determined that occupational exposures to fuel oils during petroleum refining are probably carcinogenic to humans.

How do fuel oils affect children?

Children are expected to have the same health effects as adults from exposure to fuel oils. It is not known whether they are more sensitive to fuel oils. There is not enough information available to determine if exposure to fuel oils causes birth defects.

Is there a medical test to determine whether I have been exposed to fuel oils?

There are no medical tests to show whether or not you have been exposed to fuel oils.

How can I reduce the risk of exposure to fuel oils?

You can reduce your exposure to fuel oils by using fuel oils in a well-ventilated area. In occupational settings, the appropriate personal protective equipment (PPE) should be used. Avoid soil and water



that have been contaminated with fuel oils, and do not let children play in contaminated soil. Properly store fuel oils and keep them away from children.

Has the federal government made recommendations to protect human health?

Both the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH) have set standards for occupational exposure to fuel oils. OSHA's permissible exposure level (PEL) is 400 parts per million (ppm), and NIOSH recommends that work place air levels not exceed 350 ppm for a 40-hour workweek.

Where can I get more information on fuel oils?

- If you have concerns about fuel oils, contact your healthcare provider.
- Call your local health department. A directory of local health departments is located at <https://www.vdh.virginia.gov/local-health-districts/>. Contact the Virginia Department of Health at (804) 864-8127 or at toxicology@vdh.virginia.gov.
- Visit the Agency for Toxic Substances and Disease Registry website at <https://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=91>.

October 2018