Product Safety Assessment
SYNALOX™ 40-D Lubricants

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Names

SYNALOX™ Product Name
- SYNALOX 40-D50 Lubricant
- SYNALOX 40-D100 Lubricant
- SYNALOX 40-D150 Lubricant
- SYNALOX 40-D220 Lubricant
- SYNALOX 40-D300 Lubricant
- SYNALOX 40-D700 Lubricant
- SYNALOX 40-D Base Fluid

Product Overview

- SYNALOX™ 40-D Lubricants are synthetic lubricants based on polyalkylene glycol (PAG). These products are water-soluble lubricant base stocks. SYNALOX 40-D Lubricants are manufactured as colorless to yellow liquids with a mild odor.¹ For further details, see Product Description.
- SYNALOX 40-D Lubricants are used as base fluids to formulate gear oils, circulation fluids, metalworking fluids, industrial-grade lubricants, compressor oils, textile lubricants, greases, and food-grade lubricants.² For further details, see Product Uses.
- SYNALOX 40-D Lubricants are for commercial use. Worker exposure is possible at a facility that manufactures or formulates these lubricants or during transport or use. Because some SYNALOX 40-D Lubricants are formulated into food-grade lubricants, consumers could ingest trace amounts of these products by consuming foods or beverages processed with equipment that uses them. SYNALOX 40-D Lubricants used for food-contact applications comply with the U.S. Food and Drug Administration (FDA) 21CFR Regulations.¹ For further details, see Exposure Potential.
- Eye contact may cause slight temporary eye irritation. Skin contact is essentially nonirritating. At room temperature, exposure to vapor is minimal due to low volatility. Very low toxicity if swallowed.¹ For further details, see Health Information.

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• SYNALOX™ 40-D Lubricants are biodegradable, unlikely to accumulate in the food chain (bioaccumulation potential is low), and are practically nontoxic to fish and other aquatic organisms.¹,² For further details, see Environmental Information.

• SYNALOX 40-D Lubricants are stable at normal storage and use temperatures; however, elevated temperatures can cause these products to decompose.³ For further details, see Physical Hazard Information.

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Manufacture of Product⁴

• Location – The Dow Chemical Company manufactures SYNALOX™ 40-D Lubricants at facilities in the USA and in Europe.

• Process – SYNALOX 40-D Base Fluids are diol-initiated alkoxylated random copolymers formed by reacting ethylene oxide with propylene oxide using proprietary methods and chemistries.

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Product Description⁴

SYNALOX™ 40-D Lubricants are alkoxyate-based synthetic lubricants developed for use as high-performance base stocks. They feature high viscosity index, low pour point, clean burn properties, low surface tension, low foam characteristics, and many other attributes. SYNALOX 40-D Lubricants are soluble in cold water, with decreased solubility at higher temperatures (inverse solubility). SYNALOX Lubricants are marketed primarily in Europe.

ISO Viscosity Grades 150-1000 have been registered with NSF International, a global company promoting public health, safety and protection of the environment, as HX-1 ingredients for use in H1 lubricants (i.e., incidental food contact).

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Product Uses⁴

SYNALOX™ 40-D Lubricants are used as lubricant base stocks in dozens of industries where they contribute a variety of performance properties. SYNALOX 40-D Lubricants are used to formulate lubricants and fluids for the following applications:

- Gear lubricants
- Metalworking fluids
- Compressor lubricants
- Food-grade lubricants
- Textile lubricants
- Industrial-grade lubricants
- Circulation fluids
- Greases

Other applications include use as a lubricant or mold-release agent for rubber hoses and tires and as a gear and bearing lubricant, especially in high-temperature service or under high loads.

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Exposure Potential

SYNALOX™ 40-D Series Lubricants are used in industrial and commercial facilities. Based on the uses for these products, the public could be exposed through:

- **Workplace exposure** – Exposure can occur in facilities that manufacture or formulate SYNALOX™ Lubricants, during transport, or in the various industrial facilities that use these lubricants. 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 SYNALOX™ 40-D Lubricants** – SYNALOX 40-D Lubricants are commercial products for industrial use. Consumers could be exposed to trace amounts of these products by consuming certain processed foods or beverages. SYNALOX 40-D Lubricants used for food-contact applications are formulated with components approved by the U.S. Food and Drug Administration (FDA). See Health Information.

- **Environmental releases** – Because SYNALOX 40-D Lubricants are typically used in closed systems, the potential for their release to the environment is low. The substances are nonvolatile and soluble in water, and if released, they will have a tendency to remain dissolved in water. Because these compounds are biodegradable, they will be removed from water and soil environments, including wastewater- treatment facilities. In the event of a spill, the focus is on containing the spill to prevent contamination of soil and surface or ground water. Small spills 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, 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. 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 SYNALOX™ 40-D Series 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 materials 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** – Skin contact is essentially nonirritating. 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.

**Ingestion** – Very low toxicity if swallowed. Harmful effects are not anticipated from swallowing small amounts.

For more information, request the Safety Data Sheet from the [Dow Customer Information Group](#).

**Environmental Information**

SYNALOX™ 40-D Lubricants are polymers with low volatility. Because they are soluble in water, once introduced to the environment, they will tend to remain in water. They have minimal tendency to bind to soil or sediment.

SYNALOX 40-D Lubricants are unlikely to persist in the environment. These products are biodegradable, where the low-molecular weight products exhibit ready biodegradability and the high-molecular weight products are expected to more slowly but completely biodegrade in the environment. As such, the substances will be removed from water and soil environments, including biological wastewater-treatment facilities, in the unlikely event of their release to the environment.

Because of their high molecular weight, these lubricants are not expected to accumulate in the food chain (low potential for bioconcentration). SYNALOX 40-D Lubricants are practically nontoxic to fish and other aquatic organisms.

For more information, request the Safety Data Sheet from the [Dow Customer Information Group](#).

**Physical Hazard Information**

SYNALOX™ 40-D Lubricants are stable at normal storage and use temperatures; 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 SYNALOX™ 40-D 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.
- Contact Us (www.dow.com/polyglycols/synalox/contact/contact.htm)

For more business information about SYNALOX 40-D Series Lubricants, visit the SYNALOX™ Fluids and Lubricants web site at www.dow.com/polyglycols/synalox/index.htm.

References

1 SYNALOX™ 40-D300 Lubricant Safety Data Sheet, The Dow Chemical Company.
3 SYNALOX™ 40-D150 Lubricant 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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