MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL IDENTIFICATION

Trade Name:	Glycidol	Date of Issue:	October 29, 1986
Synonyms:	GDL; 2,3-epoxy-1-propanol	Revised Date:	November 19, 2010
Formula:	$C_3H_6O_2$		
Chemical Family:	Ether		
Chemical Use:	Major uses include urethane coatings and caulks, chlorinated solvent stabilizer, surfactants, and an additive in hydraulic fluids		
Telephone Number:	Information	(281) 474-3271	
Emergency Number:	**Chemtrec**	**800) 424-9300 Domestic**	
		(703) 527-3887 International	

HMIS Hazard Rating

Health:	3*	4 = Extreme
Fire:	2	3 = High
Reactivity:	2	2 = Moderate
*-Chronic effect indicator. See Section 11.		1 = Slight
PPE rating to be supplied by user depending on use conditions.		0 = Least

SECTION 2 – HAZARDS IDENTIFICATION

DANGER

Hazard Statements

H350 May cause cancer
H341 Suspected of causing genetic defects
H360F May damage fertility or the unborn child
H331 Toxic if inhaled.
H312 Harmful in contact with skin.
H302 Harmful if swallowed
H319 Causes serious eye irritation

H335 May cause respiratory irritation
H315 Causes skin irritation

Precautionary Statements
P201 Obtain special instructions before use.
P313 Get medical advice/attention if you feel unwell.

Carc. 1B
Muta. 2
Repr. 1B
Acute Tox. 3 *
Acute Tox. 4 *
Acute Tox. 4 *
Eye Irrit. 2
STOT SE 3
Skin Irrit. 2

(T) Toxic

Risk Phrases:
R45 – May cause cancer.
R60 – May impair fertility.
R21/22 – Harmful in contact with skin and if swallowed.
R23 – Possible risk of irreversible effects.
R36/37/38 – Irritating to eyes, respiratory system and skin.
R68 – Toxic by inhalation.

Safety Phrases:
S53 – Avoid exposure –obtain special instructions before use.
S45 – In case of accident or if you feel unwell, seek medial advice immediately (show this label where possible.

Inhalation: May cause nose and throat irritation. Prolonged exposure to vapors may cause narcosis. Exposure of this kind is unlikely due to the low vapor pressure of glycidol.

Skin Contact: Causes severe burns, which may be delayed. Readily absorbed through the skin.

Eye Contact: Contact by way of mist, splash, or vapors may cause severe eye irritation or chemical burns. Injury to the cornea may occur if the eye is not flushed with water immediately.

Ingestion: Harmful or fatal if swallowed. May cause nausea, vomiting, diarrhea, and irritation of the gastrointestinal tract. May also cause central nervous system depression evidenced by dizziness, headache, intoxication, restlessness, early emotional instability, impaired motor coordination, stupor, narcosis, coma, and death. Injury to the kidneys and liver may also result.

SECTION 3 – COMPOSITION

Components	Percentage	TLV (ppm)	CAS #
Glycidol	>95	2	556-52-5

SECTION 4 – FIRST AID MEASURES

Inhalation: Remove victim to fresh air. If breathing is difficult, give oxygen. If not breathing, administer artificial respiration. Get medical attention.

Skin Contact: Immediately remove contaminated clothing and shoes. Wipe excess material from skin and flush with water for at least 15 minutes. Use soap if available or follow by washing with soap and water. Do not reuse contaminated clothing without laundering. Dispose of all contaminated leather articles such as gloves and shoes. Get medical attention.

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. Get medical attention.

Ingestion: Get medical attention immediately.

SECTION 5 – FIREFIGHTING MEASURES

Extinguishing Media: Use water, foam, dry chemical, or carbon dioxide (CO_2).

Special Firefighting Procedures/Precautions: Firefighters should wear NIOSH approved self-contained breathing apparatus. Responders should wear protective clothing to prevent skin contact. Move containers from fire area. If unable to move, cool sealed containers with water.

Unusual Fire and Explosion Information: Glycidol may undergo violent polymerization at high temperatures and rupture the containers. Emits acrid smoke and vapors when burning.

Environmental Note: Avoid runoff to waterways and sewers. May be toxic to aquatic organisms.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Protective Measures: Evacuate area of unprotected personnel. Eliminate sources of ignition. Stay upwind and out of low areas. Wear personal protective equipment (See section 8) when responding to spills.

Spill Management:

Small laboratory quantities (1 kilo or less) may be converted to glycerin with less than 0.1% glycidol by diluting into ten fold excess of water, adjusting the pH to 4 or less with sulfuric acid, and allowing to stand for three days. A lower pH, more water, and heat will accelerate the process.

For spills greater than 1 kilo, contact Dixie Chemical. Contain run-off from residue flush and dispose of properly. Prevent entry into waterways, sewer, or confined areas.

Disposal: Proper disposal should be evaluated based on regulatory status of this material (refer to section 13).

SECTION 7 – HANDLING AND STORAGE

Containers do not have to be grounded and bonded when material is transferred, but is recommended as a good practice. Keep away from heat, sparks, and flames.

Glycidol quality is sensitive to moisture and light. Store in a cold, dark, dry place. To maintain quality specifications, glycidol must be stored refrigerated at temperatures equal to or less than 41° (5°C).

