Product Safety Assessment

**UCON™ Lubricant LB Series**  
**SYNALOX™ 100-xB Lubricants**  
**FLUENT Brand Polyglycols**


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### Names
- CAS No. 9003-13-8 Polypropylene glycol
- Poly(oxypropylene) Polyalkylene glycol (PAG)

**SYNALOX™ Product Name**
- SYNALOX 100-15B Lubricant
- SYNALOX 100-20B Lubricant
- SYNALOX 100-30B Lubricant
- SYNALOX 100-40B Lubricant
- SYNALOX 100-50B Lubricant
- SYNALOX 100-85B Lubricant
- SYNALOX 100-100B Lubricant
- SYNALOX 100-120B Lubricant
- SYNALOX 100-150B Lubricant

**UCON™ Product Name**
- UCON Lubricant LB-65
- UCON Lubricant LB-135
- UCON Lubricant LB-165
- UCON Lubricant LB-250
- UCON Lubricant LB-285
- UCON Lubricant LB-385
- UCON Lubricant LB-525
- UCON Lubricant LB-625
- UCON Lubricant LB-1145
- UCON Lubricant LB-1715

**FLUENT Product Name**
- FLUENT-FAX™ 257 Polyglycol
- FLUENT-LUB™ 305 Polyglycol
- FLUENT-LUB 318 Polyglycol
- FLUENT-LUB 347 Polyglycol
- FLUENT-LUB 360 Polyglycol

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### Product Overview
- UCON Lubricant LB Series and SYNALOX™ 100-xB Lubricants are butanol-initiated polymers of all oxypropylene groups (propylene oxide). These water-insoluble products are colorless to yellow liquids with a mild odor.¹ For further details, see [Product Description](#).
- These lubricants are used as base fluids to formulate such products as calender and gear lubricants, mold-release agents, plasticizers, greases, etc., and chemical intermediates.² For further details, see [Product Uses](#).
- The UCON Lubricant LB Series and SYNALOX 100-xB Lubricants are for commercial use. Worker exposure is possible at facilities that manufacture or formulate these products or during transport or use. Dow does not sell these products for direct consumer use, so consumer exposure is unlikely.³ For further details, see [Exposure Potential](#).

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• Eye contact may cause slight temporary eye irritation. Skin contact may cause slight irritation with local redness. At room temperature, exposure to vapor is minimal due to low volatility. These products have low toxicity if swallowed. For further details, see Health Information.
• This family of lubricants is non-volatile (does not evaporate) and is generally insoluble in water. These products will biodegrade under environmental conditions, and will be efficiently removed during treatment in biological wastewater-treatment facilities. They are not likely to accumulate in the food chain and are moderately to practically non-toxic to aquatic organisms on an acute basis. For further details, see Environmental Information.
• These lubricants are stable under recommended storage and normal use conditions; however, elevated temperatures can cause these products to decompose. For further details, see Physical Hazard Information.

Manufacture of Product

• Locations – The Dow Chemical Company manufactures the UCON™ Lubricants LB Series at facilities in South Charleston, West Virginia, USA. Foreign affiliates of Dow produce SYNALOX™ 100-xB Lubricants at facilities in Europe.
• Process – UCON™ Lubricant LB Series and SYNALOX™ 100-xB Lubricants are polyalkylene glycol polymers formed by initiating the polymerization of propylene oxide with butanol using proprietary methods and chemistries. The reaction is shown below.

Product Description

UCON™ Lubricant LB Series and SYNALOX™ 100-xB Lubricants are colorless to yellow liquids with a mild odor. They feature high viscosity index, low pour point, clean burn properties, low foam characteristics and low surface tension. These lubricants are insoluble in water and exhibit miscibility in a wide range of hydrocarbon solvents and oils. SYNALOX lubricants are marketed primarily in Europe. The corresponding UCON™ Lubricant LB Series products are available in other regions.

Product Uses

UCON™ Lubricant LB Series and SYNALOX™ 100-xB Lubricants are used as lubricant base stocks in dozens of industries where they contribute a variety of performance properties. For example, these products are used to formulate lubricants and fluids for the following applications:
- Calender lubricants
- Mold-release agents
- Plasticizers
- Gear lubricants
- Compressor lubricants
- Chemical intermediates

Exposure Potential

UCON™ Lubricant LB Series and SYNALOX™ 100-xB Lubricants are used in industrial and commercial facilities. Based on the uses for these products, individuals could be exposed through:
Workplace exposure – Exposure can occur in facilities that manufacture or formulate these products, during transport, or in the various industrial facilities that use these products. They are produced, distributed, and stored in closed systems. Those working with these products 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 products containing UCON™ Lubricant LB Series and SYNALOX™ 100-xB Lubricants – These lubricants are intended for industrial use. Dow does not sell these lubricants for direct consumer use, so consumer exposure is unlikely. See Health Information.

