Product Safety Assessment

UCONALL™ Lubricants

Product Safety Assessment documents are available at www.dow.com/productsafety/finder/.

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Names
- UCONALL™ lubricants
- UCONALL Lubricant 32
- UCONALL Lubricant 46
- UCONALL Lubricant 68
- UCONALL Lubricant 150
- UCONALL Lubricant 220
- UCONALL Lubricant 460

Product Overview
- UCONALL™ lubricants are derived from polypropylene glycol-based fluids. Typically they are brown in color with a mild odor. They are produced in six viscosity grades. For further details, see Product Description.
- UCONALL lubricants are designed for extreme-pressure service in compressors, drives, gears, anti-wear hydraulics, mobile equipment, and pumps. For further details, see Product Uses.
- UCONALL lubricants are not sold for direct consumer use. Those working with these products in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. For further details, see Exposure Potential.
- Eye contact with these products may result in slight, temporary irritation. Corneal injury is unlikely. Brief skin contact may cause slight irritation with local redness. Prolonged skin contact is unlikely to result in absorption of harmful amounts. Products contain components that have caused allergic skin reactions in animals and humans. Very low toxicity if swallowed. Repeated ingestion of similar materials has been reported to affect the liver. At room temperature, exposure to vapor is minimal due to low volatility. A single exposure is not likely to be hazardous. For further details, see Health Information.
- The major components of UCONALL lubricants, polypropylene glycol polymers, range from inherently to readily biodegradable, are not expected to accumulate in the food chain (low bioconcentration potential), and range from slightly to moderately toxic to fish and other aquatic organisms on an acute basis. For further details, see Environmental Information.
- UCONALL lubricants are stable at recommended storage and use temperatures, but can decompose at elevated temperatures. Generation of gas during decomposition can cause pressure build-up in closed systems. Store these products in 316 stainless steel, carbon-steel,

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glass-lined, polypropylene-lined, polyethylene-lined, stainless-steel, or Teflon containers. Avoid contact with strong acids, bases, and oxidizers. For further details, see Physical Hazard Information.

Manufacture of Product

- **Capacity** – The main components of UCONALL™ lubricants are proprietary polypropylene glycols. These polypropylene glycols are manufactured by The Dow Chemical Company at facilities in South Charleston, West Virginia (USA).
- **Process** – UCONALL lubricants are formulated in batch operations using proprietary Dow materials and technology.

Product Description

UCONALL™ lubricants are typically brown with a mild odor. They are produced in six viscosity grades represented by the product numbers 32, 46, 68, 150, 220, and 460. UCONALL lubricants have high viscosity indices that are not affected by high rates of shear.

Product Uses

UCONALL™ lubricants are designed for extreme-pressure service in compressors, drives, gears, anti-wear hydraulics, mobile equipment, and pumps. They are available in viscosity ranges to suit many industrial-gear applications, including helical, herringbone, bevel, spiral-bevel, spur, and worm-gear designs.

Exposure Potential

UCONALL™ lubricants are not sold for direct consumer use. Based on the uses for these lubricants, the public could be exposed through:

- **Workplace exposure** – Exposure can occur either in a facility that formulates UCONALL lubricants or in the various industrial or manufacturing facilities that use these products. They are produced, distributed, stored, and used in closed systems. Those working with UCONALL lubricants in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. Each manufacturing facility should have a thorough training program for employees and appropriate work processes, ventilation, and safety equipment in place to limit exposure. See Health Information.
- **Consumer exposure to products containing UCONALL lubricants** – These fluids are sold only for industrial use. The potential for consumer exposure in finished products is considered negligible. See Health Information.
- **Environmental releases** – Since UCONALL lubricants are used in closed systems, the potential for release to the environment is low. The major components of UCONALL lubricants, polypropylene glycol polymers, are slightly soluble in water and when introduced, will have a tendency to float on water and slowly dissolve. Because these components range from inherently to readily biodegradable, they are expected to be removed from water and soil environments, including sewage treatment plants. In the event of a spill, the focus is on containing the spill to prevent contamination of soil and surface or ground water. For small spills, these products should be absorbed with materials such as sand. See Environmental, Health, and Physical Hazard Information.
• **Large release** – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, the material should be captured, collected, and reprocessed or disposed of according to applicable governmental requirements. Only trained and properly protected personnel should be involved in clean-up operations. See Environmental, Health, and Physical Hazard Information.

• **In case of fire** – Deny any unnecessary entry into the area and consider the use of unmanned hose holders. Use fine water spray or fog, carbon-dioxide or dry-chemical extinguishers, or foam to fight the fire. Alcohol-resistant foams are preferred. Do not use a direct water stream to fight fire. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. Containers may rupture from gas generation in a fire situation. Immediately withdraw all personnel from the area in case of rising sounds from venting safety devices or discoloration of the containers. Violent steam generation or eruption may occur upon application of direct stream to hot liquids. During a fire, smoke may contain the original material in addition to toxic and/or irritating combustion products, including carbon monoxide, carbon dioxide, or nitrogen oxides. Follow emergency procedures carefully. See Environmental, Health, and Physical Hazard Information.

