1,2-benzisothiazolin-3-one (BIT)

This document provides a brief description of 1,2-benzisothiazolin-3-one (BIT), its uses, and the potential hazards associated with short and long term exposure. Environmental impact information for accidental releases is included. This information is general in nature and is not intended as a replacement for the safety data sheet (SDS), product label, and other safe handling literature. For additional information consult the respective LANXESS Corporation safety data sheet.

Identification

Chemical Name:	1,2-benzisothiazolin-3-one (BIT)
Synonym(s):	1,2-Benzisothiazol-3(2H)-one
CAS Number:	2634-33-5
LANXESS Products Containing BIT:	*For a list of materials containing BIT, please contact your LANXESS Corporation sales representative.*

Description

Overview: 1,2-benzisothiazolin-3-one is a powdery, white solid at ambient temperatures.

Uses: BIT is the “active” ingredient in several Environmental Protection Agency (EPA) Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) registered LANXESS products. These EPA registered products may be used in industrial preservative or biocide in the manufacture of aqueous coatings, polymer dispersions, plasters, synthetic adhesives, pigment slurries, concrete additives or cleaners and detergents.

Properties:

Solubility in Water:	Soluble
Density:	1.46 (20˚C)
Melting Point:	157.1°C (314.78°F)
Decomposition:	>300°C (572°F)
Auto-Ignition:	>400°C (752°F)
Boiling Point:	Approx. 100°C (212°F)

Potential Human Health Effects

Occupational Exposure

Potential for occupational exposure exists during manufacture and in unloading, storage, staging and transfer operations at facilities using BIT as an additive. A much lower potential for exposure exists in facilities using the product in closed manufacturing processes by trained personnel.

Employee Training

Workers handling BIT should be trained to implement proper handling procedures and to understand the potential health and physical hazards of this product. Process enclosures, local exhaust ventilation or other engineering controls should be used to keep workers exposure to airborne BIT below any recommended or statutory limits. This substance has poor warning properties since the concentration at which the odor can be smelled is substantially higher than the airborne concentration standard/guideline, a NIOSH approved positive pressure air-supplied respirator is recommended. In addition, it is recommended that workers wear chemical splash goggles or a face shield, and chemical-resistant gloves when handling BIT and products containing this chemical.

Consumer Exposure

LANXESS Corporation does not sell BIT, nor materials containing the component, to the general public. The general population may only be exposed to BIT through dermal contact with materials containing the substance.

Short-Term Health Effects

BIT may give off gas, vapor, or dust that is irritating or corrosive to the respiratory tract. The component is corrosive to the digestive tract and may cause burns to mouth, throat and stomach. Corrosive symptoms of ingestion may include coughing, burning, ulceration, and pain. Skin contact may cause severe burns with symptoms of redness, itching, swelling, burning, and possible permanent damage. Contact with the eyes can cause serious damage with adverse symptoms of pain, watering, and redness.

Long-Term Health Effects

Once sensitized, prolonged or repeated exposure to BIT may cause an allergic skin reaction when exposed to very low levels of this component. Allergic skin reaction symptoms include reddening, swelling and rash.

Physical Hazards

BIT is stable under normal conditions of use. If in a fire or heated, the pressure increase can cause the container to burst, with the risk of an explosion. Heating to decomposition may release carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides, and metal oxides. Avoid heat, open flames and other potential sources of ignition. Avoid contact with oxidizing agents, reducing agents, mild steel, aluminum, and copper.

Potential Environmental Impact

BIT is readily biodegradable. An accidental release to the environment may pose a chronic danger to fish (moderate toxicity), invertebrates (moderate toxicity) and aquatic plants (moderate toxicity) prior to degradation.

Federal Insecticide, Fungicide, Rodenticide Act (FIFRA) Label

FIFRA products are registered by the United States Environmental Protection Agency (EPA) and are subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for Occupational Safety and Health Administration (OSHA) workplace labels of industrial chemicals. The pesticide label also includes other important information, including directions for use.

Conclusion

Under normal conditions of anticipated use as described in this Product Safety Assessment, and if the recommended safe use and handling procedures are followed, BIT is not expected to pose a significant risk to human health or the environment.

References

European Chemicals Agency, 1,2-benzisothiazol-3(2H)-one, July 2018

NCI Global, CAS, 1,2-benzisothiazolin-3-one*, American Chemical Society, 2018*

Safety Data Sheet (SDS), BIOCHEK BIT 20, LANXESS Corporation

Contact Information

LANXESS Corporation, Product Safety & Regulatory Affairs, 111 RIDC Park West Drive, Pittsburgh, PA 15275-1112, USA, Phone 1-800-526-9377 [1-800-LANXESS]

Notices

Use and Application Information

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.