Environmental releases – Because UCON™ Lubricant LB Series and SYNALOX 100-xB Lubricants are typically used in closed systems, the potential for release to the environment is low. In the event of a spill, the focus is on containing the spill to prevent spread of contamination to soil, surface water, or groundwater. These products have low volatility and are insoluble in water, so they will remain in the water or soil to which they are emitted. These products will biodegrade under environmental conditions, with rate of degradation generally decreasing with increased molecular weight. These substances will be efficiently removed during treatment in biological wastewater-treatment facilities. These products range from moderately- to practically non-toxic to aquatic organisms on an acute basis. See Environmental, Health, and Physical Hazard Information.

Large release – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, contain the spilled product if possible. Collect recovered product 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. Alcohol-resistant foams are preferred. 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

Health information for UCON™ Lubricant LB Series and SYNALOX™ 100-xB 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 these products appears below.

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

Skin contact – Brief contact may cause slight irritation with local redness. Prolonged skin contact is unlikely to result in absorption of harmful amounts.

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

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Ingestion – These products have low toxicity if swallowed. Swallowing small amounts incidental to handling is not likely to cause injury; however, swallowing larger amounts may cause injury.

Repeated exposure – Based on available data, repeated exposure is not anticipated to cause significant adverse effects.

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

Environmental Information

UCON™ Lubricant LB and SYNALOX™ 100-xB Lubricants have low volatility (do not evaporate quickly). These products are insoluble and tend to float on the surface when released into water.

UCON™ Lubricant LB Series and SYNALOX 100-xB Lubricants will biodegrade under environmental conditions, with the rate of degradation generally decreasing with increased molecular weight. These substances will be efficiently removed during treatment in biological wastewater-treatment facilities.

UCON™ Lubricant LB Series and SYNALOX 100-xB Lubricants are not expected to accumulate in the food chain (low potential for bioconcentration). They range from moderately to practically non-toxic to aquatic organisms on an acute basis (LC₅₀/EC₅₀ between 10 and 100 mg/L for the most sensitive species tested). Thus, these products are not regarded as exhibiting persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) properties.

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

Physical Hazard Information

UCON™ Lubricant LB Series and SYNALOX™ 100-xB Lubricants are stable under recommended storage and normal use conditions; however, elevated temperatures can cause these products to decompose. Generation of gas during decomposition can cause pressure build-up in closed systems. Avoid contact with strong acids, strong bases, or strong oxidizers.

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

Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of UCON™ Lubricant LB Series and SYNALOX™ 100-xB 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.

Additional Information

- Request the Safety Data Sheet from the Dow Customer Information Group (www.dow.com/assistance/dowcig.htm)
- Contact Us (www.dow.com/polyglycols/synalox/contact/contact.htm)
• SYNALOX™ Lubricants: High-Performance Polyglycols for Demanding Applications, The Dow Chemical Company, Form No. 118-01453-0702 AMS (www.dow.com/polyglycols/synalox/resource/literature.htm)


• Beatty, Daryl, and Martin Greaves, “PAGs are Rising to the Top of the Synthetic Market,” reprint from Machinery Lubrication, September/October 2006, pages 36–40 (Dow Form No. 118-01726) (http://www.dow.com/products/)


For more business information about UCON™ Lubricant LB Series and SYNALOX™ 100-xB Lubricants, visit the web sites for UCON Fluids and Lubricants at www.dow.com/ucon/ or SYNALOX Lubricants at www.dow.com/polyglycols/synalox/.

References

1 SYNALOX™ Lubricants: High-Performance Polyglycols for Demanding Applications, The Dow Chemical Company, Form No. 118-01453-0702 AMS

2 SYNALOX™ 100-B Series Lubricants, Technical Data Sheet, The Dow Chemical Company

3 SYNALOX™ 100-50B Lubricant Safety Data Sheet, The Dow Chemical Company

4 UCON™ Lubricant LB-1145 Material Safety Data Sheet, The Dow Chemical Company


6 UCON™ Lubricant LB-1145 Material Safety Data Sheet, The Dow Chemical Company

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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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