For more information, request the Safety Data Sheet from the Dow Customer Information Group.

**Health Information**

Health information for UCONALL™ lubricants is summarized on the relevant Safety Data Sheets. It is important to note that health risks associated with individual products may vary based on their formulation or intended use. The Safety Data Sheet is the preferred source for specific health information. These products may also contain minor components or additives that have additional health risks. An overview of health information for UCONALL lubricants appears below.

**Eye contact** – Contact may result in slight, temporary eye irritation. Corneal injury is unlikely.

**Skin contact** – Brief contact may cause slight skin irritation with local redness, but is unlikely to result in absorption of harmful amounts. Some products contain components that have caused allergic skin reactions in animals and humans.

**Ingestion** – These products have very low toxicity if swallowed.

**Inhalation** – At room temperature, exposure to vapor is minimal due to low volatility. A single exposure is not likely to be hazardous.

For more information, request the Safety Data Sheet from the Dow Customer Information Group.

**Environmental Information**

Environmental information for UCONALL™ lubricants is summarized on the relevant Safety Data Sheets. It is important to note that environmental risks associated with individual products may vary based on their formulation or intended use. The Safety Data Sheet is the preferred source for specific information. These products may contain minor components or additives that have additional environmental risks.

The major components of UCONALL lubricants, polypropylene glycol polymers, are slightly soluble in water with low volatility. Once introduced, these components will have a tendency to float on water and slowly dissolve. Many formulations also contain N-phenyl-α-naphthylamine which has
low water solubility and low volatility. Once introduced into water, this compound will also tend to remain in water, but has a moderate tendency to bind to soil or sediment.

The polypropylene glycol polymers and N-phenyl-α-naphthylamine are unlikely to persist in the environment. These compounds range from inherently to readily biodegradable, which suggests they will be removed from water and soil environments, including biological wastewater treatment plants.

The polypropylene glycol polymers are not likely to accumulate in the food chain (bioconcentration potential is low) due to their high molecular weight. The polymers range from slightly to moderately toxic to fish and other aquatic organisms on an acute basis. N-phenyl-α-naphthylamine has a moderate bioconcentration potential and is toxic to fish on an acute basis.

For more information, request the Safety Data Sheet from the Dow Customer Information Group.

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Physical Hazard Information

UCONALL™ lubricants are stable at recommended storage and use temperatures, but can decompose at elevated temperatures. Decomposition products depend on temperature, air supply, and the presence of other materials and can include aldehydes, alcohols, ethers, hydrocarbons, ketones, organic acids, and/or polymer fragments.

Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Material spilled on hot, fibrous insulation may reduce the autoignition temperature, increasing the potential for spontaneous combustion.

Store materials in stainless steel, carbon-steel, glass-lined, polypropylene-lined, or Teflon containers. Avoid contact with strong acids, bases, and oxidizers.

For more information, request the Safety Data Sheet from the Dow Customer Information Group.

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Regulatory Information

 Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of UCONALL™ lubricants. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Safety Data Sheet, Technical Data Sheet, or Contact Us.

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Additional Information

- Safety Data Sheets: request from the Dow Customer Information Group.
- Contact Us (www.dow.com/ucon/contact/index.htm)

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For more business information about UCONALL™ lubricants, visit the Dow web site for UCON Fluids and Lubricants at www.dow.com/ucon/formulated/lubricants/mgb.htm.

References

1 UCONALL™ 32 Lubricant Material Safety Data Sheet, The Dow Chemical Company
2 UCONALL 46 Lubricant Material Safety Data Sheet, The Dow Chemical Company
3 UCONALL 68 Lubricant Material Safety Data Sheet, The Dow Chemical Company
4 UCONALL 150 Lubricant Material Safety Data Sheet, The Dow Chemical Company
5 UCONALL 220 Lubricant Material Safety Data Sheet, The Dow Chemical Company
6 UCONALL 460 Lubricant Material Safety Data Sheet, The Dow Chemical Company
7 UCON™ Fluids and Lubricants, Machinery, Gear & Bearing Lubricants web site: (http://www.dow.com/ucon/formulated/lubricants/mgb.htm).
8 UCON™ TPEG 500 Material Safety Data Sheet, The Dow Chemical Company
NOTICES:

As part of its 2015 Sustainability Goals, Dow has committed to make publicly available safety assessments for its products globally. This product safety assessment is intended to give general information about the chemical (or categories of chemicals) addressed. It is not intended to provide an in-depth discussion of health and safety information. Additional information is available through the relevant Safety Data Sheet, which should be consulted before use of the chemical. This product safety assessment does not replace required communication documents such as the Safety Data Sheet.

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