

SAFETY DATA SHEET



Conforms to regulation (EC) no. EU 453/2010

SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name: Protein Loading Buffer 5X

Product Number: EC-887

1.2 Relevant Identified Uses of the Substance/Mixture and Uses Advised Against

Investigational research by professional users

1.3 Details of the Supplier of the Safety Data Sheet

Manufacturer

National Diagnostics
305 Patton Drive
Atlanta, GA 30036
(404) 699-2121
(800) 526-3867
info@nationaldiagnostics.com

1.4 Emergency Telephone Number

ChemTel Inc.

Contract number MIS8894340
1-800 255-3924 (United States, Canada, Puerto Rico & US Virgin Islands)
01-800-099-0731 (Mexico)
400-120-0751 (China)
000-800-100-4086 (India)
1-300-954-583 (Australia)
0-800-591-6042 (Brazil)
+1-813-255-3924 (All other regions)

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

Classification according to Regulation (EC) No. 1272/2008 [EU-GHS/CLP]

H302 - Acute Toxicity-Oral (Category 4)
H315 - Skin Corrosion/Irritation (Category 2)
H319 - Serious Eye Damage/Eye Irritation (Category 2A)
H335 - Specific Target Organ Toxicity, Single Exposure (Category 3)

2.2 Label Elements

GHS LABEL ELEMENTS AND CLASSIFICATION

GHS Label Elements



WARNING

H302 - Harmful if swallowed
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.
P301+P312 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician IF you feel unwell.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

2.3 Other Hazards

None found.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixture

Chemical Names/Description

Aqueous solution of tris base, lithium dodecyl sulfate, glycerol, dithiothreitol, and bromophenyl blue (< 0.1%)

Component List

Component	% Comp.	CAS #	EC #	1278/2008 Classification
DTT	8 - 10	3483-12-3	222-468-7	H302, H315, H319, H335
Tris-Base	10 - 20	77-86-1	201-064-4	H315, H319, H335

SECTION 4 - FIRST AID MEASURES

4.1 Description of First Aid Measures

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion

Do not induce vomiting. If swallowed and the person is conscious, immediately give large amounts of water. Get medical attention.

Skin

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes

Immediately flush eyes with plenty of water for at least fifteen minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

Inhalation

DTT:

Symptoms may include coughing, shortness of breath.

Tris-Base:

Coughing, shortness of breath.

Ingestion

DTT:

Symptoms may include nausea, vomiting, diarrhea, drunkenness, and bluish skin color.

Tris-Base:

Symptoms may include nausea, vomiting, and diarrhea. Large oral doses may cause weakness, collapse, blood clotting, and coma. The estimated lethal dose of Tris Base is 50 grams dry solid.

Skin

DTT:

Symptoms include redness, itching, and pain.

Tris-Base:

Redness, itching, and pain.

Eyes

DTT:

Symptoms include redness, and pain.

Tris-Base:

Redness, itching, and pain.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Unknown/not applicable

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use media appropriate to the primary cause of fire.

5.2 Special Hazards Arising from the Substance/Mixture

Hazardous Combustion Products

Thermal decomposition products may include toxic oxides of nitrogen, sulfur, and carbon.

Hazardous Decomposition Products

Toxic gases may be involved in a fire. Glycerin decomposes upon heating above 290C, forming corrosive gas (acrolein).

Hazardous Polymerization

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

5.3 Advice for Firefighters

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

5.4 Further Information

No data available.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions

Wear appropriate protective equipment as specified in Section 8.

6.2 Environmental Precautions

Prevent discharge into the environment. Dike spills and stop leakage where practical. Do not allow material to enter drains.

6.3 Methods and Materials for Containment and Cleaning Up

Contain and clean up spill immediately, prevent from entering floor drains. Contain liquids using absorbents. Shovel all spill materials into disposal drum. Scrub spill area with detergent, flush with copious amounts of water.

6.4 References to Other Sections

For disposal information, see Section 13. For protective clothing and equipment, see Section 8.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

7.2 Conditions for Safe Storage (including any incompatibles)

Keep frozen until ready to use. Protect from physical damage. Isolate from incompatible materials (section 10).

Incompatibles

DTT:

Strong oxidizers.

Tris-Base:

No incompatibility data found.

7.3 Specific End Uses

Investigational research by professional users

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PRECAUTIONS

8.1 Control Parameters

Component: DTT

ACGIH Threshold Limit Value (TLV): None established

OSHA Permissible Exposure Limit (PEL): None established

Component: Tris-Base

ACGIH Threshold Limit Value (TLV): none established

OSHA Permissible Exposure Limit (PEL): none established

8.2 Exposure Controls

Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

Respiratory Protection

If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus.

Eye Protection

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Skin Protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical & Chemical Properties

a. Appearance	Clear, blue solution	b. Odor	None
c. Odor Threshold	N.A.	d. pH	6.8
e. Melting/Freezing Point (°C)	0	f. Boiling point (°C)	104.4
g. Flash Point (°C)	N.A.	h. Evaporation Rate	Water
i. Flammability	N.A.	j. Upper/Lower Flammability or Explosive Limits	N.A.
k. Vapor Pressure	Water	l. Vapor Density (Air = 1)	Water
m. Relative Density	No information.	n. Water Solubility	Soluble
o. Partition Coefficient n-octanol/water	Mixture	p. Autoignition Temperature (°C)	N.A.
q. Decomposition Temperature (°C)	N.A.	r. Viscosity	No data available.

