
Product Safety Assessment

Butyl Acrylate

Product Safety Assessment documents are available at www.dow.com/productsafety/finder/.

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

- CAS No. 141-32-2
- n-Butyl propenoate
- Butyl ester acrylic acid
- 2-Propenoic acid, n-butyl ester
- EC No. 205-480-7
- Acrylic acid, n-butyl ester
- Butyl propenoate
- Butyl acrylate
- n-Butyl acrylate
- Acrylsaeurebutylester
- Butyl-2-propenoate

Product Overview

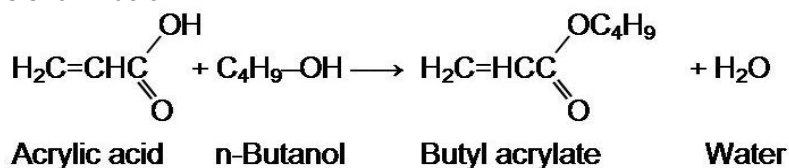
- Butyl acrylate is used in the production of coatings and inks, adhesives, sealants, textiles, plastics and elastomers.¹ See [Product Uses](#).
- Acrylic esters, including butyl acrylate, have a very strong, unpleasant odor that may be bothersome. However, the smell of acrylates does not necessarily indicate a health risk.² Butyl acrylate is an eye and skin irritant. Prolonged contact of liquid or vapor with eye or skin could result in injury. Butyl acrylate can be absorbed through the skin in potentially harmful amounts and can cause an allergic skin reaction. Vapors can be toxic, and vapor exposure could result in irritation to upper respiratory tract and lungs. Butyl acrylate has a low oral toxicity, but can cause burns to mouth and throat and irritation to the gastrointestinal tract.³ See [Health Information](#).
- Consumer exposure to butyl acrylate is unlikely. Those working with butyl acrylate in manufacturing operations could be exposed during maintenance, sampling, testing, manual transfer, or other procedures. See [Exposure Potential](#).
- Butyl acrylate is a flammable liquid and vapor. Its vapors are heavier than air and may travel a long distance and accumulate in low lying areas. See [Exposure Potential](#).
- Butyl acrylate is stable under recommended storage conditions. Elevated temperatures can cause hazardous polymerization, so butyl acrylate has inhibitors added to reduce the probability of polymerization. See [Product Description](#) and [Physical Hazard Information](#).

[Back to top](#)

Manufacture of Product

- **Capacity**⁴ –The Dow Chemical Company and its consolidated subsidiaries (Dow) are one of many global producers of butyl acrylate and related chemicals, acrylic acid and esters. Dow has production sites in Texas, Saudi Arabia and Germany.

- **Process** – Butyl acrylate is normally produced by a simple reaction between acrylic acid and [n-butanol](http://www.dow.com/productsafety/finder/nbut) (www.dow.com/productsafety/finder/nbut), with water as a byproduct. The reaction is shown below:



[Back to top](#)

Product Description^{3,5}

Butyl acrylate is a colorless liquid with a sharp odor. It is readily miscible with most organic solvents. Butyl acrylate contains one of the following three inhibitors to prevent polymerization under recommended storage conditions:

- Hydroquinone (HQ) – CAS 123-31-95
- Monomethyl ether of hydroquinone (MEHQ) – CAS 150-76-5
- Butylated hydroxytoluene (BHT) – CAS 128-37-0

[Back to top](#)

Product Uses^{1,6,7}

Butyl acrylate is primarily used as a reactive building block to produce coatings and inks, adhesives, sealants, textiles, plastics and elastomers. Butyl acrylate is used in the following applications:

- **Adhesives** – for use in construction and pressure-sensitive adhesives
- **Chemical intermediates** – for a variety of chemical products
- **Coatings** – for textiles and adhesives, and for surface and water-based coatings, and coatings used for paints, leather finishing and paper
- **Leather** – to produce different finishes, particularly nubuck and suede
- **Plastics** – for the manufacture of a variety of plastics
- **Textiles** – in the manufacture of both woven and non-woven textiles

