Product Overview

- DOW ECOLIBRIUM™ Bio-Based Plasticizers are products made from vegetable oil derivatives and supplied as colorless to yellow liquids with a mild odor or no odor.\(^1\) For further details, see Product Description.
- DOW ECOLIBRIUM Bio-Based Plasticizers are used in products for wire and cable applications as an alternative for phthalate-based materials.\(^2\) For further details, see Product Uses.
- Exposure can occur either in facilities that manufacture DOW ECOLIBRIUM Bio-Based Plasticizers or in the various industrial or manufacturing facilities that use these products. DOW ECOLIBRIUM Bio-Based Plasticizers are not sold directly to consumers, but they are used in wire and cable products, so consumers may come into contact with them. Exposure to cured and/or dried product is not considered to present a risk to consumers.\(^2\) For further details, see Exposure Potential.
- These products are essentially non-irritating to the eyes. Prolonged skin contact may cause slight skin irritation with local redness and drying and flaking of the skin. Inhalation at room temperature is not likely to be hazardous. These products have very low toxicity if swallowed. Some products may contain components that have been reported to affect the kidney and liver in animal testing.\(^1\) For further details, see Health Information.
- DOW ECOLIBRIUM Bio-Based Plasticizers are made from modified vegetable oil, and are not hazardous in the environment. They are readily biodegradable in the environment and are practically nontoxic to aquatic organisms on an acute basis. The bioconcentration potential (the potential for bioaccumulation in the food chain) for these products is moderate.\(^1\) For further details, see Environmental Information.
- DOW ECOLIBRIUM Bio-Based Plasticizers are stable under recommended storage and normal use conditions.\(^1\) For further details, see Physical Hazard Information.
Manufacture of Product

- **Locations** – DOW ECOLIBRIUM™ Bio-Based Plasticizers are manufactured in various North America locations by The Dow Chemical Company.
- **Process** – DOW ECOLIBRIUM Bio-Based Plasticizers are produced from modified vegetable oil derivatives using proprietary processes and materials.

Product Description

DOW ECOLIBRIUM™ Bio-Based Plasticizers are supplied as colorless to yellow liquids that have a mild odor or no odor.

Product Uses

DOW ECOLIBRIUM™ Bio-Based Plasticizers are used as alternatives to phthalate plasticizers in electrical insulation for wire and cable applications. The use of DOW ECOLIBRIUM Bio-Based Plasticizers offers the potential to help reduce greenhouse gas emissions by up to 40% compared with typical polyvinyl chloride (PVC) formulations. Additional information is available upon request.

Exposure Potential

DOW ECOLIBRIUM™ Bio-Based Plasticizers are used in the production of industrial and consumer products. Based on the uses for these products, individuals could be exposed through:

- **Workplace exposure** – Exposure can occur either in facilities that manufacture DOW ECOLIBRIUM Bio-Based Plasticizers or in the various industrial or manufacturing facilities that use these products. These products are produced, distributed, stored, and consumed in closed systems. Those working with DOW ECOLIBRIUM Bio-Based Plasticizers 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 DOW ECOLIBRIUM Bio-Based Plasticizers** – Dow does not sell DOW ECOLIBRIUM Bio-Based Plasticizers for direct consumer use, but they are used to make insulation for wire and cable applications, so consumers may come into contact with moderate levels of these products blended into the coatings. See Health Information.
- **Environmental releases** – In the event of a spill, the focus is on containing the spill to prevent contamination of soil, surface water, or groundwater. Respiratory protection maybe necessary for cleaning up spills and leaks. Spilled material may pose a slipping hazard. Small spills should be absorbed with materials such as soil or sand. These products are considered non-toxic to aquatic organisms on an acute basis, and they are rapidly biodegradable in the environment as well as in wastewater treatment plants. 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 regulations. Keep spills from entering waterways or sewers. See Environmental, Health, and Physical Hazard Information.
- **In case of fire** – Fight the fire from a protected location 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 type) 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. 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 carefully. See Environmental, Health, and Physical Hazard Information.

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

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Health Information
Health information for DOW ECOLIBRIUM™ Bio-Based Plasticizers 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. These products may also contain minor components or additives that have additional health affects. An overview of health information for DOW ECOLIBRIUM Bio-Based Plasticizers appears below. The Safety Data Sheet is the preferred source for specific health information.

Eye contact – Contact is essentially non-irritating to the eyes. Corneal injury is unlikely.

Skin contact – Prolonged contact may cause slight skin irritation with local redness, as well as drying and flaking of the skin.

Inhalation – At room temperature, exposure to vapor is minimal due to low volatility.

Ingestion – These products have very low toxicity if swallowed. Harmful effects are not anticipated from swallowing small amounts. Contains a component which hydrolyzes to methanol, which is highly toxic to human and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney and heart.

Repeated exposure – Some products may contain components that have been reported to affect the kidney and liver in animal testing. Contains a component which hydrolyzes to methanol, which is highly toxic to human and may cause central nervous system effects, visual disturbances up to blindness, metabolic acidosis, and degenerative damage to other organs including liver, kidney and heart.

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

Environmental Information
DOW ECOLIBRIUM™ Bio-Based Plasticizers have low volatility and are negligibly soluble in water. If released to soil, they would tend to remain in place. If released to water, they would tend to adsorb to suspended solids and sediment. They are readily biodegradable based on stringent Organization for Economic Cooperation and Development (OECD) testing guidelines for ready biodegradability. Therefore, they would be removed by biological wastewater-treatment facilities and are expected to be rapidly biodegradable in the environment. These products have moderate bioconcentration potential (i.e., bioaccumulation in the food chain) and are practically non-toxic to aquatic organisms on an acute basis (LC$_{50}$/EC$_{50}$ $>$ 100 mg/L).

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

Physical Hazard Information
DOW ECOLIBRIUM™ Bio-Based Plasticizers are stable under recommended storage and normal use conditions. Keep these products away from heat, sparks, and flame. These products can oxidize at elevated temperatures.

Generation of gas during decomposition can cause pressure in closed systems. Decomposition products depend on temperature, air supply, and the presence of other materials, but may include carbon dioxide, alcohols, ethers, hydrocarbons, ketones, and polymer fragments.

Avoid contact with oxidizing materials, strong acids, and strong bases.

For more information, request the relevant 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 DOW ECOLIBRIUM™ Bio-Based Plasticizers. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Safety Data Sheet or Contact Us.

Additional Information
- Request the relevant Safety Data Sheet and Technical Data Sheet from the Dow Customer Information Group (www.dow.com/assistance/dowcig.htm)

References
1. LPLAS 1101 EXP4 [Plasticizer] Material Safety Data Sheet, The Dow Chemical Company
3. Per Dow internal tests.
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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