Product Overview

- **UCON™ Lubricant 50-HB-280-XY23** is a red to brown colored liquid with a mild odor. It is composed primarily of polyalkylene glycol with small amounts of N-phenyl-alpha-naphthylamine and a proprietary carboxylic acid derivative. It is a water-soluble liquid with low volatility (does not readily evaporate). For further details, see **Product Description**.

- **UCON Lubricant 50-HB-280-XY23** is used in processes that require corrosion protection for copper and iron materials and in processes that require high-temperature stability of the lubricant. For further details, see **Product Uses**.

- Worker exposure to **UCON Lubricant 50-HB-280-XY23** is possible during manufacture and use. **UCON Lubricant 50-HB-280-XY23** is not sold for consumer use. Exposure to the general public is unlikely. For further details, see **Exposure Potential**.

- Eye contact may cause slight, temporary irritation. Brief skin contact is essentially nonirritating. At room temperature, exposure to vapor is unlikely due to low volatility. Repeated exposure to mists may cause irritation of the upper respiratory tract (nose and throat) and lungs. Harmful effects are not anticipated from swallowing small amounts. For the minor components, skin contact may cause an allergic skin reaction. For further details, see **Health Information** and the relevant **Safety Data Sheet**.

- The major component, polyalkylene glycol, is unlikely to persist in the environment. It is readily biodegradable, water-soluble, and exhibits low volatility. If released to the environment, this product will tend to migrate toward or remain in water with minimal tendency to bind to soil, sediments, or suspended solids. The major component is essentially nontoxic (LC50/EC50 greater than 100 mg/L) to aquatic organisms on an acute basis. The minor component, N-phenyl-alpha-naphthylamine, is inherently biodegradable and has a moderate to high potential to bioconcentrate. This minor component, N-phenyl-alpha-naphthylamine, is highly toxic (LC50/EC50 between 0.1 and 1.0 mg/L) to aquatic organisms on an acute basis. For further details, see **Environmental Information**.

- **UCON Lubricant 50-HB-280-XY23** is thermally stable at recommended storage and use temperatures. Avoid contact with strong acids, strong bases, and strong oxidizers. For further details, see **Physical Hazard Information**.
Product Safety Assessment: UCON™ Lubricant 50-HB-280-XY23

Manufacture of Product
- **Locations** – The Dow Chemical Company manufactures UCON™ Lubricant 50-HB-280-XY23 at facilities in South Charleston, West Virginia (USA).
- **Process** – UCON Lubricant 50-HB-280-XY23 is produced by reacting ethylene oxide and propylene oxide initiated with butyl alcohol. The result is a copolymer with the general structure shown below:

\[
\begin{align*}
\text{Butanol} & \quad \text{Propylene oxide} & \quad \text{Ethylene oxide} & \quad \text{UCON 50-HB Fluid} \\
\end{align*}
\]

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Product Description
UCON™ Lubricant 50-HB-280-XY23 is a red to brown colored liquid with a mild odor and low volatility (does not evaporate easily at room temperature). It is a mixture containing greater than 95% (by weight) polyalkylene glycol. The product also contains N-phenyl-alpha-naphthylamine and a proprietary carboxylic acid derivative. UCON Lubricant 50-HB-280-XY23 is highly soluble in water.

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Product Uses
UCON™ Lubricant 50-HB-280-XY23 is used in processes that require corrosion protection for copper and iron materials and in processes that require high-temperature stability of the lubricant.

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Exposure Potential
UCON™ Lubricant 50-HB-280-XY23 is used for industrial applications and not sold for direct consumer use. Based on the uses for this product, individuals could be exposed through:

