Product Safety Assessment
**UCON™ Compressor Lubricants**


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Names

- UCON™ compressor lubricants
- UCON Compressor Lubricant PE-300
- UCON Compressor Lubricant PE-320 series
- UCON Compressor Lubricant RSC-155
- UCON Compressor Lubricant R-1
- UCON Compressor Lubricant R-4
- UCON Compressor Lubricant PCL-270
- UCON Compressor Lubricant R-10

Product Overview

- UCON™ compressor lubricants are high-performance synthetic lubricants formulated from polyalkylene glycol base stocks. These products are colorless to yellow liquids with a mild odor. Compared to conventional mineral-oil-based lubricants, UCON compressor lubricants offer superior lubricity without additives, greater stability at high temperatures, and greater resistance to sludge and varnish formation. For further details, see Product Description.
- UCON compressor lubricants are formulated for use in numerous industrial applications. Centrifugal, reciprocating, rotary-screw, sliding vane, and other types of compressors can be lubricated with these products. Applications include helium, nitrogen, hydrogen, carbon dioxide, natural gas, ethylene, stack gases, landfill gas, and fluorocarbon refrigerant. For further details, see Product Uses.
- UCON compressor lubricants are for commercial use only. Worker exposure is possible at a facility that manufactures these lubricants or during transport or use. Engineering controls and personal protective equipment reduce exposure risk. Dow food-safe compressor lubricants are formulated with FDA-sanctioned ingredients (FDA Regulation 21 CFR 178.3570). For further details, see Exposure Potential.
- Elevated temperatures may generate product vapor levels sufficient to cause eye irritation. Effects may include discomfort and redness. Mist may cause eye irritation. These products are essentially nonirritating to the skin. Prolonged skin contact is unlikely to result in absorption of harmful amounts. At room temperature, exposure to vapor is minimal. Vapor from heated material or mist may cause respiratory irritation and other effects. For further details, see Health Information.
The polyalkylene glycol components of these lubricant formulations are biodegradable, not likely to accumulate in the food chain, and are practically nontoxic to fish and other aquatic organisms. For further details, see Environmental Information.

UCON™ compressor lubricants are thermally stable at recommended storage and use conditions. Products can decompose at elevated temperatures, creating pressure in closed systems. Avoid contact with strong acids, strong bases, and strong oxidizers. For further details, see Physical Hazard Information.

Manufacture of Product

- **Locations** – Dow manufactures polyalkylene glycols, the major component of UCON™ compressor lubricants, at facilities in South Charleston, West Virginia (USA).
- **Process** – UCON compressor lubricants are formulated in batch operations using proprietary Dow materials and technology.

Product Description

UCON™ compressor lubricants are high-performance synthetic lubricants formulated from polyalkylene glycol base stocks. These products offer excellent lubricity, high-temperature stability, resistance to sludge and varnish formation, good additive response, and adaptable solubility.

Product Uses

UCON™ compressor lubricants provide cylinder lubrication for a broad range of gas compressors including centrifugal, reciprocating, rotary-screw, sliding vane, hyper-compressors, intensifiers, and others. The following gases are compatible with UCON compressor lubricants:

- Helium
- Hydrogen
- Natural gas
- Stack gases
- Fluorocarbon refrigerant
- Nitrogen
- Carbon dioxide
- Ethylene
- Landfill gas

UCON compressor lubricants PE-300, and PE-320 series are registered as safe for indirect food contact by the U.S. Food and Drug Administration (FDA) Regulation 21 CFR 178.3570.

Exposure Potential

UCON™ compressor lubricants are used for industrial applications. Based on the uses for these products, the public could be exposed through:

- **Workplace exposure** – Exposure can occur in facilities that manufacture UCON compressor lubricants, during transport, or in the various industrial facilities that use these lubricants. These materials are produced, distributed, and stored in closed systems. Those working with UCON 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 and safety equipment in place to limit exposure. See Health Information.
• Consumer exposure to UCON™ compressor lubricants – UCON compressor lubricants are commercial products for industrial use. UCON compressor lubricants used in food-processing applications are made with FDA-sanctioned ingredients and registered as safe for incidental food contact under FDA Regulation 21 CFR 178.3570. See Health Information.

