

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>Lithium Enzymatic Assay</b>	<b>DZ116A</b>
<b>Reagent R1a</b>	<b>DZ116A-R1a</b>
<b>Reagent R2a</b>	<b>DZ116A-R2a</b>
<b>R1 Diluent</b>	<b>DZ116A-R1D</b>
<b>R2 Diluent</b>	<b>DZ116A-R2D</b>

Supplier: **Diazyme Laboratories**  
12889 Gregg Court  
Poway, CA 92064, USA  
858-455-4754Manufacturer: **Diazyme Laboratories**  
12889 Gregg Court  
Poway, CA 92064, USA  
858-455-4754Authorized 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 R1a	Serum Albumin	1.5%	9048-46-8	305-179-1	None Listed	None Listed	None Listed
	D(-)-Mannitol	5%	69-65-8	200-711-8	None Listed	None Listed	None Listed
Reagent R2a	Serum Albumin	1.5%	9048-46-8	305-179-1	None Listed	None Listed	None Listed
	D(-)-Mannitol	5%	69-65-8	200-711-8	None Listed	None Listed	None Listed
R1 Diluent	1,2-Propanediol	3%	57-55-6	200-338-0	None Listed	None Listed	24/25
R2 Diluent	1,2-Propanediol	5%	57-55-6	200-338-0	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****SERUM ALBUMIN & D(-)-MANNITOL:****EMERGENCY OVERVIEW***Not available***Potential Health Effects**

**Eye:** Dust may cause mechanical irritation.  
**Skin:** May cause skin irritation. Low hazard for usual industrial handling.  
**Ingestion:** Ingestion of large amounts may cause gastrointestinal irritation. Expected to be a low ingestion hazard.  
**Inhalation:** May cause respiratory tract irritation. Low hazard for usual industrial handling.  
**Chronic:** No information found.

**1,2-PROPANEDIOL:****EMERGENCY OVERVIEW***Hygroscopic (absorbs moisture from the air).***Potential Health Effects**

**Eye:** May cause slight transient injury.  
**Skin:** May be absorbed through damaged or abraded skin in harmful amounts. Allergic reactions have been reported. A single prolonged skin exposure is not likely to result in the material being absorbed in harmful amounts. Prolonged contact is essentially non-irritating to skin. Repeated exposures may cause problems.  
**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Low hazard for usual industrial handling. May cause hemoglobinuric nephrosis. May cause changes in surface EEG.  
**Inhalation:** Low hazard for usual industrial handling. Inhalation of a mist of this material may cause respiratory tract irritation. Material has a low vapor pressure, so exposure to vapor is not likely.  
**Chronic:** Exposure to large doses may cause central nervous system depression. Chronic ingestion may cause lactic acidosis and possible seizures. Exposures to propylene glycol having no adverse effects on the mother should have no effect on the fetus. Birth defects are unlikely. In animal studies, propylene glycol has been shown not to interfere with reproduction.

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		Serum Albumin	D(-)-Mannitol	1,2-Propanediol
HMIS RATING	HEALTH:	1	0	0
	FLAMMABILITY:	0	0	1
	REACTIVITY:	0	0	0
NFPA RATING	HEALTH:	0	0	0
	FLAMMABILITY:	0	0	1
	REACTIVITY:	0	0	0
HAZARD SYMBOLS:		N/A	N/A	N/A
R-Phrase:		None Listed	None Listed	None Listed
S-Phrase:		None Listed	None Listed	24/25

**SECTION 4: FIRST AID MEASURES****SERUM ALBUMIN:**

- 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:** If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.
- 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:** None.

**D(-)-MANNITOL:**

- Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
- Skin:** Immediately 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:** If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.
- 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:** None.

**1,2-PROPANEDIOL:**

- Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.
- Skin:** In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
- Ingestion:** If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
- Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
- Notes to Physician:** Persons with impaired kidney function may be more susceptible to the effects of this substance. Treat symptomatically and supportively.

**SECTION 5: FIRE FIGHTING MEASURES****SERUM ALBUMIN:**

- 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.

**D(-)-MANNITOL:**

- General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air.
- Extinguishing Media:** For small fires, use water spray, dry chemical, carbon dioxide or chemical foam.

**1,2-PROPANEDIOL:**

- General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
- Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or alcohol-resistant foam.

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**General Information:** Use proper personal protective equipment as indicated in Section 8.  
**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container.

