



# MATERIAL SAFETY DATA SHEET

Conforms to 93/112/EC and ISO 11014-1

Responsible Name: Diazyme Administration  
Effective 08/05/08

## SECTION 1: PRODUCT and COMPANY IDENTIFICATION

<b>PRODUCT NAME:</b>	<b>CATALOG #</b>
<b>Homocysteine Enzymatic Assay</b>	<b>DZ568A</b>
<b>Reagent R1</b>	<b>DZ568A-R1</b>
<b>Reagent R2</b>	<b>DZ568A-R2</b>
<b>Reagent R3</b>	<b>DZ568A-R3</b>

Supplier: **Diazyme Laboratories**  
12889 Gregg Court  
Poway, CA 92064, USA  
858-455-4754

Manufacturer: **Diazyme Laboratories**  
12889 Gregg Court  
Poway, CA 92064, USA  
858-455-4754

Authorized Representative: **MDSS GmbH**  
Schiffgraben 41  
30175 Hannover  
Germany

In case of Emergency: Call Diazyme Laboratories (858-455-4754)

Intended Use: Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific applications.

## SECTION 2: HAZARDOUS INGREDIENTS

Product	Ingredient	Amount	CAS #	EINECS #	Symbols	R-Phrase	S-Phrase
Reagent R1	1,2-Propanediol	10%	57-55-6	200-338-0	None Listed	None Listed	24/25
Reagent R2	Glycerol	20%	56-81-5	200-289-5	None Listed	None Listed	24/25
Reagent R3	Glycerol	15%	56-81-5	200-289-5	None Listed	None Listed	24/25

NOTE: Physical and health hazard information on reagent mixtures has not been determined. Any physical and health information noted is based on 1) evaluation of data for the pure ingredients, and 2) concentration of ingredients as packaged.

## SECTION 3: HAZARD IDENTIFICATION

### 1,2-PROPANEDIOL:

**Eyes:** May cause mild eye irritation. Causes redness and pain.  
**Skin:** May cause skin irritation. Causes redness and pain.  
**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Low hazard for usual industrial handling.  
**Inhalation:** Low hazard for usual industrial handling.  
**Chronic:** N/A

### GLYCEROL:

**Eyes:** May cause mild eye irritation.  
**Skin:** May cause mild skin irritation. Low hazard for usual industrial handling.  
**Ingestion:** May cause irritation of the digestive tract. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause headache. Expected to be a low ingestion hazard.  
**Inhalation:** May cause respiratory tract irritation. Low hazard for usual industrial handling.  
**Chronic:** May cause kidney injury.

		1,2-Propanediol	Glycerol
HMIS RATING	HEALTH:	0	0
	FLAMMABILITY:	1	0
	REACTIVITY:	0	0
NFPA RATING	HEALTH:	0	0
	FLAMMABILITY:	1	0
	REACTIVITY:	0	0
<b>HAZARD SYMBOLS:</b>		None Listed	None Listed
<b>R-Phrase:</b>		None Listed	None Listed
<b>S-Phrase:</b>		24/25	24/25

## SECTION 4: FIRST AID MEASURES

### 1,2-PROPANEDIOL:

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation develops, get medical aid.  
**Skin:** Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.  
**Ingestion:** Get medical aid. Wash mouth out with water.  
**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.  
**Notes to Physician:** Treat symptomatically and supportively.

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**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.  
**Skin:** Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.  
**Ingestion:** Get medical aid. Wash mouth out with water.  
**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.  
**Notes to Physician:** Treat symptomatically and supportively.

**SECTION 5: FIRE FIGHTING MEASURES****1,2-PROPANEDIOL & GLYCEROL:**

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.  
**Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or chemical foam.

**SECTION 6: ACCIDENTAL RELEASE MEASURES****1,2-PROPANEDIOL:**

**General Information:** Use proper personal protective equipment as indicated in Section 8.  
**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container.

**GLYCEROL:**

**General Information:** Use proper personal protective equipment as indicated in Section 8.  
**Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Do not let this chemical enter the environment.

**SECTION 7: HANDLING AND STORAGE****1,2-PROPANEDIOL:**

**Handling:** Wash thoroughly after handling. Use with adequate ventilation. Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes.  
**Storage:** Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container.

**GLYCEROL:**

**Handling:** Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes. Avoid ingestion and inhalation.  
**Storage:** Store in a cool, dry place. Store in a tightly closed container.

**SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION****1,2-PROPANEDIOL:**

**Engineering Controls:** Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.  
**Exposure Limits**  
United Kingdom, WEL - TWA: 150 ppm TWA (total particulate and vapour); 474 mg/m<sup>3</sup> TWA (total particulate);  
United Kingdom, WEL - STEL: 450 ppm STEL (total particulate and vapour); 1422 mg/m<sup>3</sup> STEL (total particulate)  
**Personal Protective Equipment**  
**Eyes:** Wear chemical splash goggles.  
**Skin:** Wear appropriate protective gloves to prevent skin exposure.  
**Clothing:** Wear appropriate protective clothing to prevent skin exposure.  
**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**GLYCEROL:**

**Engineering Controls:** Use adequate ventilation to keep airborne concentrations low.  
**Exposure Limits**  
United Kingdom, WEL - TWA: 10 mg/m<sup>3</sup> TWA (mist) United Kingdom, WEL - STEL: 30 mg/m<sup>3</sup> STEL (mist);  
United States OSHA: 15 mg/m<sup>3</sup> TWA (total dust); 5 mg/m<sup>3</sup> TWA (respirable fraction);  
Belgium - TWA: 10 mg/m<sup>3</sup> VLE (mist);  
France - VME: 10 mg/m<sup>3</sup> VME;  
Malaysia: 10 mg/m<sup>3</sup> TWA (mist);  
Netherlands: 10 mg/m<sup>3</sup> MAC (mist);  
Spain: 10 mg/m<sup>3</sup> VLA-ED  
**Personal Protective Equipment**  
**Eyes:** Wear chemical splash goggles.  
**Skin:** Wear appropriate protective gloves to prevent skin exposure.  
**Clothing:** Wear appropriate protective clothing to prevent skin exposure.  
**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

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<b>Physical State:</b>	Viscous liquid
<b>Color:</b>	Clear
<b>Odor:</b>	odorless
<b>pH:</b>	Not available
<b>Vapor Pressure:</b>	0.13mbar @20 deg C
<b>Viscosity:</b>	45 mPas @20 deg C
<b>Boiling Point:</b>	187 deg C @760mmHg ( 368.60°F)
<b>Freezing/Melting Point:</b>	-60 deg C ( -76.00°F)
<b>Autoignition Temperature:</b>	400 deg C ( 752.00 deg F)
<b>Flash Point:</b>	99 deg C ( 210.20 deg F)
<b>Explosion Limits: Lower:</b>	2.5 Vol %
<b>Explosion Limits: Upper:</b>	12.6 Vol %
<b>Decomposition Temperature:</b>	Not available
<b>Solubility in water:</b>	Miscible
<b>Specific Gravity/Density:</b>	1.030
<b>Molecular Formula:</b>	C <sub>3</sub> H <sub>8</sub> O <sub>2</sub>
<b>Molecular Weight:</b>	76.09

**GLYCEROL:**

<b>Physical State:</b>	Viscous liquid
<b>Color:</b>	clear, colorless
<b>Odor:</b>	odorless
<b>pH:</b>	5 (100 g/l aq.sol.)
<b>Vapor Pressure:</b>	0.003mbar @50 deg C
<b>Viscosity:</b>	1069 mPas @20 deg C
<b>Boiling Point:</b>	290 deg C @760mmHg ( 554.00°F)
<b>Freezing/Melting Point:</b>	18 deg C ( 64.40°F)
<b>Autoignition Temperature:</b>	400 deg C ( 752.00 deg F)
<b>Flash Point:</b>	160 deg C ( 320.00 deg F)
<b>Explosion Limits: Lower:</b>	0.9 Vol %
<b>Explosion Limits: Upper:</b>	Not available
<b>Decomposition Temperature:</b>	Not available
<b>Solubility in water:</b>	>500 g/l (20°C)
<b>Specific Gravity/Density:</b>	1.261
<b>Molecular Formula:</b>	C <sub>3</sub> H <sub>8</sub> O <sub>3</sub>
<b>Molecular Weight:</b>	92.09

**SECTION 10: STABILITY AND REACTIVITY****1,2-PROPANEDIOL:**

<b>Chemical Stability:</b>	Stable under normal temperatures and pressures. Hygroscopic: absorbs moisture or water from the air.
<b>Conditions to Avoid:</b>	Incompatible materials, exposure to moist air or water.
<b>Incompatibilities with Other Materials:</b>	Oxidizing agents, reducing agents, acid chlorides, nitric acid, acid anhydrides, hydrofluoric acid, chloroformates.
<b>Hazardous Decomposition Products:</b>	Carbon monoxide, carbon dioxide.
<b>Hazardous Polymerization:</b>	Will not occur.

