

MATERIAL SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: Lyse Dx

Manufacturer Name:

XDx

3260 Bayshore Blvd.

Brisbane, CA 94005

USA

Telephone: 415-287-2300

Emergency Telephone:

888-464-2967

Intended Use: Sample processing and preparation

2 HAZARDS IDENTIFICATION

Emergency Overview

Physical State: Liquid

Color: Colorless

Odor: Characteristic

WARNING!

Harmful if inhaled, absorbed through skin, or swallowed. Causes skin and eye irritation. Mist or vapor irritating to eyes and respiratory tract. May cause central nervous system effects.

Contact with acid liberates toxic gas.

Potential Health Effects

Inhalation: Harmful if inhaled. Causes respiratory tract irritation. May cause central nervous system effects.

Eye Contact: Causes eye irritation. Exposed individuals may experience eye tearing, redness, and discomfort.

Skin Contact: Harmful if absorbed through skin. Causes skin irritation.

Ingestion: Harmful if swallowed.

Target Organ(s): | Respiratory system | Central nervous system | Eye | Lung | Skin |

OSHA Regulatory Status: This product is hazardous according to OSHA 29CFR 1910.1200.

3 COMPOSITION / INFORMATION ON INGREDIENTS

General Information: The product contains:

Chemical Name	CAS-No.	Concentration*
†Guanidinium thiocyanate	593-84-0	< 50%
†2-Mercaptoethanol	60-24-2	1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

† This chemical is hazardous according to OSHA/WHMIS criteria.

4 FIRST AID MEASURES

Inhalation: Move to fresh air. If breathing stops, provide artificial respiration. For breathing difficulties, oxygen may be necessary. Get medical attention.

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

Skin Contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Ingestion: Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

5 FIRE-FIGHTING MEASURES

Extinguishing Media: Extinguish with foam, carbon dioxide, dry powder or water fog.

Unsuitable Extinguishing Media: Not applicable.

Special Fire Fighting Procedures: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Unusual Fire & Explosion Hazards: None known.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear protective clothing as described in Section 8 of this safety data sheet.

Spill Cleanup Methods: Small Liquid Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Large Spillages: Flush area with plenty of water. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

7 HANDLING AND STORAGE

Handling: Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. See Section 8 of the MSDS for Personal Protective Equipment.

Storage: Keep container tightly closed and in a well-ventilated place. Store away from incompatible materials.

8	EXPOSURE CONTROLS / PERSONAL PROTECTION
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Exposure Limits:

Chemical Name	Source	Type	Exposure Limits	Notes
2-Mercaptoethanol	US. AIHA WEEL	TWA	0.6 mg/m ³ 0.2 ppm	Skin

Engineering Controls: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Eye Protection: Wear safety glasses with side shields (or goggles). Wear a full-face respirator, if needed.

Hand Protection: Wear chemical-resistant gloves. Contact glove manufacturer for specific information.

Skin Protection: Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental Exposure Controls: Environmental manager must be informed of all major spillages.

9	PHYSICAL AND CHEMICAL PROPERTIES
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Color: Colorless

Odor: Characteristic

Odor Threshold: No data available.

Physical State: Liquid

pH: 6.6 - 7

Melting Point: No data available.

Freezing Point: No data available.

Boiling Point: No data available.

Flash Point: No data available.

Evaporation Rate: No data available.

Flammability Limit - Upper (%): No data available.

Flammability Limit - Lower (%): No data available.

Vapor Pressure: No data available.

Vapor Density (Air=1): No data available.

Specific Gravity: No data available.

Solubility in Water: Soluble

Solubility (Other): No data available.

Partition Coefficient (n-Octanol/water): No data available.

Autoignition Temperature: No data available.
Decomposition Temperature: No data available.
Viscosity: No data available.

10	STABILITY AND REACTIVITY
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Stability: Stable.

Conditions to Avoid: Contact with acids.

Incompatible Materials: Acids. Strong oxidizing agents.

Hazardous Decomposition Products: No data available.

11	TOXICOLOGICAL INFORMATION
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Specified Substance(s)

Acute Toxicity:

Chemical Name	Test Results
2-Mercaptoethanol	Dermal LD50 (Rabbit): 167 mg/kg
2-Mercaptoethanol	Inhalation LC50 (Rat): < 350 ppm
2-Mercaptoethanol	Oral LD50 (Rat): 244 mg/kg

Listed Carcinogens: None.

Product Information

Acute Toxicity:

Test Results: No test data available for the product.

Other Acute: Harmful if inhaled, absorbed through skin, or swallowed. Causes skin, eye and respiratory tract irritation. May cause central nervous system effects.

Chronic Toxicity: No additional adverse health effects noted.

12	ECOLOGICAL INFORMATION
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Ecotoxicity: The product contains a substance which is toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

Specified Substance(s)

Chemical Name	Test
2-Mercaptoethanol	EC50 (24 hour(s), Daphnia magna): 1.52 mg/l
2-Mercaptoethanol	IC50 (72 hour(s), Algae): 12 mg/l

Mobility: No data available.

Persistence and Degradability: No data available.

Bioaccumulation Potential: No data available.

13 DISPOSAL CONSIDERATIONS

General Information: Dispose of waste and residues in accordance with local authority requirements.

Disposal Methods: No specific disposal method required.

Container: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14 TRANSPORT INFORMATION

DOT Not regulated.

TDG Not regulated.

IATA Not regulated.

IMDG Not regulated.

15 REGULATORY INFORMATION

Canadian Controlled Products Regulations: This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

WHMIS Classification: D1B, D2B

Mexican Dangerous Statement: This product is dangerous according to Mexican regulations.

Inventory Status

This product or all components are listed or exempt from listing on the following inventory: TSCA, DSL

US Regulations

CERCLA Hazardous Substance List (40 CFR 302.4): Not regulated.

SARA Title III

Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A): Not regulated.

Section 311/312 (40 CFR 370):

Acute (Immediate) Chronic (Delayed) Fire Reactive Pressure Generating

Section 313 Toxic Release Inventory (40 CFR 372): Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
Not regulated.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): Not regulated.

Drug Enforcement Act: Not regulated.

TSCA

TSCA Section 4(a) Final Test Rules & Testing Consent Orders: Not regulated.

TSCA Section 5(a)(2) Final Significant New Use Rules (SNURs) (40CFR 721, Subpt. E): Not regulated.

TSCA Section 5(e) PMN-Substance Consent Orders: Not regulated.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D): Not regulated.

State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): Not regulated.

Massachusetts Right-To-Know List: 2-Mercaptoethanol

Michigan Critical Materials List (Michigan Natural Resources and Environmental Protection Act (Act. 451 of 1994)): Not regulated.

Minnesota Hazardous Substances List: 2-Mercaptoethanol

New Jersey Right-To-Know List: Not regulated.

Pennsylvania Right-To-Know List: 2-Mercaptoethanol

Rhode Island Right-To-Know List: Not regulated.

16	OTHER INFORMATION
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HAZARD RATINGS

	Health Hazard	Fire Hazard	Instability	Special Hazard
NFPA	2	1	0	NONE

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

NFPA Label colored diamond code: Blue - Health; Red - Flammability; Yellow - Instability; White - Special Hazards

	Health Hazard	Flammability	Physical Hazard	Personal Protection
HMIS	2	1	0	--

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

HMIS Label colored bar code: Blue - Health; Red - Flammability; Orange - Physical Hazards; White - Special

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Disclaimer: This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.