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Respiratory Protection:	NIOSH approved respiratory protection for organic vapors.
Ventilation:	Utilize local exhaust to control high vapor connections in confined areas.
Protective Gloves:	Utilize appropriate impervious chemical gloves.
Eye Protection:	Chemical goggles and possibly a face shield. Have eyewash facilities readily available.
Other Protective Equipment:	Wear additional protective clothing to prevent skin contact. This may include chemical resistant boots and chemical resistant suits.
Work Practices:	Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet facilities. Promptly remove soiled clothing and wash thoroughly before reuse. Shower after work using plenty of soap and water.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	187°F (86°C) @ 10 mm Hg
Melting Point:	-49°F (-45°C)
Molecular Weight:	74
Volatility/Vol (%):	100
Vapor Pressure (mm Hg):	0.9 @ 77°F (25°C)
Vapor Density (Air = 1):	2.562
Solubility in H_2O:	Completely miscible.
Appearance/Odor:	Clear, colorless liquid / Slight Odor
Odor Threshold:	Not Established
Specific Gravity (H_2O = 1):	1.114 @ 77°F (25°C)
pH:	Not Established
Evap. Rate (Butyl Acetate = 1):	N.E.
Flash Point:	178°F (81.1°C) SETA Closed Cup Tester, ASTM D 3828.
Lower Explosive Limit:	2.96 (% Volume)

Upper Explosive Limit: 13.89 (% Volume)
Autoignition Temperature: 779°F (415°C)

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability: Stable.

Conditions to Avoid: Incompatibles. Temperatures exceeding 41°F (5°C) will affect product quality.

Incompatible Materials: Incompatible with strong oxidizers and nitrates. Will undergo rapid to violent exothermic polymerization in the presence of strong acids, bases, metals (such as copper and zinc), and metal salts (such as aluminum chloride, iron (III) chloride, and tin (IV) chloride). Will attack some forms of plastics, rubber, and coatings.

Decomposition Products: Glycerin and polyglycidol.

Hazardous Polymerization: Will not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION

Glycidol may be a skin sensitizer. Glycidol has exhibited experimental reproductive, kidney, and liver effects in experimental animal studies. ACGIH classifies glycidol as a category A3 carcinogen. The A3 category denotes chemicals, which are confirmed animal carcinogens, however, exposures are by routes or mechanisms not considered relevant to worker exposure. Available epidemiological studies do not confirm an increased risk in cancer.

Carcinogenicity listed by: NTP: Yes IARC: Yes OSHA: No

ACGIH	Glycidol	TLV:	2 ppm	STEL:	Not Established
OSHA	Glycidol	PEL:	50 ppm	STEL:	Not Established
NIOSH	Glycidol	IDLH:	150 ppm		

Inhalation: LC50: 580 ppm/8H (rat)
LC50: 450 ppm/4H (mouse)

Skin: 100 mg/24 Hour Moderate (rabbit)
558 mg/3 Day Moderate (rabbit)
LD50: 1980 mg/kg (rabbit)

Eye: 2 mg/24 Hour Severe (rabbit)

Ingestion: LD50: 420 mg/kg (rat)
LD50: 431 mg/kg (mouse)

SECTION 12 – ECOLOGICAL INFORMATION

No data available.

SECTION 13 – DISPOSAL INFORMATION

Place in a city, state, or federally permitted disposal facility. Handle in accordance with all applicable regulations.

SECTION 14 – TRANSPORTATION INFORMATION

US DOT:

Note: It is the policy of Dixie Chemical Company to ship glycidol refrigerated in order to maintain quality specifications.

Proper Shipping Name:	Toxic, liquids, organic, n.o.s. (2,3-epoxy-1-propanol)
Primary Hazard Class:	6.1
Secondary Hazard Class:	No
Identification Number:	UN 2810
Packing Group:	PG III
Reportable Quantity:	No
Marine Pollutant:	No
Label(s) Required:	POISON

SECTION 15 – REGULATORY INFORMATION

U.S. Regulations:

TSCA: All substances are listed on, or are exempt from reporting.
TSCA 12(b) Export Notification: Not Listed
California Proposition 65: Glycidol is known by the State of California to cause cancer.

SARA Hazard Notification:

Hazard Categories Under Title III: Acute, Chronic, Fire, Reactive.
Section 302 Extremely Hazardous Substances: Not Listed
Section 313 Toxic Chemicals: Not listed.
CERCLA RQ: Not listed.

Canadian Regulations:
Glycidol is listed on the DSL.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and MSDS contains all the information required by the Controlled Products Regulations.

European Regulations:

Glycidol:
EINECS Number: 209-128-3

Index Number: 603-063-00-8

Hazard Symbol:
T = Toxic

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Japanese Regulations:

ENCS Number: 2-2389

Australian Regulations:

Listed on the AICS.

Korean Regulations:

ECL Number: KE-27538

Philippines Regulations:

Glycidol is listed on the PICCS.

SWISS Regulations:

Glycidol is listed on the Giftliste 1:
SWISS No: G-1662
(List of Toxic Substances 1),
Toxic Category 24

SECTION 16 – OTHER INFORMATION

PPE Codes (NPCA-HMIS)

A – Glasses
B – Glasses, Gloves
C – Glasses, Gloves, Apron
D – Faceshield, Gloves, Apron
E – Glasses, Gloves, Dustmask
F – Glasses, Gloves, Apron, Dust Respirator
G – Glasses, Gloves, Vapor Respirator
H – Goggles, Gloves, Apron, Vapor Respirator
I – Glasses, Gloves, Dust/Vapor Respirator
J – Goggles, Gloves, Apron, Dust/Vapor Respirator
K – Supplied Air, Gloves, Full Protective Suit, Boots

Disclaimer

The information contained in the Material Safety Data Sheet is based on technical data that Dixie Chemical Company believes to be reliable and is provided to our customers at no cost. It is intended for use by persons having technical skill and at their own discretion and risk. Dixie Chemical Company will assume no liability in connection with any uses of this information and no warranties, expressed or implied, are made with regards to this information since conditions of use are outside Dixie Chemical Company's control.