

SAFETY DATA SHEET

This SDS complies with REACH 1907/2006 and 2001/58/EC, GHS REVISION 5, OSHA 29CFR 1910.1200

Section 1: Chemical Product and Company Identification

MANUFACTURER'S NAME

CareDx
3260 Bayshore Boulevard
Brisbane, California 94005
USA

EMERGENCY TELEPHONE

U.S.: 1-866-519-4752
EU: 001-760-478-3961
Access Code 333766, Account# 11337
CareDx Information: 415-287-2401
CareDx Fax: 415-287-2456

Safety Data Sheet Competent Person: CustomerCare@caredx.com

DATE PREPARED: August 23, 2013

REVISION DATE: March 21, 2015

PRODUCT NAME:

LYSE Dx

FORMULA:

Preparation/Mixture

PRODUCT USE:

Sample processing and preparation. Stabilizes RNA

Section 2: Hazards Identification

GHS Hazard Class

Acute Toxicity Oral -- Category 3



Hazardous to the Aquatic Environment—Short Term (Acute) Hazard -- Category 3

Signal word:

Danger

Hazard Statement:

H300 Toxic if swallowed

H402 Harmful to aquatic life

Precautionary Statements:

Prevention

P264

Wash hands thoroughly after handling.

P270

Do not eat, drink, or smoke when using this product.

P273

Avoid release to the environment

Response

P301 + P310

If SWALLOWED: Immediately call a Poison Control center/doctor/physician if you feel unwell.

Storage

P330

Rinse mouth

Disposal

P405

Store locked up

P501

Dispose of waste materials and container by following the waste disposal requirements of your country, state, or local authorities.

Hazard(s) Not Otherwise Classified (HNOC): Not classified

HAZARD CLASSIFICATION:

Classified as hazardous based on IATA, IMO, and DOT.

FIRE AND EXPLOSION:

Not considered flammable or combustible, but this product will burn if involved in a fire.

POTENTIAL HEALTH EFFECTS:

<1 % of mixture consists of ingredients of unknown acute toxicity

OTHER:

CHRONIC EFFECTS OF OVEREXPOSURE:

None

APPEARANCE:

Clear liquid, no odor

NFPA Rating:

Component	Health (Blue)	Flammability (Red)	Reactivity (Yellow)	Special (White)
LYSE Dx	2	1	0	--

Section 3: Composition, Information on Ingredients R&D

PRODUCT COMPOSITION	APPRX %	CAS NO.	EINECS/ELINCS	DANGER SYMBOL	RISK PHRASE	DSL CANADA
Guanidinium thiocyanate	<50	593-84-0	209-812-1 615-004-00-3	Xn	R20/21/22; 32; 52/53	Y
2-Mercaptoethanol	1	60-24-2	200-464-6	T, N	R23/24/25- 38-41-43- 50/53	Y

Trade Secret (TS) Some items on this SDS may be designated as trade secrets. Bonafide requests for disclosure of trade secret information to medical personnel must be made in accordance with the provisions contained in 29 CFR 1910.1200 I 1-13. The full text for all R-Phrases is shown in Section 16.

Section 4: First Aid Measures

Description of First Aid Measures

INHALATION:	Move to fresh air. If breathing stops, provide artificial respiration. For breathing difficulties, oxygen may be necessary. 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.
EYE CONTACT:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
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.

Most important symptoms and effects, both acute and delayed

Symptoms/Injuries After Inhalation	May cause respiratory tract irritation.
Symptoms/Injuries After Skin Contact	Harmful if absorbed through skin. Causes skin irritation.
Symptoms/Injuries After Eye Contact	May cause eye irritation. Exposed individuals may experience eye tearing, redness, and discomfort.
Symptoms/Injuries After Ingestion	May be harmful if swallowed.

Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately.

Section 5: Fire-fighting Measures

Suitable extinguishing media	Extinguish with foam, carbon dioxide, dry powder or water fog.
Special hazards arising from the substance or mixture	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Protective actions fire-fighters	Wear standard protective equipment and self contained breathing apparatus for firefighting if necessary.
Further information	None

Section 6: Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures

Wear proper protective equipment as specified in Section 8: Exposure Controls/Personal Protection
Prevent spills or contaminated rinse water from entering sewers or watercourses.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent spills or contaminated rinse water from entering sewers or watercourses.

Methods and materials for containment and cleaning up

Place material into a chemical waste container.



