Product Safety Assessment

TRITON™ GR Series Surfactants

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Names
- CAS No. 577-11-7
- Dioctyl sulfosuccinate
- 1,4-Bis(2-ethylhexyl)sodium sulfosuccinate
- TRITON™ GR-5M surfactant
- TRITON GR-7M surfactant
- TRITON GR-7ME surfactant

Product Overview
- TRITON™ GR surfactants are anionic, yellow liquids with a pungent odor. These surfactants are chemically stable in neutral solutions and moderately stable in dilute acidic and alkali solutions. They are compatible with other anionic and nonionic surfactants. For further details, see Product Description.
- TRITON GR surfactants are used primarily in paints and coatings applications, as well as industrial and institutional cleaning applications. For further details, see Product Uses.
- Exposure can occur either in facilities that manufacture TRITON GR surfactants or in the various industrial or manufacturing facilities that formulate and use these products. TRITON GR surfactants are formulated into products such as cleaners and paints, the use of which may present potential for consumer exposure. For further details, see Exposure Potential.
- Eye contact may cause severe irritation with corneal injury, which may result in permanent vision impairment, even blindness. Prolonged skin contact may cause severe irritation with local redness, discomfort, and drying and flaking of the skin. Exposure to vapor may cause central nervous system effects. These products have low toxicity if swallowed. Components in these products have been shown to have adverse effects on laboratory animals with repeated exposure to high doses. For further details, see Health Information.
- TRITON GR surfactants are inherently biodegradable to readily biodegradable in the environment. These products are slightly to moderately toxic to aquatic organisms on an acute basis and have low bioaccumulation potential in aquatic organisms. For further details, see Environmental Information.
- TRITON GR surfactants are stable at recommended storage and use temperatures, but can decompose at elevated temperatures. For further details, see Physical Hazard Information.

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Manufacture of Product

- **Locations** – The Dow Chemical Company produces TRITON™ GR surfactants at facilities in South Charleston, WV, USA. Foreign affiliates of Dow produce these materials in Teesside, Great Britain.
- **Process** – TRITON GR surfactants are manufactured using proprietary methods, chemistries, and formulations.

Product Description

TRITON™ GR surfactants are anionic yellow liquids with a pungent odor. These products contain 56% to 65% 1,4-bis(ethylhexyl) sodium sulfosuccinate blended with either water/isopropanol (GR-5M), petroleum distillate (GR-7M), or an aromatic hydrocarbon (GR-7ME) used as a solvent. These products are soluble in most organic solvents, miscible with most aliphatic and aromatic hydrocarbon solvents, and compatible with most anionic and nonionic surfactants, but not cationic surfactants.

Product Uses

TRITON™ GR surfactants are used in paints and coatings, and industrial and institutional cleaning applications, as well as other applications listed below:
- **TRITON GR-5M surfactant** – paints and coatings, paper and textile, agrochemicals, cleaners, and oil-field chemicals
- **TRITON GR-7M surfactant** – dry cleaning, paints and coatings, agrochemicals, and oil-field chemicals
- **TRITON GR-7ME surfactant** – dry cleaning, paints and coatings, lubricants, and dispersants

Exposure Potential

TRITON™ GR surfactants are used in the formulation of industrial and consumer products. Based on the uses for this product, the public could be exposed through:
- **Workplace exposure** – Exposure can occur either in facilities that manufacture TRITON GR surfactants or in the various industrial or manufacturing facilities that formulate and 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 GR surfactants** – TRITON GR surfactants are not sold for direct consumer use. However, they are formulated into cleaners, paints and coatings, lubricants, and other products, the use of which may present potential for consumer exposure. Consumers should read product information before use and follow label 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. Do not use water for cleanup. Absorb small spills with sand or dirt. Collect in suitable and properly labeled containers. Once introduced to water, TRITON GR-5M surfactant will remain in water. Because it is readily biodegradable, it will be removed from water and soil environments, including wastewater-treatment facilities. TRITON™ GR 7M and 7ME surfactants are insoluble in water due to substantial amounts of organic diluents. These products are inherently biodegradable in the

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

Health Information

Health information for TRITON™ GR 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. 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 TRITON GR surfactants is provided below.