[Back to top](#)

Exposure Potential³

Butyl acrylate is used in the production of industrial and consumer products. Based on these uses, the public could be exposed through:

- **Workplace exposure** – Exposure can occur either in a butyl acrylate manufacturing facility or in the various industrial or manufacturing facilities that use butyl acrylate. It is produced, distributed, stored and consumed in closed systems. Those working with butyl acrylate in manufacturing operations could be exposed during maintenance, sampling, testing, manual transfer, or other procedures. Each manufacturing facility should have a thorough training program for employees, appropriate work processes and safety equipment in place to limit unnecessary butyl acrylate exposure. Preferred glove barrier materials include chlorinated polyethylene, polyethylene, ethyl vinyl alcohol laminate (EVAL), polyvinyl alcohol (PVA), or styrene/butadiene rubber. Consult the relevant [Safety Data Sheet \(SDS\)](#) or see [Health Information](#).
- **Consumer exposure to products containing butyl acrylate** – Dow does not sell butyl acrylate for direct consumer use, but it is used as a raw material to make a variety of goods used by consumers or construction personnel and could be present in trace amounts as residual monomer in consumer products. See [Health Information](#).
- **Environmental releases** – An acrylate leak, signaled by its strong odor, rarely poses any health risks.² In the event of a spill, the focus is on containing the spill to prevent

contamination of soil, ditches, sewers, or surface or ground water. Evacuate the area and stay upwind of the spill. Ventilate the area of leaks or spills. Only trained and properly protected personnel should be involved in clean-up operations. Eliminate all sources of ignition in vicinity of the spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Use appropriate safety and protective equipment. Absorb with non-combustible material such as dirt or sand. Do not use clay absorbants. Consult the relevant [SDS](#) for more information about protective equipment and procedures. See [Environmental](#), [Health](#) and [Physical Hazard Information](#).

- **Large release** – Industrial spills or releases are infrequent and are generally contained. If a large spill does occur, dike area to contain spill. Contain the spilled material if possible and keep it out of sewers. Ground and bond all containers and handling equipment and avoid all ignition sources. Pump with explosion-proof equipment. If available, use foam to smother or suppress vapors. The material should be captured, collected and reprocessed, or disposed of according to applicable governmental requirements. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus (SCBA) or positive pressure air line with auxiliary self-contained air supply. Follow emergency procedures carefully. See [Environmental](#), [Health](#) and [Physical Hazard Information](#).

[Back to top](#)

Health Information³

Acrylic esters, including butyl acrylate, have a very strong, unpleasant odor that may be bothersome. However, the smell of acrylates does not necessarily indicate a health risk. Acrylic esters have an extremely low odor “threshold,” meaning that even very small amounts in the air can be detected by smell.²

Butyl acrylate liquid and vapors may cause slight eye irritation and even slight corneal damage. They may also cause pain greater than expected given the level of irritation.

Brief contact may cause moderate skin irritation with local redness. Prolonged contact may cause severe skin irritation with local redness and discomfort. Prolonged or widespread skin contact may result in absorption of harmful amounts and may cause an allergic skin reaction.

Excessive exposure to butyl acrylate vapors may cause irritation to upper respiratory tract (nose and throat) and lungs. Vapor concentrations are attainable which could be hazardous on single exposure.

Butyl acrylate has low toxicity if swallowed, but may result in gastrointestinal irritation or ulceration. Swallowing butyl acrylate may result in burns of the mouth and throat.

Butyl acrylate causes birth defects in laboratory animals only at doses toxic to the mother. It is toxic to the fetus in lab animals at doses toxic to the mother.

For specific health information, review the Safety Data Sheet ([SDS](#)).

