Product Safety Assessment

EcoSense™ Surfactants


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Names
- EcoSense™ Surfactants
- Alkyl polyglucosides
- Lauryl glucoside
- Coco-glucoside
- Decyl glucoside

INCI Names
- Lauryl glucoside
- Coco-glucoside
- Decyl glucoside

Product Overview
- EcoSense™ Surfactants are a family of alkyl polyglucoside-based, naturally sourced nonionic surfactants that are supplied as hazy, pale yellow liquids with a mild, sweet odor.\(^1,2\) For further details, see Product Description.
- EcoSense Surfactants can be used as both primary and cosurfactants in a variety of personal-care applications, such as shampoos, body washes, facial cleansers, liquid hand soaps, and baby wipes.\(^1\) For further details, see Product Uses.
- Worker exposure to EcoSense Surfactants is possible during manufacture, formulation, transport, or use. Consumers may use personal-care products such as shampoos or body washes that contain these products.\(^3\) For further details, see Exposure Potential.
- In the industrial setting, eye contact with undiluted product can cause severe burns. Brief skin contact may cause irritation with local redness. Inhalation exposure is not likely to be hazardous. EcoSense Surfactants exhibit very low toxicity if swallowed. Based on physical properties, these products are not likely to be aspiration hazards.\(^3\) For further details, see Health Information and the relevant Safety Data Sheet.
- EcoSense Surfactants are naturally derived products that are readily biodegradable according to OECD standards. These products range from practically nontoxic to moderately toxic to aquatic organisms on an acute basis.\(^3,4\) For further details, see Environmental Information.
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- EcoSense™ Surfactants are stable under recommended storage and normal use conditions. Some components of these products can decompose at elevated temperatures. Avoid contact with strong acids, strong bases, strong oxidizers, and strong reducing agents. For further details, see Physical Hazard Information.

Manufacture of Product
- Locations – EcoSense™ Surfactants are manufactured in Asia by The Dow Chemical Company and its global affiliates.
- Process – EcoSense Surfactants are produced by a patented process.

Product Description
EcoSense™ Surfactants are a family of alkyl polyglucoside-based, naturally sourced nonionic surfactants that are supplied as hazy, pale yellow liquids with a mild, sweet odor. They are typically water-based solutions containing 50% surfactant by weight.

Product Uses
EcoSense™ Surfactants are naturally derived surfactants with an improved environmental profile. These products are listed on ECOCERT and certified by the Natural Products Association as a natural certified personal care ingredient. EcoSense Surfactants provide a new solution to help meet consumer demand for personal-care products that are milder to the skin and hair. EcoSense Surfactants are used in a variety of personal-care products marketed as “natural”, including:
- Shampoo and conditioner
- Body wash
- Bubble bath
- Hand and facial cleansers
- Liquid and bar soap
- Baby wipes

Exposure Potential
EcoSense™ Surfactants are used in the formulation of shampoo, body wash, and other personal-care products. Based on the uses for these products, individuals could be exposed through:
- Workplace exposure – Those working with EcoSense Surfactants in manufacturing and/or formulating operations could be exposed during maintenance, sampling, testing, or other procedures. Each manufacturing or formulating 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 EcoSense Surfactants – EcoSense Surfactants are not sold for direct consumer use, but small amounts are formulated into personal-care products used by the general public. Alkyl polyglucosides have been evaluated by the Cosmetic Ingredient Review (CIR) Expert Panel and deemed safe as cosmetic ingredients. Always read and follow product label instructions before use. See Health Information.
- Environmental releases – Because EcoSense Surfactants are formulated into personal-care products, small quantities could enter wastewater-treatment facilities when consumer products are washed off or discarded. These products are readily biodegradable according to OECD standards. These products range from nontoxic to moderately 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 occurs, these products should be captured, collected, and reprocessed or disposed of according to applicable governmental requirements. Use appropriate safety equipment. Prevent from entering into soil, ditches, sewers, waterways, and/or groundwater. Contain spilled product if possible and absorb with inert materials such as sand or dirt. Collect in suitable and properly labeled containers. Do not use water for cleanup. See Environmental, Health, and Physical Hazard Information.
In case of fire – Keep people away. Isolate the fire and deny unnecessary entry. These products will not burn until evaporated to dryness. The residue is combustible. To extinguish combustible residues of this product, use water fog, carbon-dioxide or dry-chemical extinguishers, or foam. Firefighters should wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (including fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight the fire from a protected location or safe distance. Under fire conditions, some components of these products may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include, but are not limited to, carbon monoxide and carbon dioxide.

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

The safety of alkyl polyglucosides, the active ingredients in EcoSense™ Surfactants, has been assessed by the Cosmetic Ingredient Review (CIR) Expert Panel and found to be safe for use in personal-care products.

EcoSense Surfactants contain up to 50% active ingredient. The following health information refers to the concentrated product encountered during manufacturing operations. By contrast, formulated personal-care products contain 1 to 15% of these active ingredients.

Eye contact – Contact may cause severe eye irritation with corneal injury that may result in permanent impairment of vision, even blindness. Chemical burns may occur.

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

Inhalation – Vapors are primarily water; a single exposure is not likely to be hazardous.

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

Aspiration hazard – Based on physical properties, these products are not likely to be an aspiration hazard.

For more information, see the relevant Safety Data Sheet.

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Environmental Information

EcoSense™ Surfactants are water-soluble. If released to the environment, these products tend to dissolve and remain in water. These products are readily biodegradable (60% biodegradation in 28 days per OECD 301F test). Biodegradation of these products is expected to be complete in both soil and surface water, as well as in biological wastewater-treatment facilities.

These surfactants are not likely to accumulate in the food chain (low bioconcentration potential). EcoSense Surfactants range from practically nontoxic (LC50/EC50 >100 mg/L) to moderately toxic (LC50/EC50 between 1 and 10 mg/L) to aquatic organisms on an acute basis.

For more information, see the relevant Safety Data Sheet.

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**Physical Hazard Information**
EcoSense™ Surfactants are stable under recommended storage and normal use conditions. Some components of these products can decompose at elevated temperatures. Decomposition products depend on temperature, air supply, and the presence of other materials. Avoid contact with strong acids, strong bases, strong oxidizers, and strong reducing agents.

For more information, see the relevant Safety Data Sheet.

**Regulatory Information**
Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of EcoSense™ Surfactants. 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**
- Contact Us ([www.dow.com/personalcare/ecosense/contact.htm](http://www.dow.com/personalcare/ecosense/contact.htm))
- **EcoSense™ Surfactants Frequently Asked Questions**, Dow Personal Care, (Contact the Dow Customer Information Group to request this document - Contact Us)

For more business information about EcoSense™ Surfactants, visit the Dow Personal Care web site at [www.dow.com/personalcare](http://www.dow.com/personalcare).

**References**
1. Dow Personal Care. **EcoSense™ Surfactants Overview Literature**.
2. The Dow Chemical Company. **EcoSense™ 1000 Surfactant, Safety Data Sheet**.
3. The Dow Chemical Company. **EcoSense™ 1200 Surfactant, Safety Data Sheet**.
4. The Dow Chemical Company. **EcoSense™ 3000 Surfactant, Safety Data Sheet**.
5. Dow Personal Care. **EcoSense™ Surfactants Frequently Asked Questions**.
6. The Dow Chemical Company. **EcoSense™ 3000 Surfactant, Technical Data Sheet**.
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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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