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 Spills: Flush area with plenty of water.

Reference to other Sections For personal protection reference section 8. For disposal reference section 13.

Section 7: Handling and Storage

Precautions for safe handling

Avoid contact with skin, eyes or clothing.

Avoid breathing mist or vapor.

See Section 8 of the SDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities None

Specific uses Sample processing and preparation. Stabilizes RNA

Section 8: Exposure Controls/Personal Protection

Control Parameters

PRODUCT COMPOSITION	ACGIH TLV	OSHA PEL	NIOSH REL	U.S. WEEL TWA	Canada OEL	Mexico OEL
Guanidinium thiocyanate	-----	-----	-----	-----	-----	-----
2-Mercaptoethanol	-----	-----	-----	0.6 mg/m ³ 0.2 ppm	-----	-----

Exposure controls

VENTILATION:

Use in areas of adequate ventilation.

SPECIAL VENTILATION CONTROLS:

Use this material inside totally enclosed equipment, or use it with local exhaust ventilation at points where vapors can be released into the workspace air.

RESPIRATORY PROTECTION:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or the CEN European Standards (EU). Use a NIOSH/MSHA or European Standard (EN) approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

PROTECTIVE GLOVES:

Wear chemical impervious gloves at all times while working with this product. Recommended glove types include: Laminate Film, Nitrile, or Tri-polymer. Check with your company's glove supplier to ensure chemical resistance.

EYE PROTECTION:

Safety Glasses, Chemical goggles, face shield

SKIN PROTECTION:

Suitable protective clothing to prevent skin contact

OTHER EQUIPMENT:

Make safety shower, eyewash stations, and hand washing equipment available in the work area.

WORK/HYGIENE PRACTICES:

Provide good personal hygiene after handling. Avoid contact with eyes. Wash hands after handling.

Section 9: Physical and Chemical Properties

	PRODUCT CRITERIA
APPEARANCE - COLOR:	Clear
PHYSICAL STATE:	Liquid
ODOR:	None
ODOR THRESHOLD	Not Available for product
PH	6.6—7.0
MELTING POINT/FREEZING POINT:	Not Available for product
INITIAL BOILING POINT AND BOILING RANGE:	133—204 °C
FLASH POINT:	41 °C, 105.8 °F
EVAPORATION RATE:	Not Available for product



FLAMMABILITY (Solid, gas)	Not Available for product
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS	Not Measured
VAPOR PRESSURE	Not Available for product
VAPOR DENSITY (AIR = 1)	Not Available for product
RELATIVE DENSITY (@25 °C):	0.9
SOLUBILITY(IES)	Partially soluble in water
OXIDIZING PROPERTIES	Not Available for product
PARTITION COEFFICIENT: n-octanol/water	Not Available for product
AUTO IGNITION TEMPERATURE	Not Available for product
DECOMPOSITION TEMPERATURE	Not Available for product
VISCOSITY	Not Available for product

Section 10: Stability and Reactivity

Reactivity:	Not reactive.
Chemical Stability:	Stable under normal conditions.
Possibility of Hazardous Reactions:	Will not occur
Conditions to Avoid:	Acids. Strong oxidizing agents.
Incompatibility (Materials to Avoid):	None
Hazardous Decomposition Products:	None

Section 11: Toxicological Information

There is no toxicological information available for the product mixture.

GHS Required Criteria	Toxicity Criteria	Toxicity Information	Comments	Chemical Constituent
Acute Toxicity	LD50 Oral/Rat	244 mg/kg		2-Mercaptoethanol
	LC50 Inhalation/Rat	<350 ppm		2-Mercaptoethanol
	LD50 Oral/Rat	593 mg/kg		Guanidinium thiocyanate
	LD50 Dermal/Rabbit	167 mg/kg		2-Mercaptoethanol
Skin Corrosion/Irritation		No information is available.		
Serious Eye Damage / Eye Irritation		No information is available.		
Respiratory or Skin Sensitization		No information is available.		
Germ Cell Mutagenicity		No information is available.		
Carcinogenicity		Not listed	NTP	
		Not listed	IARC	
		Not listed	OSHA	
Reproductive Toxicity		No information is available.		
STOST -- Single Exposure		No information is available.		
STOST -- Repeated Exposure		No information is available.		
Aspiration Hazard		No information is available.		