[Back to top](#)

Environmental Information^{3,7}

The bioconcentration potential for butyl acrylate is low. It is readily biodegradable (OECD 310/ISO 14593 test: 80-90% biodegraded after 28 days), which suggests that the compound will be removed from water and soil environments, including biological wastewater-treatment facilities.

Butyl acrylate is moderately toxic to aquatic organisms.

For specific environmental information, review the [SDS](#).

[Back to top](#)

Physical Hazard Information³

Butyl acrylate is a flammable liquid and vapor; thus, it should be kept away from heat, sparks, flame and any sources of ignition. Butyl acrylate vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur.

Fire Fighting Instructions

Should ignition occur, extinguish with water fog or fine spray, dry chemical fire extinguisher, carbon dioxide fire extinguisher, or foam.

- Alcohol-resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
- Personal protection for fire fighters should include positive-pressure, self-contained breathing apparatus (SCBA) and protective fire-fighting clothing includes fire fighting helmet, coat, trousers, boots, and gloves.
- Avoid contact with this material during fire-fighting operations. If contact is likely, change to full chemical-resistant fire-fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical-resistant clothing with self-contained breathing apparatus and fight fire from a remote location.

Reactivity/Stability

Butyl acrylate is stable under recommended storage conditions. Elevated temperatures can cause hazardous polymerization. Polymerization can be initiated by the absence of air, the presence of free radical initiators and peroxides, or high temperature. The presence of moisture can also accelerate polymerization rate.

Butyl acrylate contains inhibitors to minimize polymerization under recommended storage conditions. See [Product Description](#) or [SDS](#). Maintain inhibitor and dissolved oxygen level. Uninhibited monomer vapors can polymerize and plug relief devices.

Avoid unintended contact with activated carbon or silica gel, which may cause polymerization. Avoid contact with clay-based absorbants, and with incompatible materials, such as:

- Oxidizing materials
- Aldehydes, amines, azides, ethers, free radical initiators, halides, mercaptans, mineral acids, peroxides, rust, strong inorganic bases
- Metals such as brass or copper.

Additional physical property information for butyl acrylate is available on the [SDS](#).

[Back to top](#)

Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use and/or disposal of butyl acrylate. These regulations may vary by city, state, country or geographic region. Information may be found by consulting the relevant [SDS](#) or [Contact Us](#).

[Back to top](#)

Additional Information

- [Safety Data Sheet](#)
- [Technical Data Sheet](#), Butyl Acrylate, The Dow Chemical Company, Form No. 745-00109-1004-AA
- The Basic Acrylic Monomers Manufacturers' website (www.bamm.net)
- The [European Basic Acrylic Monomer](#) Group

For more business information about butyl acrylate, visit the [DOW Acrylic Monomers](http://www.dow.com/acrylates/index.htm) web site (<http://www.dow.com/acrylates/index.htm>).

[Back to top](#)

References

- ¹ *Chemical Economics Handbook (CEH) Marketing Research Report Acrylic Acid and Esters*, SRI Consulting, 2004, page 35.
- ² *About Acrylates*, Basic Acrylic Monomer Manufacturers, Inc., 2014.
- ³ *n-Butyl Acrylate, Safety Data Sheet for the US*, The Dow Chemical Company
- ⁴ *CEH Marketing Research Report Acrylic Acid and Esters*, SRI Consulting, 2004, pages 5-8.
- ⁵ *n-Butyl Acrylate, Technical Data Sheet*, The Dow Chemical Company, Form No. 745-00109
- ⁶ DOW Acrylates website: Applications (www.dow.com/acrylates/app/index.htm)
- ⁷ *Organization for Economic Cooperation and Development (OECD) SIDS Initial Assessment Report for SIAM 15: Butyl Acrylate*, United Nations Environment Programme (UNEP) Publications, October 22-25, 2002, page 12.

[Back to top](#)

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 HEREUNDER 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.

[Back to top](#)

Form No. 233-00268-MM-1214X