**D(-)-MANNITOL:**

**General Information:** Use proper personal protective equipment as indicated in Section 8.  
**Spills/Leaks:** Wash area with soap and water. Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

**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. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

**SECTION 7: HANDLING AND STORAGE****SERUM ALBUMIN:**

**Handling:** Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with skin and eyes. Avoid ingestion and inhalation.  
**Storage:** Store in a cool, dry place. Keep from contact with oxidizing materials.

**D(-)-MANNITOL:**

**Handling:** Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes.  
**Storage:** Store in a tightly closed container. Store in a dry area. Keep refrigerated. (Store below 4°C/39°F.)

**1,2-PROPANEDIOL:**

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.  
**Storage:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

**SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION****SERUM ALBUMIN:**

**Engineering Controls:**  
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**Exposure Limits**  
CAS# 94349-60-7:

**Personal Protective Equipment**

**Eyes:** Wear chemical splash goggles.  
**Skin:** Wear appropriate protective gloves to prevent skin exposure.  
**Clothing:** Wear appropriate protective clothing to minimize contact with skin.  
**Respirators:** Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

**D(-)-MANNITOL:**

**Engineering Controls:**  
Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

**Exposure Limits**  
CAS# 69-65-8:

**Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.  
**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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Responsible Name: Diazyme Administration  
Effective 08/05/08**1,2-PROPANEDIOL:****Engineering Controls:**

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

**Exposure Limits**

CAS# 57-55-6:

United Kingdom, WEL - TWA: 150 ppm TWA (total particulate and vapour); 474 mg/m<sup>3</sup> TWA (total particulate and vapour); 1422 mg/m<sup>3</sup> STEL (total particulate and vapour); 1422 mg/m<sup>3</sup> STEL (total particulate)Russia: 7 mg/m<sup>3</sup> TWA (particulates)**Personal Protective Equipment****Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.**Skin:** Wear appropriate protective gloves to prevent skin exposure.**Clothing:** Wear appropriate protective clothing to prevent skin exposure.**Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES****SERUM ALBUMIN:**

<b>Physical State:</b>	Powder
<b>Color:</b>	slightly yellow - beige
<b>Odor:</b>	weak odor
<b>pH:</b>	7.0-0.2
<b>Vapor Pressure:</b>	Not available
<b>Viscosity:</b>	Not available
<b>Boiling Point:</b>	Not available
<b>Freezing/Melting Point:</b>	Not available
<b>Autoignition Temperature:</b>	Not available
<b>Flash Point:</b>	Not available
<b>Explosion Limits: Lower:</b>	Not available
<b>Explosion Limits: Upper:</b>	Not available
<b>Decomposition Temperature:</b>	Not available
<b>Solubility in water:</b>	Not available
<b>Specific Gravity/Density:</b>	Not available
<b>Molecular Formula:</b>	Not available
<b>Molecular Weight:</b>	Not available

**D(-)-MANNITOL:**

<b>Physical State:</b>	Solid
<b>Color:</b>	white
<b>Odor:</b>	Odorless.
<b>pH:</b>	Not available
<b>Vapor Pressure:</b>	Negligible.
<b>Viscosity:</b>	Not available
<b>Boiling Point:</b>	Not available
<b>Freezing/Melting Point:</b>	167 deg C (332.60°F)
<b>Autoignition Temperature:</b>	Not available.
<b>Flash Point:</b>	Not available
<b>Explosion Limits: Lower:</b>	Not available
<b>Explosion Limits: Upper:</b>	Not available
<b>Decomposition Temperature:</b>	Not available
<b>Solubility in water:</b>	Soluble in water.
<b>Specific Gravity/Density:</b>	Not available.
<b>Molecular Formula:</b>	C <sub>6</sub> H <sub>14</sub> O <sub>5</sub>
<b>Molecular Weight:</b>	182.0944

**1,2-PROPANEDIOL:**

<b>Physical State:</b>	Liquid
<b>Color:</b>	colorless viscous
<b>Odor:</b>	Odorless
<b>pH:</b>	Not available
<b>Vapor Pressure:</b>	0.08 mm Hg @ 20 deg C
<b>Viscosity:</b>	58.1 cps @ 20 deg C
<b>Boiling Point:</b>	187 deg C (368.60°F)
<b>Freezing/Melting Point:</b>	-60 deg C (-76.00°F)
<b>Autoignition Temperature:</b>	371 deg C (699.80 deg F)
<b>Flash Point:</b>	99 deg C (210.20 deg F)
<b>Explosion Limits: Lower:</b>	2.6 vol %
<b>Explosion Limits: Upper:</b>	12.6 vol %
<b>Decomposition Temperature:</b>	Not available
<b>Solubility in water:</b>	Soluble
<b>Specific Gravity/Density:</b>	1.0360 g/cm <sup>3</sup>
<b>Molecular Formula:</b>	C <sub>3</sub> H <sub>8</sub> O <sub>2</sub>
<b>Molecular Weight:</b>	76.09

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**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Incompatible materials, exposure to moist air or water.

