Product Safety Assessment

TRITON™ Specialty Alkoxylate Surfactants


Select a Topic:
Names
Product Overview
Manufacture of Product
Product Description
Product Uses
Exposure Potential
Health Information
Environmental Information
Physical Hazard Information
Regulatory Information
Additional Information
References

Names
- TRITON™ specialty alkoxylate surfactants
- TRITON CA surfactant
- TRITON HW-1000 surfactant
- TRITON N-57 surfactant
- TRITON X-207 surfactant

Product Overview
- The Dow Chemical Company (Dow) manufactures several nonionic specialty alkoxylate surfactants under the trade name TRITON™ surfactants. TRITON specialty alkoxylate surfactants are supplied as pale yellow to amber liquids with a mild or alcoholic odor. For further details, see Product Description.
- TRITON specialty alkoxylate surfactants are used as emulsifiers, wetting agents, or detergents in a variety of applications. For further details, see Product Uses.
- Worker exposure to TRITON specialty alkoxylate surfactants is possible during manufacture, transport, or use. Exposure is minimized by engineering controls and personal protective equipment. For further details, see Exposure Potential.
- Eye contact with TRITON specialty alkoxylate surfactants may cause severe irritation with corneal injury that may result in permanent impairment of vision, even blindness. Brief skin contact may cause slight irritation with local redness, and prolonged skin contact may cause severe irritation with local redness and discomfort. At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated product or mist may cause respiratory irritation. These surfactants have very low toxicity if swallowed. For further details, see Health Information.
- Although TRITON specialty alkoxylate surfactants cannot be considered to be readily biodegradable according to test guidelines, these results do not necessarily mean that the products are not biodegradable under environmental conditions. Most of these products are water soluble. They would not be expected to accumulate in the food chain and range from toxic to moderately toxic to aquatic organisms on an acute basis. For further details, see Environmental Information.
- TRITON specialty alkoxylate surfactants are thermally stable under recommended storage and normal use conditions. Exposure to elevated temperatures can cause these products to decompose. For further details, see Physical Hazard Information.
Product Safety Assessment: TRITON™ Specialty Alkoxylate Surfactants

Manufacture of Product
- **Locations** – The Dow Chemical Company (“Dow”) and its global affiliates manufacture TRITON™ specialty alkoxylate surfactants at facilities in North America.
- **Process** – TRITON specialty alkoxylate surfactants are manufactured using proprietary methods, chemistries, and formulations.

Product Description
TRITON™ specialty alkoxylate surfactants are nonionic emulsifiers and wetting agents, supplied as pale yellow to amber liquids with a mild or alcoholic odor.

Product Uses
TRITON™ specialty alkoxylate surfactants are used in a wide variety of applications, including:
- Agricultural formulations and agrochemicals
- Cleaning
- Defoaming
- Industrial processing/manufacturing
- Inks/printing
- Laminate adhesives
- Metal-working fluids
- Oil-field production
- Paints and coatings
- Pigment dispersions, wetting agents, and stabilizers
- Pressure-sensitive adhesives
- Solid particle wetting/dispersants
- Textiles, textile finishes and printing, coning oils, and fiber finishing

