Product Safety Assessment

ACUSOL™ Dispersant Polymers


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Names
- ACUSOL™ dispersant polymers
- ACUSOL 420N polymer
- ACUSOL 425N polymer
- ACUSOL 445 polymer
- ACUSOL 445N polymer
- ACUSOL 460N polymer
- ACUSOL 460NK polymer
- ACUSOL 470N polymer
- ACUSOL 479N polymer
- ACUSOL 497N polymer
- ACUSOL 497NG polymer
- ACUSOL 505N polymer
- ACUSOL 588 polymer
- ACUSOL 588D polymer
- ACUSOL 588G polymer
- ACUSOL 588GF polymer

Product Overview
- ACUSOL™ dispersant polymers are water-soluble polymers that are formulated as clear, colorless liquids and as white, dry powders. In both forms, the polymers have a mild odor. For further details, see Product Description.
- ACUSOL dispersant polymers are used in cleaners and fabric-care products for household, industrial, and institutional applications. For further information, see Product Uses.
- Worker exposure to ACUSOL dispersant polymers is possible during manufacture, transport, or use. Consumers may use household products that contain these polymers. For further details, see Exposure Potential.
- Direct eye and skin contact can cause slight irritation. Inhalation of vapor, mist, or dust can cause irritation of the nose, throat, and lungs. For further details, see Health Information.
- ACUSOL dispersant polymers are expected to be relatively inert in the environment. The polymers are unlikely to bioaccumulate in the food chain and are practically nontoxic to fish and other aquatic organisms on an acute basis. For further details, see Environmental Information.
- ACUSOL dispersant polymers are noncombustible and stable under recommended storage and normal use conditions. For further details, see Physical Hazard Information.

Manufacture of Product

Footnotes:
1™Trademark of the Dow Chemical Company (“Dow”) or an affiliated company of Dow
2Revised: September 18, 2014
3The Dow Chemical Company
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- **Locations** – Rohm and Haas Company, a wholly owned subsidiary of The Dow Chemical Company, manufactures ACUSOL™ dispersant polymers at facilities in the United States, and through global affiliates in Europe. These materials are manufactured in quantities sufficient to meet global demand.

- **Process** – ACUSOL dispersant polymers are produced in batch operations using proprietary methods and technology.

**Product Description**

ACUSOL™ polymers are water-soluble polycarboxylic homopolymers and copolymers that are formulated as colorless, clear to hazy liquids and also as white, dry powders. Products are generally available in partially or fully neutralized forms. In both liquid and powder forms, these polymers have a mild odor.

**Product Uses**

ACUSOL™ dispersant polymers are used to improve stability and performance of the following products for home-care, institutional, and industrial applications:

- Fabric wash powders and tablets
- Liquid laundry detergents
- Water-softener additives
- Home-care liquid cleaners and bleach formulations
- Industrial and institutional fabric-wash products, bottle-washing products, and metal-cleaning products

**Exposure Potential**

ACUSOL™ dispersant polymers are used in the production of household, institutional, and industrial cleaners and products. Based on this, individuals could be exposed through:

- **Workplace exposure** – Those working with ACUSOL dispersant polymers in manufacturing and/or formulating 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 ACUSOL dispersant polymers** – These products are not sold for direct consumer use, but may be formulated at low levels into cleaners for household, industrial, and institutional use. The polymers in ACUSOL dispersants have a well-established toxicological profile and are safe for normal use. Always read and follow product label instructions. See Health Information.

- **Environmental releases** – Because these polymers are formulated into products for household, institutional, and industrial applications, small quantities could enter wastewater-treatment facilities when these products are used or discarded. If released to water, the polymers would initially disperse in water, and eventually settle into the sediment. These polymers will degrade slowly in the environment, and will likely be removed by biological wastewater-treatment facilities by adsorbing onto biosolids. These products are not acutely toxic to fish or other aquatic organisms. 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 focus is on immediate containment to prevent contamination of soil, surface water, or groundwater. Evacuate personnel upwind and away from the spill or leak. Appropriate protective equipment must be worn when handling spills of these products. Dike the spill and absorb with inert solids such as sand or soil. Collect liquids and solid diking material in suitable separate containers. Spilled product can create slippery conditions. See Environmental, Health, and Physical Hazard Information.

