

MATERIAL SAFETY DATA SHEET

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

1. Chemical Product and Company Identification

Product Name: TE Buffer 100X

Product Number: EC-862

Chemical Names/

Description:

Solution of tris base and EDTA.

2. Composition/Information on Ingredients

Component	% Comp.	CAS #	EINECS #	TLV (Units)
Ethylenediaminetetraacetic acid, disodium salt dihydrate	4.7	6381-92-6	205-358-3	None Established
Water	80	7732-18-5	231-791-2	
TRIS HYDROCHLORIDE	15.3	1185-53-1	214-684-5	

EEC LABEL SYMBOL AND CLASSIFICATION



R: 36/37/38

Irritating to eyes, respiratory system and skin.

S: 22-26

Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

3. Hazards Identification

Appearance and Odor

Clear odorless liquid.

EMERGENCY OVERVIEW - IMMEDIATE HAZARD

Ethylenediaminetetraacetic acid, disodium salt dihydrate

CAUTION! MAY BE HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

Water

No information found.

TRIS HYDROCHLORIDE

WARNING! HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

EMERGENCY OVERVIEW - CHRONIC HAZARD WARNING:

Ethylenediaminetetraacetic acid, disodium salt dihydrate

No information found.

Water

No information found.

TRIS HYDROCHLORIDE

No information found.

Potential Health Effects

Inhalation

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

Causes irritation of the mucous membrane and upper respiratory tract.

Water:

No information found.

TRIS HYDROCHLORIDE:

May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.

Ingestion

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Exposure may cause kidney injury, muscle cramps, bone-marrow depression, and a generalized allergic reaction.

Water:

No information found.

TRIS HYDROCHLORIDE:

May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns. The toxicological properties of this substance have not been fully investigated.

Skin

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

Causes skin irritation. Causes redness and pain.

Water:

No information found.

TRIS HYDROCHLORIDE:

Causes skin irritation. Causes redness and pain.

Eyes

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

Causes eye irritation. Causes redness and pain.

Water:

No information found.

TRIS HYDROCHLORIDE:

Causes eye irritation. Causes redness and pain.

Signs and Symptoms of Overexposure

Inhalation

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

Symptoms may include coughing and shortness of breath.

Water:

No information found.

TRIS HYDROCHLORIDE:

Symptoms may include coughing and shortness of breath.

Ingestion

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

Symptoms may include irritation and reddening to the mucous membranes of the mouth, esophagus, and gastrointestinal tract.

Water:

No information found.

TRIS HYDROCHLORIDE:

Symptoms may include irritation and reddening to the mucous membranes of the mouth, esophagus, and gastrointestinal tract.

Skin

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

Symptoms may include irritation with redness and pain.

Water:

No information found.

TRIS HYDROCHLORIDE:

Symptoms may include irritation with redness and pain.

Eyes

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

Symptoms may include irritation, redness, pain, and corneal damage.

Water:

No information found.

TRIS HYDROCHLORIDE:

Symptoms may include irritation, redness, pain, and corneal damage.

Carcinogenicity

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

Not listed by NTP or IARC as a known or anticipated carcinogen.

Water:

No information available.

TRIS HYDROCHLORIDE:

Not listed by OSHA, ACGIH, NIOSH, NTP or IARC as a known or anticipated carcinogen.

Mutagenicity

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

Cytogenetic Analysis: intraperitoneal - mouse 50mmol/L. DNA Inhibition: hamster fibroblast 500ug/L, rabbit kidney 250 umol/L.

Water:

No information available.

TRIS HYDROCHLORIDE:

No information available.

Reproductive Toxicity

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

Fertility: Post-implantation mortality, oral - rat TDLo = 7632 mg/kg.

Water:

No information available.

TRIS HYDROCHLORIDE:

No information available.

Teratogenic Effects

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

Embryo or Fetus: Stunted fetus, oral - rat TDLo = 7632 mg/kg. Specific developmental abnormalities: cardiovascular, craniofacial, musculoskeletal, respiratory, and urogenital, oral - rat TDLo = 7632 mg/kg.

Water:

No information available.

TRIS HYDROCHLORIDE:

No information available.

Routes of Entry

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

Inhalation, ingestion or skin contact.

Water:

No information available

TRIS HYDROCHLORIDE:

Inhalation, ingestion or skin contact.

Target Organ Statement

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

No information available

Water:

No information available

TRIS HYDROCHLORIDE:

No information available

4. First Aid Measures

Inhalation

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

Ingestion

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

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.

5. Fire Fighting Measures

Flash Point	N.A.	Flammable Limits	N.A.
Flash Point Method	N.A.	Autoignition temperature	N.A.

Extinguishing media

Water spray, dry chemical, alcohol-resistant foam, or carbon dioxide.