**Incompatibilities with Other Materials:** Strong oxidizing agents.

**Hazardous Decomposition Products:** Not available

**Hazardous Polymerization:** Will not occur.

**D(-)-MANNITOL:**

**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Incompatible materials.

**Incompatibilities with Other Materials:** Not available

**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide.

**Hazardous Polymerization:** Has not been reported.

**1,2-PROPANEDIOL:**

**Chemical Stability:** Stable under normal temperatures and pressures. Hygroscopic: absorbs moisture or water from the air.

**Conditions to Avoid:** Excess heat, moist air.

**Incompatibilities with Other Materials:** Strong oxidizing agents.

**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide, aldehydes.

**Hazardous Polymerization:** Will not occur.

**SECTION 11: TOXICOLOGICAL INFORMATION****SERUM ALBUMIN:**

**RTECS#:** CAS# 94349-60-7: None listed

**LD50/LC50:** RTECS: Not available.

**Carcinogenicity:** ALBUMINE BOVINE / FRACTION V (PH:7.0) - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

**D(-)-MANNITOL:**

**RTECS#:** CAS# 69-65-8: OP2060000

**LD50/LC50:** RTECS:  
CAS# 69-65-8: Oral, mouse: LD50 = 22 gm/kg;  
Oral, rat: LD50 = 13500 mg/kg;

**Carcinogenicity:** D-mannitol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

**Other:** See actual entry in RTECS for complete information.

**1,2-PROPANEDIOL:**

**RTECS#:** CAS# 57-55-6: TY2000000

**LD50/LC50:** 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;

**Carcinogenicity:** Propylene glycol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

**Other:** Standard Draize Test: Administration into the eye (rabbit) = 100 mg (Mild). Standard Draize Test: Administration into the eye (rabbit) = 500 mg/24H (Mild). Standard Draize Test: Administration onto the skin (human) = 500 mg/7days (Mild). Standard Draize Test: Administration onto the skin (human) = 104 mg/3 days-Intermittent (Moderate).

**SECTION 12: ECOLOGICAL INFORMATION****SERUM ALBUMIN & D(-)-MANNITOL:**

Not available

**1,2-PROPANEDIOL:**

**Ecotoxicity:** Water flea Daphnia: EC50 > 10000 mg/L; 48 Hr; Unspecified  
Bacteria: Phytobacterium phosphoreum: EC50 = 710 mg/L; 30 min; Microtox test  
Fish: Goldfish: LC50 > 5000 mg/L; 24 Hr; Unspecified  
Fish: Guppy: LC50 > 1000 mg/L; 48 Hr; Unspecified

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

**D(-)-MANNITOL & 1,2-PROPANEDIOL:**

Products considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local authority for advice. Empty containers must be decontaminated before returning for recycling.

**SECTION 14: TRANSPORTATION INFORMATION****SERUM ALBUMIN, D(-)-MANNITOL & 1,2-PROPANEDIOL:**

	<b>IATA</b>	<b>IMO</b>	<b>RID/ADR</b>
<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****SERUM ALBUMIN:****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# 94349-60-7: Not available

Canada

**US Federal**

TSCA

CAS# 94349-60-7 is not listed on the TSCA Inventory. It is for research and development use only.

**1,2-PROPANEDIOL:****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# 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.

**D(-)-MANNITOL:****European/International Regulations**

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available

Risk Phrases:

Safety Phrases:

WGK (Water Danger/Protection)

CAS# 69-65-8: 0

Canada

CAS# 69-65-8 is listed on Canada's DSL List

**US Federal**

TSCA

CAS# 69-65-8 is listed on the TSCA Inventory.

**SECTION 16: OTHER INFORMATION**

PREPARED BY: Diazyme Administration

PHONE NO: 858-455-4754

DATE PREPARED: 26 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.