- **In case of fire** – These products are noncombustible, but the dried residue can burn. Use appropriate extinguishing media. Firefighters should wear positive-pressure, self-contained breathing apparatus and protective firefighting clothing. 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.
Health Information
Health information for ACUSOL™ dispersant polymers is summarized on the relevant Safety Data Sheet. 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 risks. An overview of health information for these products appears below. However, the Safety Data Sheet is the preferred source for specific health information.

Eye contact – Direct contact can cause slight eye irritation.

Skin contact – Prolonged or repeated contact can cause slight skin irritation.

Inhalation – Inhalation of vapor or mist can cause irritation of the nose, throat, and lungs. Headache and nausea are also possible.

Repeated exposure – Prolonged or repeated overexposure to dusts or mists can cause lung irritation.

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

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Environmental Information
ACUSOL™ dispersant polymers are water-soluble polymers. If released to the environment, the polymer components would be inert, and would likely be removed by biological wastewater-treatment facilities via adsorption to biosolids. If released to surface waters, the polymeric component would initially remain dispersed in water, but eventually settle into sediments. If ACUSOL dispersant polymers are released to soil, they would be expected to remain in place and be degraded gradually by sunlight and mechanical action.

ACUSOL dispersant polymers are not expected to accumulate in the food chain (low bioconcentration potential).

ACUSOL dispersant polymers are practically nontoxic to aquatic organisms on an acute basis.

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

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Physical Hazard Information
ACUSOL™ dispersant polymers are stable under recommended storage and normal use conditions, but can decompose at temperatures above 230°C (446°F). Thermal decomposition may produce monomer vapors. Avoid freezing. There are no known materials that are incompatible with these products. ACUSOL dispersant polymers are noncombustible, but the dried residue can burn.

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 ACUSOL™ dispersant polymers. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Safety Data Sheet or visiting Contact Us.

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Additional Information

- Request the Safety Data Sheet from the Dow Customer Information Group (www.dow.com/assistance/dowcig.htm)
- Contact Us (www.dow.com/assistance/thoughts.htm)
- Product Information for ACUSOL™ 425N Detergent Polymer (www.dow.com/products/product/acusol-425n/)
- Product Information for ACUSOL™ 445N Detergent Polymer for Laundry (www.dow.com/products/product/acusol-445n-for-laundry/)
- Product Information for ACUSOL™ 460NK Dispersant (www.dow.com/products/product/acusol-460nk/)
- Product Information for ACUSOL™ 470N Detergent Polymer (www.dow.com/products/product/acusol-470n/)
- Product Information for ACUSOL™ 479N Detergent Polymer (www.dow.com/products/product/acusol-479n/)
- Product Information for ACUSOL™ 505N Detergent Polymer for Industrial and Institutional Laundry (www.dow.com/products/product/acusol-505n/)
- ACUSOL™ 588 Polyphosphate and Silicate Scale Inhibitor for Laundry and Automatic Dishwashing Detergents (www.dow.com/products/product/acusol-588/)
- Product Information for ACUSOL™ 588G Polyphosphate and Silicate Scale Inhibitor for Laundry and Automatic Dishwashing Detergents (www.dow.com/products/product/acusol-588-g/)


References

1. ACUSOL™ Dispersant Polymers Product Selection Guide, Rohm and Haas, Form No. PM-101A
2. ACUSOL™ 445 Polymer Material Safety Data Sheet, The Dow Chemical Company
3. ACUSOL™ 588G Polymer Material Safety Data Sheet, The Dow Chemical Company
4. ACUSOL™ 588G Polymer Material Safety Data Sheet, The Dow Chemical Company
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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