- **Workplace exposure** – Exposure can occur either in facilities that manufacture UCON Lubricant 50-HB-280-XY23 or in the various industrial or manufacturing facilities that use this product. Those working with this product in manufacturing operations could be exposed during maintenance, sampling, testing, use, or other procedures. Each facility that manufactures or uses this product 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 UCON Lubricant 50-HB-280-XY23** – Dow does not sell UCON Lubricant 50-HB-280-XY23 for direct consumer use. It is typically used in an industrial setting for lubricating metal parts and pieces where corrosion prevention and high-temperature stability of the lubricant is required. Individual consumer exposure to this product is unlikely. See Health Information.
- **Environmental releases** – Due to its low volatility and high water solubility, UCON Lubricant 50-HB-280-XY23 released into the environment will tend to migrate toward or remain in water. This product is readily biodegradable. The major component is practically nontoxic (LC50/EC50 greater than 100 mg/L) to aquatic organisms on an acute basis. A minor component, N-phenyl-alpha-naphthylamine, is highly toxic (LC50/EC50 between 0.1 and 1.0 mg/L) to aquatic organisms on an acute basis. This product will be rapidly degraded in various environmental media such as water, soil/sediment, and biological wastewater-treatment facilities. In the event of a spill, the focus is to prevent the product from entering into soil, ditches, sewers, waterways, or groundwater. 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 product should be captured, collected, and reprocessed or disposed of according to applicable governmental requirements. Use appropriate safety equipment. 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 water spray or fog, carbon-dioxide or dry-chemical extinguishers, or foam to fight the fire. Alcohol-resistant foams (ATC) are preferred. Use of a direct water stream may spread the fire. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. During a fire, smoke may be toxic and/or irritating. Immediately withdraw all personnel from the area.
in case of rising sounds from venting safety device or discolorations of the container. Keep fire water out of waterways and sewers to minimize the potential for environmental damage. Follow emergency procedures outlined in the Safety Data Sheet carefully. See Environmental, Health, and Physical Hazard Information.

For more information, see the relevant Safety Data Sheet.

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Health Information

Eye contact – Contact may cause slight, temporary eye irritation. Corneal injury is unlikely.

Skin contact – Brief contact is essentially nonirritating. Prolonged contact is unlikely to result in absorption of harmful amounts. Contact with some of the minor components may cause an allergic skin reaction.

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

Ingestion – Toxicity is very low if swallowed. Swallowing small amounts incidentally as a result of normal handling operations is not likely to cause injury.

Repeated exposure – Mist may cause irritation of the upper respiratory tract (nose and throat) and lungs. The product contains a component that in animal testing have been shown to affect the blood.

For more information, see the relevant Safety Data Sheet.

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Environmental Information

UCON™ Lubricant 50-HB-280-XY23 has low volatility (does not evaporate easily) and the major component is highly water soluble at room temperature. If released to the environment, this product will tend to migrate toward or remain in water with minimal tendency to bind to soil, sediment, or suspended solids.

The major component, polyalkylene glycol, is unlikely to persist in the environment. It is expected to be readily biodegradable (65% degraded after 28 days per OECD 301B testing for a similar material), which suggests it will be rapidly biodegradable in water and soil environments, including biological wastewater-treatment facilities. This component is not likely to bioaccumulate in the food chain in the environment (bioconcentration potential is low). Polyalkylene glycol is practically nontoxic (LC$_{50}$/EC$_{50}$ greater than 100 mg/L) to aquatic organisms on an acute basis.

A minor component, N-phenyl-alpha-naphthylamine, is considered inherently biodegradable according to OECD test guidelines, which suggests it is not persistent in the environment. The bioconcentration potential for this component is moderate. This component is highly toxic (LC$_{50}$/EC$_{50}$ between 0.1 and 1 mg/L) to aquatic organisms on an acute basis.

This product does not contain components that are considered to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB).

For more information, see the relevant Safety Data Sheet.

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Physical Hazard Information

UCON™ Lubricant 50-HB-280-XY23 is thermally stable at recommended storage and use temperatures and pressures. Exposure to elevated temperatures can cause this product to decompose. Generation of gas during decomposition can cause pressure build-up in closed systems. Decomposition products depend on temperature, air supply, and the presence of other materials and can include aldehydes, alcohols, ethers, hydrocarbons, ketones, organic acids, and polymer fragments. UCON Lubricant 50-HB-280-XY23 is incompatible with strong acids, strong bases, and strong oxidizers. Contact with these materials should be avoided.

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For more information, see the relevant Safety Data Sheet.

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Regulatory Information
Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of UCON™ Lubricant 50-HB-280-XY23. 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 Sheet (www.dow.com/webapps/msds/msdssearch.aspx)
- Contact Us (www.dow.com/ucon/contact/index.htm)
- The Dow Chemical Company. UCON™ Lubricant HB-280-XY23. Form No. 118-01679-1211 (www.dow.com/ucon/tech/special.htm)


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References
1 UCON™ Lubricant 50-HB-280-XY23, Safety Data Sheet, The Dow Chemical Company

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