SECTION 10 - STABILITY AND REACTIVITY**10.1 Reactivity**

Contains reducing agents

10.2 Chemical Stability

Stable under ordinary conditions of use and storage. (Keep frozen until ready to use).

10.3 Possibility of Hazardous Reactions

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

10.4 Conditions to Avoid

Heat, incompatibles.

10.5 Incompatible Materials**DTT:**

Strong oxidizers.

Tris-Base:

No incompatibility data found.

10.6 Hazardous Decomposition Products

Toxic gases may be involved in a fire. Glycerin decomposes upon heating above 290C, forming corrosive gas (acrolein).

SECTION 11 - TOXICOLOGICAL INFORMATION**Product LD50 Values****Oral Rat LD50 (mg/kg)**

12200

Dermal Rabbit LD50 (mg/kg)

7500

Component Cancer List Status

	NTP Carcinogen		IARC Category
	Known	Anticipated	
DTT	No	No	None
Tris-Base	No	No	None

Potential Health Effects**Inhalation****DTT**

Causes irritation to the respiratory tract. Can cause nausea, headache and vomiting. Exposure may result in blood in urine, difficulty breathing, irregular heartbeat, anemia, weakness, drunkenness, bluish skin color, lung congestion, kidney damage, paralysis, convulsions unconsciousness and coma. Thiols may cause central nervous system depression (CNS).

Tris-Base

Causes irritation to the respiratory tract.

Ingestion**DTT**

Exposure can cause headache, weakness, restlessness, paralysis and coma.

Tris-Base

Causes irritation and reddening to the mucous membranes of the mouth, esophagus, and gastrointestinal tract.

Skin**DTT**

Exposure may cause irritation and possible burns to the skin. May cause dermatitis.

Tris-Base

Causes irritation to the skin.

Eyes**DTT**

Contact with the eye may cause severe irritation, and possible eye burns.

Tris-Base

Causes irritation to the eyes.

Carcinogenicity

DTT
No information is available.

Tris-Base
Not listed as a carcinogen by NTP or IARC.

Mutagenicity

DTT
No information is available.

Tris-Base
No information found.

Reproductive Toxicity

DTT
No information is available.

Tris-Base
No information found.

Teratogenic Effects

DTT
No information is available.

Tris-Base
No information found.

Routes of Entry

DTT
Contact with this material by any route of exposure (eye/skin, inhalation or ingestion) may cause serious adverse health consequences.

Tris-Base
Ingestion.

Target Organ Statement

DTT
No information is available.

Tris-Base
No information available.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

COMPONENT: DTT

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

COMPONENT: Tris-Base

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	LC50 460mg/l (Golden ide)	EC50: 59.8 mg/L (Daphnia)	EC50: 473mg/l @ 48 hrs	CE50>1000mg/L (3hrs)

	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

12.2 Persistence and Degradability

DTT
No data

Tris-Base
Readily Biodegradable (>97% degradation at 28 days)

12.3 Bioaccumulative Potential

DTT
No data

Tris-Base

No data

12.4 Mobility in Soil

DTT
No data

Tris-Base
Log Koc 1.57-1.85

12.5 Results of PBT and vPvB Assessment

DTT
No data

Tris-Base
Not a PBT or vPvB

12.6 Other Adverse Effects

DTT
None

Tris-Base
None

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Offer surplus or non-recyclable product to licensed disposal company. Disposal is subject to user compliance with applicable law and product characteristics at time of disposal. Dispose of packaging as product.

SECTION 14 - TRANSPORT INFORMATION

	ADR/RID	IATA	IMO	DOT
14.1 UN Number	N.A.	N.A.	N.A.	N.A.
14.2 Shipping Name	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.3 Hazard Class	N.A.	N.A.	N.A.	N.A.
14.4 Packing Group	N.A.	N.A.	N.A.	N.A.
14.5 Environmental Hazards	N.A.	N.A.	N.A.	N.A.
14.6 Special Precautions	N.A.	N.A.	N.A.	N.A.

SECTION 15 - REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance/Mixture

United States

TSCA Regulatory Statement

All intentional ingredients are listed on the TSCA Inventory.

SARA 311/312 Hazard Categories

Component	Fire	Pressure	Reactivity	Acute	Chronic
DTT	No	No	No	Yes	No
Tris-Base	No	No	No	Yes	No

Europe

EEC Regulatory

All intentional ingredients are listed on the European EINECS Inventory.

SECTION 16 - OTHER INFORMATION

Revisional Updates

4/26/2019 - Updated Section 1.4
5/29/2015 - Updated Sections 2.1 and 3.2
7/11/2013- Released Version 1.0

NFPA Codes

Health N.D. Flammability N.D. Reactivity N.D.

Dangers

DTT
H302 - Harmful if swallowed
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.

Tris-Base

H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.

MANUFACTURER DISCLAIMER: The information given herein is offered in good faith as accurate, but without guarantee. Conditions of the use and suitability of the product for particular uses are beyond our control. All risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.