



1,2-Benzisothiazol-3(2H)-one (BIT)

Product Stewardship Summary March 2008

Chemical Name:	1,2-benzisothiazol-3(2H)-one
Synonyms:	1,2-benzisothiazolin-2-one; benzisothiazolinone
CAS Number:	2634-33-5
IUPAC Name:	1,2-benzisothiazol-3-(2H)-one
EC (EINECS) Number:	220-120-9

- *General Description.* Benzisothiazolinone (BIT) is a light brown to white powder and is used as an industrial biocide/preservative. BIT is registered by the U.S. EPA under the Federal Insecticide, Fungicide, and Rodenticide Act and supported in Europe under the Biocidal Products Directive. This product is not sold directly to the individual consumer. It is incorporated into products that are then sold to the general public.
- *Manufacture.* During production, potential exposure to the concentrate by humans and the environment is tightly controlled and confined through strong industrial hygiene protocols and processes, engineering of the manufacturing equipment, and the use of personal protective equipment.
- *Applications.* BIT is used as an industrial biocide/preservative in a wide range of aqueous-based products (detergents, household cleaning products, laundry additives, paint and coatings, polymer emulsions, glues/adhesives, and pesticides) to prevent bacterial growth and spoilage.
- *Benefits.* BIT provides long term, broad spectrum activity against bacteria, fungi, and yeasts. It is heat stable up to 150°C thereby allowing flexibility in its addition point within a wide range of manufacturing processes. Additionally, it contains no halogens and so does not contribute to AOX; and similarly, it neither contains nor

generates formaldehyde during use. It is also available in wholly-aqueous zero-VOC formulations.

- *General Precautions.* BIT as a concentrate is moderately toxic from ingestion, but it is of low acute toxicity from dermal contact. BIT may produce severe irritation to the respiratory tract and lungs if inhaled. It is a slight skin irritant, and it is considered to be irritating or corrosive to the eyes. BIT concentrate has demonstrated the ability to induce skin sensitization in humans; however, once diluted for use as a preservative, the likelihood of skin sensitization occurring is expected to be minimal.

BIT has been tested in a series of in vitro and in vivo mutagenicity assays. BIT does not damage genetic material, and therefore is not considered to be mutagenic.

The primary effects from repeated exposure to concentrated material are a decrease in bodyweight gain and irritation at the initial site of contact, e.g. the gastrointestinal or respiratory tract. Other than the irritant effect, BIT does not produce any damage to specific organs.

BIT does not impair reproductive performance, fertility, or fetal development.

BIT concentrate is highly toxic to fish, aquatic invertebrates, and aquatic plants.

Upon absorption, BIT is excreted rapidly from the body with no potential for bioaccumulation.

- *Likelihood of exposure.* This product is not sold directly to the individual consumer. It is incorporated into products that are then sold to the general public. During the manufacture of BBIT and its subsequent formulation into various products, exposure to humans and the environment are controlled by engineering controls and personal protective equipment.
- *Risk Management.* Those who handle the concentrated product should read and follow all label directions carefully.

For additional information, please visit our web site at www.archchemicals.com and click on “Contact Us”.

This summary is intended to give general information about the chemical or categories of chemicals addressed. It is not intended to be, and should not be relied upon as, a substitute for the detailed health and safety information contained in the Material Safety Data Sheet (or any other required hazard communication material) for this product, which should be consulted before use of the chemical or treatment for exposure. As with any product, it is very important to read and carefully follow all label directions and warnings. This summary does not supplant or replace required regulatory and/or legal communication documents.