Exposure Potential
TRITON™ specialty alkoxylate surfactants 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 TRITON specialty alkoxylate surfactants or in the various industrial or manufacturing facilities that use these products. Occupational exposure in manufacturing could occur during maintenance, sampling, testing, or other procedures. Each 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 TRITON specialty alkoxylate surfactants** – Dow does not sell TRITON specialty alkoxylate surfactants for direct consumer use, but they are formulated at relatively low levels into paints, coatings, and various other products used by consumers. Always read product information before use and follow the label/use instructions. 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 and to minimize potential acute effects on associated ecosystems. The TRITON specialty alkoxylate surfactants are moderately soluble in water and have low volatility. If released to the environment, these products tend to dissolve and remain in water. TRITON X-207 is slightly soluble in water. Although these products are not considered readily biodegradable according to Organization for Economic Cooperation and Development (OECD) test guidelines, they would be expected to slowly degrade in the environment and be removed by wastewater-treatment processes. These products range from toxic 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 does occur, isolate the area. Absorb spills with sand or soil. Do not use water for cleanup. Collect in suitable and properly labeled containers. Keep unnecessary and unprotected personnel from entering the area. Prevent product from entering soil, waterways, or groundwater. Spilled product may cause a slipping hazard. 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. Use water fog or fine spray, dry-chemical or carbon-dioxide extinguishers, or foam to extinguish the fire. Alcohol-resistant foams are preferred. A direct water stream may spread...
the fire or cause violent steam generation or eruption. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. 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, see the relevant Safety Data Sheet.

Health Information
Health information for TRITON™ specialty alkoxylate surfactants 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. Some products may contain minor components or additives that have additional health risks. The Safety Data Sheet is the preferred source for specific health information. An overview of health information appears below.

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

Skin contact – Brief contact may cause slight skin irritation with local redness. Prolonged contact may cause severe skin irritation with local redness and discomfort. Prolonged skin contact is unlikely to result in absorption of harmful amounts. Laboratory tests for similar materials have been shown to affect the lungs of rabbits following skin contact with the materials.

Inhalation – At room temperature, exposure to vapor is minimal due to low volatility. A single exposure is not likely to be hazardous. Vapor from heated product or mist may cause respiratory irritation.

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

For more information, see the relevant Safety Data Sheet.

Environmental Information
TRITON™ specialty alkoxylate surfactants are nonvolatile (do not evaporate) and slightly to moderately soluble in water. If released to the environment, these products would tend to partly dissolve and remain in water, with a significant fraction adsorbing to soil, sediments, and suspended particles. Although these surfactants are not considered readily biodegradable according to stringent Organisation for Economic Cooperation and Development (OECD) test guidelines, these results do not necessarily mean that the products will not biodegrade under environmental conditions. Laboratory and monitoring studies have shown that substances belonging to this category of surfactants are efficiently removed during treatment in properly designed and operated biological wastewater plants.

These surfactants are not likely to accumulate in the food chain (bioconcentration potential is low). TRITON specialty alkoxylate surfactants range from toxic to moderately toxic (LC₅₀/EC₅₀ between 1 and 100 mg/L) to aquatic organisms on an acute basis.

For more information, see the relevant Safety Data Sheet.

Physical Hazard Information
TRITON™ specialty alkoxylate surfactants are thermally stable under recommended storage and normal use conditions. Exposure to elevated temperatures can result in decomposition. Spilled product can present a slipping hazard. Avoid contact with strong acids, strong bases, and strong oxidizers.

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 TRITON™ specialty alkoxylate 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 Sheets, or Contact Us.

Additional Information
- Safety Data Sheets (www.dow.com/webapps/msds/msdssearch.aspx)
- Contact Us (www.dow.com/surfactants/contact/index.htm)
- Dow Surfactants-Specialty Alkoxylates (www.dow.com/surfactants/products/special.htm)

For more business information about TRITON™ specialty alkoxylate surfactants, visit the Dow Surfactants web site at www.dow.com/surfactants/index.htm.

References
12 TRITON™ HW-1000 Surfactant Technical Data Sheet, The Dow Chemical Company, Form No. 119-02312-0413, April 2013, page 1.
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.

The information herein is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Dow be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information herein or the product to which that information refers.

Nothing contained herein is to be construed as a recommendation to use any product, process, equipment or formulation in conflict with any patent, and Dow makes no representation or warranty, express or implied, that the use thereof will not infringe any patent.

NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREBUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

Dow makes no commitment to update or correct any information that appears on the Internet or on its World-Wide Web server. The information contained in this document is supplemental to the Internet Disclaimer, www.dow.com/homepage/term.asp.