

# Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Corrosive to eyes and skin on contact. This compound is a skin sensitizer. <b>POSSIBLE CARCINOGEN. MINIMIZE EXPOSURE.</b> Hygroscopic -- keep container tightly sealed.	

## Section I. Chemical Product and Company Identification

Chemical Name	<b>1,4-Butanediol Diglycidyl Ether</b>		
Catalog Number	B0964	Supplier	TCl America 9211 N. Harborgate St. Portland OR 1-800-423-8616
Synonym	1,4-Bis(2,3-epoxypropoxy)butane		
Chemical Formula	C <sub>10</sub> H <sub>18</sub> O <sub>4</sub>		
CAS Number	2425-79-8	In case of Emergency Call	<b>Chemtrec®</b> <b>(800) 424-9300 (U.S.)</b> <b>(703) 527-3887 (International)</b>

## Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
1,4-Butanediol Diglycidyl Ether	2425-79-8	-----	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen.	Rat LD <sub>50</sub> (oral) 1134 mg/kg Rabbit LD <sub>50</sub> (dermal) 1,130mg/kg Mouse LD <sub>50</sub> (oral) 1100 µg/kg Rat LC <sub>50</sub> (inhalation) >250 ppm/6H

## Section III. Hazards Identification

Acute Health Effects	Corrosive to skin, eyes, and respiratory system. Liquid or spray mist may produce tissue damage, particularly in mucous membranes of the eyes, mouth and respiratory tract. Skin contact may produce burns. Eye contact can result in corneal damage or blindness. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Corrosive materials may cause serious injury if ingested. Skin contact may result in sensitization. Always cover all exposed skin with an impermeable layer and use proper eye protection. A OSHA/MSHA approved dust and vapor respirator is required when working with this material. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	<b>CARCINOGENIC EFFECTS</b> : Classified POSSIBLE by TSCA. <b>MUTAGENIC EFFECTS</b> : Classified PROVEN by TSCA. <b>TERATOGENIC EFFECTS</b> : Not available. <b>DEVELOPMENTAL TOXICITY</b> Not available. There is no known effect from chronic exposure to this product. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

## Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention. Treat symptomatically and supportively.
Skin Contact	If the chemical gets spilled on a clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.
Inhalation	If the victim is not breathing, perform artificial respiration. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention. Treat symptomatically and supportively.
Ingestion	DO NOT induce vomiting. Loosen tight clothing such as a collar, tie, belt, or waistband. If the victim is not breathing, administer artificial respiration. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.

## Section V. Fire and Explosion Data

Flammability	Combustible.	Auto-Ignition	Not available.
Flash Points	111°C (231.8°F)	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO <sub>2</sub> ).		
Fire Hazards	No specific information is available regarding the flammability of this compound in the presence of various materials.		

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Emergency phone number (800) 424-9300

Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. No additional information is available regarding the risks of explosion.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO <sub>2</sub> , water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.

### Section VI. Accidental Release Measures

Spill Cleanup Instructions	Corrosive liquid. Harmful liquid. Keep away from heat and sources of ignition. Mechanical exhaust required. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT get water inside container. DO NOT touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.
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### Section VII. Handling and Storage

Handling and Storage Information	CORROSIVE. SKIN SENSITIZER. POSSIBLE CARCINOGEN. Handle with caution and minimize exposure. Keep container dry. Keep away from heat and sources of ignition. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT ingest. Do not breathe gas, fumes, vapor or spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Avoid contact with skin and eyes. Always store away from incompatible compounds such as oxidizing agents, acids, alkalis (bases), moisture.
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### Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.
Personal Protection	Face shield. Lab coat. Vapor respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
	
Exposure Limits	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen.

### Section IX. Physical and Chemical Properties

Physical state @ 20°C	Colorless liquid.	Solubility	Not available.
Specific Gravity	1.049		
Molecular Weight	202.25	Partition Coefficient	Not available.
Boiling Point	155-160°C @ 11mmHg	Vapor Pressure	10 mm of Hg (@ 20°C)
Melting Point	Not available.	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
Viscosity	Not available.	Taste	Not available.

### Section X. Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Hygroscopic; keep container tightly closed.
Incompatibilities	Reactive with oxidizing agents, acids, alkalis (bases), moisture.

### Section XI. Toxicological Information

RTECS Number	EJ5100000
Routes of Exposure	Ingestion. Inhalation. Eye contact. Skin contact.
Toxicity Data	Rat LD <sub>50</sub> (oral) 1134 mg/kg Rabbit LD <sub>50</sub> (dermal) 1,130mg/kg Mouse LD <sub>50</sub> (oral) 1100 µg/kg Rat LC <sub>50</sub> (inhalation) >250 ppm/6H
Chronic Toxic Effects	<b>CARCINOGENIC EFFECTS</b> : Classified POSSIBLE by TSCA. <b>MUTAGENIC EFFECTS</b> : Classified PROVEN by TSCA. <b>TERATOGENIC EFFECTS</b> : Not available. <b>DEVELOPMENTAL TOXICITY</b> Not available. There is no known effect from chronic exposure to this product. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

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Emergency phone number (800) 424-9300

## Acute Toxic Effects

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**Section XII. Ecological Information**

## Ecotoxicity

Not available.

## Environmental Fate

Not available.

**Section XIII. Disposal Considerations**

## Waste Disposal

Recycle to process, if possible. Consult your local or regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state, and local regulations when disposing of this substance.

**Section XIV. Transport Information**

## DOT Classification

DOT CLASS 8: Corrosive liquid.

## PIN Number

UN1760

## Proper Shipping Name

Corrosive liquids n.o.s.

## Packing Group (PG)

II

## DOT Pictograms

**Section XV. Other Regulatory Information and Pictograms**

## TSCA Chemical Inventory (EPA)

This product is **ON** the EPA Toxic Substances Control Act (TSCA) inventory.

## WHMIS Classification (Canada)

WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC).

## EINECS Number (EEC)

219-371-7

## EEC Risk Statements

R43- May cause sensitization by skin contact.  
 R20/21- Harmful by inhalation and in contact with skin.  
 R36/38- Irritating to eyes and skin.

## Japanese Regulatory Data

Not available.

**Section XVI. Other Information****Version 1.0****Validated on 8/4/1997.****Printed 1/22/2005.****Notice to Reader**

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, household, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.