**GLYCEROL:**

<b>Chemical Stability:</b>	Stable under normal temperatures and pressures. Hygroscopic: absorbs moisture or water from the air.
<b>Conditions to Avoid:</b>	Incompatible materials, exposure to moist air or water, temperatures above 140°C.
<b>Incompatibilities with Other Materials:</b>	Strong oxidizing agents, lead oxide, nitric acid, sulfuric acid, hydrogen peroxide, potassium permanganate, calcium hypochlorite, perchloric acid.
<b>Hazardous Decomposition Products:</b>	Carbon monoxide, carbon dioxide.
<b>Hazardous Polymerization:</b>	Will not occur.

**SECTION 11: TOXICOLOGICAL INFORMATION****1,2-PROPANEDIOL:**

<b>RTECS#:</b>	CAS# 57-55-6: TY2000000
<b>LD50/LC50:</b>	RTECS: CAS# 57-55-6: Draize test, rabbit, eye: 100 mg Mild; Draize test, rabbit, eye: 500 mg/24H Mild; Oral, mouse: LD50 = 22 gm/kg; Oral, mouse: LD50 = 20300 mg/kg; Oral, rabbit: LD50 = 18500 mg/kg; Oral, rat: LD50 = 20 gm/kg; Skin, rabbit: LD50 = 20800 mg/kg; Skin, rabbit: LD50 = 20800 mg/kg;
<b>Carcinogenicity:</b>	1,2-Propanediol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
<b>Other:</b>	See actual entry in RTECS for complete information. The toxicological properties have not been fully investigated.

**GLYCEROL:**

<b>RTECS#:</b>	CAS# 56-81-5: MA8050000
<b>LD50/LC50:</b>	RTECS: CAS# 56-81-5: Draize test, rabbit, eye: 126 mg Mild; Draize test, rabbit, eye: 500 mg/24H Mild; Draize test, rabbit, skin: 500 mg/24H Mild; Inhalation, rat: LC50 = >570 mg/m <sup>3</sup> /1H; Oral, mouse: LD50 = 4090 mg/kg; Oral, rabbit: LD50 = 27 gm/kg; Oral, rat: LD50 = 12600 mg/kg; Skin, rabbit: LD50 = >10 gm/kg;
<b>Carcinogenicity:</b>	Glycerol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
<b>Other:</b>	The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.



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## SECTION 12: ECOLOGICAL INFORMATION

### 1,2-PROPANEDIOL:

**Ecotoxicity:** Fish: Fathead Minnow: LC50: 54900 mg/L; 96h;  
Fish: Rainbow trout: LC50: 51600 mg/L; 96h;  
Daphnia: Daphnia: EC50: 34400 mg/L; 48h  
**Other:** Readily biodegradable.

### GLYCEROL:

**Ecotoxicity:** Daphnia: Daphnia: EC50: >10000 mg/l; 24h;  
Fish: Leuciscus idus: LC50: > 10000 mg/l; 24h  
**Other:** Do not empty into drains. Readily biodegradable. Log POW:  
-2.66 (calc.)

## SECTION 13: DISPOSAL CONSIDERATIONS

### 1,2-PROPANEDIOL & GLYCEROL:

Dispose of in a manner consistent with federal, state, and local regulations.

## SECTION 14: TRANSPORTATION INFORMATION

### 1,2-PROPANEDIOL & GLYCEROL:

	IATA	IMO	RID/ADR
<b>Shipping Name:</b>	Not regulated.	Not regulated.	Not regulated.
<b>Hazard Class:</b>			
<b>UN Number:</b>			
<b>Packing Group:</b>			

## SECTION 15: REGULATORY INFORMATION

### 1,2-PROPANEDIOL:

#### European/International Regulations

European Labeling in Accordance with EC Directives  
Hazard Symbols: Not available  
Risk Phrases: Not available  
Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 57-55-6: 0

Canada

CAS# 57-55-6 is listed on Canada's DSL List

#### US Federal

TSCA

CAS# 57-55-6 is listed on the TSCA Inventory.

### GLYCEROL:

#### European/International Regulations

European Labeling in Accordance with EC Directives  
Hazard Symbols: Not available  
Risk Phrases:  
Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 56-81-5: 0

Canada

CAS# 56-81-5 is listed on Canada's DSL List

#### US Federal

TSCA

CAS# 56-81-5 is listed on the TSCA Inventory.

## SECTION 16: OTHER INFORMATION

PREPARED BY: Diazyme Administration

PHONE NO: 858-455-4754

DATE PREPARED: 23 May 2006

The information provided on this Material Safety Data Sheet is provided in the interest of promoting safe handling of the material. While this information is believed to be correct Diazyme makes no warranty in respect to any of the information disclosed. Observe all federal, provincial, state and local laws concerning health and pollution.