



**COLUMBUS CHEMICAL INDUSTRIES INC.**

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**Material Safety Data Sheet**

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements

**U.S. Department of Labor**

Occupational Safety and Health Administration  
 (Non-Mandatory Form)  
 Form Approved  
 OMB No. 1218-0072

**IDENTITY** (as Used on Label and List)

**Tetrahydrofuran**

**Note:** Blank spaces are not permitted. If any item is not applicable or no information is available, the space must be marked to indicate that.

**Section I**

Manufacturers /Distributor Address Number Street City State and Zip Code

Columbus Chemical Industries, Inc.

N4335 Temkin Road

Columbus, Wisconsin 53925

Emergency Telephone Number

CHEMTREC 1 (800) 424-9300

Telephone Number for Information

1 (920) 623-2140

Date Prepared

11-28-2006

Signature of Preparer (optional)

**Section II - Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity, Common Name(s))	CAS #	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Tetrahydrofuran*	109-99-9	590 mg/m <sup>3</sup> (TWA)	295 mg/m <sup>3</sup> (STEL)	735 mg/m <sup>3</sup> (STEL)	

\*SYNONYMS: Butylene oxide, Cyclotetramethylene oxide; Diethylene oxide; 1,4-Epoxybutane; Furanidine; Hydrofuran; Oxolane; Oxacyclopentane; THF.

**Section III - Physical/Chemical Characteristics**

Boiling Point	66 °C (150.8 °F)	Specific Gravity (H <sub>2</sub> O = 1)	0.88
Vapor Pressure (mm Hg) @ 20 °C (68 °F)	149 mmHg	Melting Point	-108.5 °C (-163.3 °F)
Vapor Density (AIR = 1)	2.5	Evaporation Rate (Butyl Acetate = 1)	6.3

Solubility in Water

Soluble in water.

Appearance and Odor

Clear, colorless liquid with sweet, ethereal odor.

**Section IV Fire and Explosion Hazard Data**

Flash Point (Method Used)	Flammable Limits	LEL	UEL
-14.5 °C / 5.9 °F (closed cup)	(%V/V)	2%	11.8%

Extinguishing Media

Carbon dioxide, dry chemical powder, appropriate foam.

Special Fire Fighting Procedures

In the event of a fire, wear full protective clothing and NIOSH/MSHA-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Use water to keep containers cool.

Unusual Fire and Explosion Hazards

Emits toxic fumes under fire conditions. Do not breathe vapors. Vapors from this product may migrate along currents to an ignition source and flash back. Autoignition Temperature: 321 °C (609.8 °F)

**Section V Reactivity Data**

Stability	Unstable		Conditions to Avoid	Avoid heat, sparks, open flames
	Stable	X		light, air, moisture, and incompatible materials.

**Incompatibility Materials to Avoid**

Oxidizing agents, lithium-aluminum alloys, sodium aluminum hydride, alkali, calcium hydride, bromine, titanium tetrachloride, borane, metal halides, air, moisture.

**Hazardous Decomposition or Byproducts**

Carbon dioxide, carbon monoxide.

**Hazardous Polymerization**

	May Occur		Conditions to Avoid	Not available.
	Will Not Occur	X		

**Section VI Health Hazard Data**

Routes of Entry	Inhalation ?	Skin ?	Ingestion ?
	Yes	Absorbed thru skin/eyes	Yes

**Health Hazards (Acute and Chronic)**

May be fatal if swallowed; harmful if inhaled or absorbed through skin. Causes skin, eye and upper respiratory tract irritation and possible burns. Can cause central nervous system depression and affect respiration (dyspnia).

Harmful to blood, liver, heart, eyes, nervous system, mucous membranes, kidney and gastrointestinal tract.

Carcinogenicity	NTP	IARC Monographs	OSHA REGULATED?
	Reasonably Anticipated	Not Listed	Not Listed

**Signs and Symptoms of Exposure.**

INHALATION: Wheezing, headache, coughing, anesthesia, dizziness, vomiting, drowsiness. INGESTION: Vomiting, nausea,

dizziness, somnolence, diarrhea, vomiting, unconsciousness and coma. SKIN/EYES: Redness, swelling, itching.

Medical Conditions Generally Aggravated by Exposure

Pre-existing respiratory conditions may be aggravated.

**Emergency and First Aid Procedures**

INGESTION: If swallowed, call a physician immediately. Induce vomiting by giving two glasses of water provided person is conscious. EYES: In case of contact, immediately flush with large amounts of water for at least 15 minutes. INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call physician. SKIN: Immediately wash skin with soap and large amounts of water.

**Section VII Precautions for Safe Handling and Use****Steps to be Taken in Case Material is Released or Spilled**

Evacuate and ventilate area. Wear NIOSH/MSHA-approved respirator, chemical-resistant boots and full protective clothing. Contain spill with dikes, sand or noncombustible absorbent material. Pick up, place in a bag and hold for disposal. Ventilate area and wash spill site after pickup complete.

Waste Disposal Method Dispose in accordance with all Federal, state, and local regulations.

**Precautions to be Taken in Handling and Storing**

Keep in tightly closed plainly-labeled containers, stored in a cool, dry, ventilated area. Protect against physical damage. Keep away from heat, sparks and flame. Maintain adequate ventilation. Ground all equipment containing this material. Avoid longterm storage; material may form trace peroxides upon longterm storage.

Other Precautions Containers, even when empty, will retain residue and vapors. Use with effective ventilation. Always obey hazard warnings and handle empty containers as if they were full. FLAMMABLE!

**Section VII Control Measures**

Respiratory Protection (Specify Type) NIOSH/MSHA-approved respirator with organic vapor cartridge.

Ventilation	Local Exhaust	Mandatory.	Special	Eyewash nearby.
	Mechanical (General)	Recommended.	Other	Safety shower nearby.

Protective Gloves Compatible chemical-resistant gloves. Eye Protection Goggles and Faceshield.

Other Protective Clothing or Equipment Full body-covering clothing. Compatible chemical-resistant boots.

Work /Hygienic Practices Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area. Avoid prolonged or repeated exposure. Ensure prompt removal from skin, eyes and clothing. Wash thoroughly after handling. Avoid breathing vapor. FLAMMABLE!

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