• Environmental releases – The major components of UCON compressor lubricants, polyalkylene glycols, are water soluble and have low volatility. When introduced to water, these materials will have a tendency to remain in water. Because polyalkylene glycols are 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. See Environmental, Health, and Physical Hazard Information.

• Large release – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, evacuate the area. Contain spilled material if possible. Collect recovered material in suitable and properly labeled containers. Use appropriate safety equipment. See Environmental, Health, and Physical Hazard Information.

• In case of fire – Keep people away. Isolate the fire and deny unnecessary entry. Fight the fire from a protected area or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Use water fog or fine spray, dry-chemical or carbon-dioxide extinguishers, or foam to fight the fire. A direct water stream may spread the fire. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. 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

Eye contact – Elevated temperatures may generate vapor levels sufficient to cause eye irritation. Effects may include discomfort and redness. Mist may cause eye irritation.

Skin contact – Contact is essentially nonirritating to the skin. Prolonged contact is unlikely to result in absorption of harmful amounts.

Inhalation – At room temperature, exposure to vapor is minimal due to low volatility. If material is heated or an aerosol or mist is produced, concentrations may be attained that are sufficient to cause respiratory irritation and other effects.

Ingestion – These products have very low toxicity if swallowed. Harmful effects are not anticipated from swallowing small amounts.

Repeated exposure – Repeated exposures are not anticipated to cause significant adverse effects.

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

Environmental Information

Environmental information for UCON™ compressor lubricants is summarized on the relevant Safety Data Sheets. It is important to note that environmental properties associated for individual products may vary based on their formulation or intended use. The Safety Data Sheet is the

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preferred source for specific environmental information. These products may also contain minor
components or additives that have additional environmental risks. An overview of environmental
information for the major component of UCON™ compressor lubricants appears below.

UCON compressor lubricants are nonvolatile (do not evaporate) and are completely soluble in
water. Product released to water or soil would tend to remain there and not volatilize to the air.

The major component of UCON compressor lubricants, polyalkylene glycols or their derivatives
are unlikely to persist in the environment. These compounds are biodegradable, which suggests
they will be removed from water and soil environments, including biological wastewater treatment
plants.

Because of their water solubility and high molecular weight, these lubricants are not expected to
accumulate in the food chain (low bioconcentration potential). Polyalkylene glycols are practically
nontoxic to fish and other aquatic organisms 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**

UCON™ compressor lubricants are thermally stable under recommended storage and use
conditions. These products can decompose at elevated temperatures. Generation of gas during
decomposition can cause pressure build-up in closed systems. Decomposition products may
include aldehydes, alcohols, ethers, hydrocarbons, ketones, organic acids, polymer fragments,
and other compounds.

Avoid contact with strong acids, strong bases, and strong 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
UCON™ compressor 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**

- Request the relevant Safety Data Sheet from the Dow Customer Information Group at
  (www.dow.com/assistance/dowcig.htm)
- Contact Us (www.dow.com/ucon/contact/index.htm)
- Dow website – UCON™ Fluids and Lubricants – Compressor Lubricants
  (www.dow.com/ucon/formulated/lubricants/compressor.htm)
- **UCON Fluids and Lubricants**, Brochure, The Dow Chemical Company, Form No. 118-01346-
  1101 AMS, November 2001 (http://www.dow.com/search.aspx?q=118-01346-
  1101+AMS&sa=)
- **FDA Status of UCON and SYNALOX™ Fluids and Lubricants**, The Dow Chemical Company,
  (http://www.dow.com/polyglycols/synalox/resource/index.htm)

For more business information about UCON compressor lubricants, visit the Dow UCON Fluids
References
1 Dow website – UCON™ Fluids and Lubricants – Compressor Lubricants: (www.dow.com/ucon/formulated/lubricants/compressor.htm)
2 UCON Compressor Lubricant PE-320 Material Safety Data Sheet, The Dow Chemical Company
3 UCON Compressor Lubricant PCL-270 Material Safety Data Sheet, The Dow Chemical Company
6 FDA Status of UCON and SYNALOX™ Fluids and Lubricants, The Dow Chemical Company, Form No. 118-01616-207 AMS
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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