STOST = Specific Target Organ Systemic Toxicity

Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

Section 12: Ecological Information

Toxicity:	EC50 (24 hour(s), Daphnia magna): 1.52 mg/l	2-Mercaptoethanol
	IC50 (72 hour(s), Algae): 12 mg/l	2-Mercaptoethanol
	LC50 -- (96 hour(s), Poecilia reticulata): 89.1 mg/l	Guanidinium thiocyanate
	EC50 (48 hour(s), Daphnia): 42.4 mg/l	Guanidinium thiocyanate
Persistence and degradability:	No information is available.	
Bioaccumulative potential	No information is available.	
Mobility in soil:	No information is available.	
PBT and vPvB assessment:	No information is available.	
Other adverse effects:	No information is available.	

Note: Not all of the ingredients have been tested for Ecotoxicity.



Section 13: Disposal Considerations

Waste from residues/unused products: Follow the waste disposal requirements of your country, state, or local authorities.

Contaminated packaging: Contaminated packaging material should be disposed of as stated above for residues and unused product.

Rinsate: Do not dispose of rinse water containing product in a storm water drainage system.

Section 14: Transport Information

DOT TRANSPORT: Not Regulated

ADR = International Carriage of Dangerous Goods by Road Not Regulated

RAIL TRANSPORT: Not Regulated

SEA TRANSPORT: IMDG Not Regulated

AIR TRANSPORT: IATA/ICAO Not Regulated

Section 15: Regulatory Information

TOXIC SUBSTANCES CONTROL ACT (TSCA) STATUS:

This product is in compliance with rules, regulations, and orders of TSCA.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA) TITLE III SECTION 313 SUPPLIER NOTIFICATION:

This regulation requires submission of annual reports of toxic chemical(s) that appear in section 313 of the Emergency Planning and Community Right To Know Act of 1986 and 40 CFR 372. This information must be included in all MSDS's that are copied and distributed for the material.

The Section 313 toxic chemicals contained in this product are: None

CALIFORNIA PROPOSITION 65:

This regulation requires a warning for California Proposition 65 chemical(s) under the statute.

The California proposition 65 chemical(s) contained in this product are: None

STATE RIGHT-TO-KNOW TOXIC SUBSTANCE OR HAZARDOUS SUBSTANCE LIST:

Florida Toxic Substance(s):	Not listed
Massachusetts's hazardous substance(s):	Not listed
Pennsylvania hazardous substance code(s):	2-Mercaptoethanol
New Jersey	Not listed
Illinois	Not listed
Michigan	Not listed
Minnesota	2-Mercaptoethanol

CANADA:

This SDS will be non-compliant 3 years after the issue date. This SDS contains all of the information required by the Controlled Products Regulations (CPR).

WHMIS-INFORMATION:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR), SOR/88-66, Current to February 20, 2012. The classes of controlled products listed in the CPR, Section 32, Part IV, have been reviewed and based on Professional Judgment this product has been determined to be WHMIS controlled. 2-Mercaptoethanol: D1B, D2B

EUROPEAN UNION:

This product has been reviewed for compliance with the following European Community Directives: REACH 1907/2006; Regulation (EC) No 1272/2008 on classification, labeling, and packaging (CLP) of substances and mixtures. None of the chemicals used in this product are on the EU's REACH SVHC (Substances of Very High Concern) chemicals list (as of June 16, 2014).

WGK: 3 (German Federal Water Management Act) (Water Hazard Class)

Switzerland: Swiss Poison class 3



Mexico: This product is dangerous according to Mexican regulations.

Section 16: Other Information

European Community Hazards Identification:

R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.
R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.
R32: Contact with acids liberates very toxic gas.
R38: Irritating to skin.
R41: Risk of serious damage to eyes.
R43: May cause sensitization by skin contact.
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S13: Keep away from food, drink and animal feeding stuffs.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39: Wear suitable protective clothing, gloves, and eye/face protection.
S45: In case of accident or if you feel unwell, seek medical advice immediately.
S46: If swallowed, seek medical advice immediately and show this container or label.
S60: This material and its container must be disposed of as hazardous material.
S61: Avoid release to the environment.

Danger Symbol(s):

Xn	Harmful
T	Toxic
N	Aquatic hazard

Initial issue date: August 23, 2013
Final revision date: February 9, 2015
Revision Number: 4
Revision explanation: Updated to current GHS requirements
Information Sources: RTECS, ECHA, REACH, OSHA 29CFR 1910.1200

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