Protective Equipment

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.

Hazardous Combustion Products

N.A.

Unusual Fire and Explosion Hazards

Not considered an explosion hazard.

NFPA Codes: Health 1 Flammability 0 Reactivity 0

6. Accidental Release Measures

Steps to be taken in case material is released or spilled

Use a vacuum cleaner equipped with charcoal exhaust scrubber or hose from mechanical exhaust ventilation system to vacuum spills. If this is not possible, sweep up spills and place in a covered waste disposal container. Flush area with water.

Waste Disposal Method

Disposal must be made in accordance with applicable federal, state, and local regulations.

Personal Precautions

Wear appropriate protective equipment as specified in section 8.

7. Handling and Storage

Handling

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

Storage

Keep in a tightly closed container, stored in a cooled, dry, ventilated area. Protect from physical damage. Isolate from incompatible materials (section 10).

Storage Temperature

20C

Disposal

Observe all national, state, and local regulations regarding disposal.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits

Component: Ethylenediaminetetraacetic acid, disodium salt dihydrate

ACGIH Threshold Limit Value (TLV): None Established

OSHA Permissible Exposure Limit (PEL): None Established

Component: Water

ACGIH Threshold Limit Value (TLV):

OSHA Permissible Exposure Limit (PEL):

Component: TRIS HYDROCHLORIDE

ACGIH Threshold Limit Value (TLV):

OSHA Permissible Exposure Limit (PEL):

Engineering Controls

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

Respiratory Protection

For conditions of use where exposure to the dust or mist is apparent, a full-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

Eye Protection

Safety glasses.

Skin Protection

Wear protective gloves and clean body covering clothing.

Other Control Measures

9. Physical Properties

Boiling point as water

Evaporation Rate water

Melting point ~ 6 C

Solubility in water miscible

Vapor pressure (mmHg) water

pH 9

Vapor density (Air = 1) Air

Specific gravity (H2O = 1) 1.12

% volatile by volume 80

10. Stability and Reactivity

Stability

Stable at room temperature in closed containers under normal storage and handling conditions. Decarboxylates above 150C.

Conditions to Avoid

Incompatible materials, dust generation, excess heat.

Hazardous Decomposition Products

Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization

Will not occur

Incompatibles

Ethylenediaminetetraacetic acid, disodium salt dihydrate:

Strong oxidizing agents, strong bases, aluminum, copper, copper alloys, nickel.

Water:

No incompatibility data found.

TRIS HYDROCHLORIDE:

Bases, oxidizing agents, acids, aldehydes, copper, brass, and aluminum.

11. Toxicological Information

Product LD50 Values

TE Buffer 100X	Oral Rat LD50 (mg/kg):	12760
TE Buffer 100X	Dermal Rabbit LD50 (mg/kg):	N.D.

Component Cancer List Status

	NTP Carcinogen		IARC Category
	Known	Anticipated	
Ethylenediaminetetraacetic acid, disodium salt dihydrate	No	No	None
Water	No	No	None
TRIS HYDROCHLORIDE	No	No	None

12. Ecological Information

Ethylenediaminetetraacetic acid, disodium salt dihydrate

EDTA is expected to complex with trace metals and alkaline earth metals present in the soil, thereby causing an increase in the total solubility of the metals. EDTA may eventually predominate as the solubility of the metals. EDTA may eventually predominate as the Fe(III) chelate in acidic soils and as the Ca chelate in alkaline soils. Biodegradation of EDTA in aerobic soils is the dominant.

Water

Not applicable.

TRIS HYDROCHLORIDE

No information found.

13. Disposal Considerations

Observe all national, state, and local regulations regarding disposal.

14. Transport Information

D.O.T.

Proper Shipping Name: Not Regulated.

Hazard Class: N.A.

UN Number: N.A.

Packing Group: N.A.

I.A.T.A.

Proper Shipping Name: Not Regulated.

Hazard Class: N.A.

UN Number: N.A.

Packing Group: N.A.

I.M.O.

Proper Shipping Name: Not Regulated.

Hazard Class: N.A.

UN Number: N.A.

Packing Group: N.A.

15. Regulatory Information

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
Ethylenediaminetetraacetic acid, disodium salt dihydrate	No	No	No	Yes	No
Water	No	No	No	No	No
TRIS HYDROCHLORIDE	No	No	No	Yes	No

Europe

EEC Regulatory

All intentional ingredients are listed on the European EINECS Inventory.

EEC LABEL SYMBOL AND CLASSIFICATION



R: 36/37/38

Irritating to eyes, respiratory system and skin.

S: 22-26

Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

16. Other Information

NFPA Codes: Health 1 Flammability 0 Reactivity 0

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.

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