Eye contact – Contact may cause severe irritation with corneal injury, which may result in permanent vision impairment, even blindness. Chemical burns may occur. Vapor may cause eye irritation experienced as mild discomfort and redness.

Skin contact – Prolonged contact may cause severe irritation with local redness, discomfort, and drying and flaking of the skin. Repeated contact may cause burns with symptoms including pain, severe local redness, swelling, and tissue damage. Prolonged contact is unlikely to result in absorption of harmful amounts.

Inhalation – Inhalation studies have not been conducted on these products, however these products contain other components that may cause severe irritation of the nose, throat, and lungs from a single exposure to vapor. In addition, exposure to vapors of the minor components may cause central nervous system effects including headache, dizziness and drowsiness, progressing to loss of coordination and unconsciousness. Components of these products may cause an allergic respiratory response in a small proportion of exposed individuals.

Ingestion – These products have low toxicity if swallowed. Swallowing small amounts incidental to normal handling operations may cause gastrointestinal irritation with abdominal discomfort or diarrhea. However, swallowing larger amounts may cause injury. Due to the some components in some of these products, aspiration into the lungs during ingestion or vomiting may cause lung damage or even death from chemical pneumonia.

Repeated exposure – Minor components in these products (naphthalene, CAS No. 91-20-3, and xylene, CAS No. 1330-20-7) were shown to be toxic or to cause birth defects in laboratory...
animals at doses toxic to the mother. These components were also shown to affect in vitro genetic toxicity in laboratory animals. Effects on reproduction were seen only at doses producing significant toxicity to the parent animals.

Naphthalene and xylene were shown to have adverse effects on laboratory animals after repeated exposure to doses many times higher than those expected during normal use conditions. These effects were reported on the blood, kidney, liver, spleen, lung, gastrointestinal tract, thyroid, and urinary tract.

**Other** – Naphthalene has been shown to cause cancer in laboratory animals. In humans, there is limited evidence of cancer in workers involved in naphthalene production.

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

### Environmental Information

Environmental data associated with individual products in this family of materials may vary. The [Safety Data Sheet](#) is the preferred source for specific environmental information.

TRITON™ GR-5M is highly water soluble. It tends to stay in water if released into the environment. TRITON™ GR-7M and GR-7ME are not soluble in water due to their higher amount of organic diluents. The active surfactant ingredient in these two products is water soluble, but the organic diluents are not water soluble. Therefore, the active ingredient of surfactant tends to stay in water and the organic diluents would be adsorbed to soil or sediment if these products were released in the environment.

TRITON™ GR surfactants are inherently biodegradable or readily biodegradable in the environment according to Organisation for Economic Co-operation and Development test guidelines. They are expected to be removed from water, soil, and wastewater-treatment facilities through biodegradation. Therefore, they will not persist in the environment. TRITON GR surfactants are slightly to moderately toxic (EC50 of 10 to 100 mg/L) to aquatic organisms on an acute basis. These products are not likely to accumulate in the food chain (low to moderate bioconcentration potential).

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

### Physical Hazard Information

TRITON™ GR surfactants are thermally stable at recommended storage and use temperatures. Exposure to elevated temperatures can cause these products to decompose. Decomposition products depend upon temperature, air supply, and the presence of other materials. Avoid contact with strong acids, strong bases, strong oxidizers, and strong reducing agents.

Spilled surfactant can be a slipping hazard.

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 TRITON™ GR 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
- Safety Data Sheet (www.dow.com/webapps/msds/msdssearch.aspx)
- Contact Us (www.dow.com/surfactants/contact/index.htm)

For more business information about TRITON™ GR surfactants, visit the Dow Surfactants website at www.dow.com/surfactants/index.htm.

References

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