Material Safety Data Sheet

Tris Borate EDTA Buffer, 10X

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Biozoa Biological Supply Company

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Section 1 – Product Description

Product Name: Tris Borate EDTA Buffer, 10X
Recommended Use: Science education applications
Synonyms: 3-Aminophthalhydrazide, o-Aminophthaloyl hydrazide, o-Aminophthalyl hydrazide, 3-Aminophthalic hydrazide, 5-Amino-2,3-dihydro-1,4-phthalazinedione
Distributor: Biozoa Biological Supply Company. Seoul, Geumcheon-gu, Doosan-ro 70, B-1008(Hyundai-Center)
Chemical Information: 02-862-2372 (9am-5pm (ET) M-F)

Section 2 – Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

DANGER

May damage fertility or the unborn child.

GHS Classification:
Reproductive Toxicity Category 1B

Other Safety Precautions:	IF exposed or concerned: Get medical advice/attention.
Acute Toxicity Dermal Contains	14.6 % of the mixture consists of ingredient(s) of unknown toxicity
Acute Toxicity Inhalation Vapor Contains	14.6 % of the mixture consists of ingredient(s) of unknown toxicity
Acute Toxicity Inhalation Dust/Mist Contains	14.6 % of the mixture consists of ingredient(s) of unknown toxicity

Section 3 – Composition / Information on Ingredients

Chemical Name	CAS #	%
Water	7732-18-5	85.4
Tris(Hydroxymethyl) Aminomethane	77-86-1	9.2
Boric Acid	10043-35-3	4.7
Ethylenediaminetetraacetic Acid, Disodium Salt, Dihydrate (EDTA Sodium)	6381-92-6	0.6
Sodium Hydroxide	1310-73-2	0.1

Section 4 – First Aid Measures

Emergency and First Aid Procedures:

Inhalation:	In case of accident by inhalation: remove casualty to fresh air and keep at rest.
Eyes:	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact:	After contact with skin, wash immediately with plenty of water.advice/attention. Take off contaminated clothing and wash before reuse.
Ingestion:	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Section 5 – Firefighting Procedures

Extinguishing Media:	Use dry chemical, CO2 or appropriate foam.
Fire Fighting Methods and Protection:	Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.
Fire and/or Explosion Hazards:	N/A
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide, Nitrogen oxides

Section 6 – Spill or Leak Procedures

Steps to Take in Case Material Is Released or Spilled:

No adverse health affects expected from the clean-up of spilled material. Follow personal protective equipment recommendations found in Section 8 of this (M)SDS.
Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this SDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill. Avoid the generation of dusts during clean-up. Avoid creating and inhaling dust.
Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation. Vacuum or sweep up material and place in a disposal container

Section 7 – Handling and Storage

Handling:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Avoid contact with skin and eyes.
Storage:	Store locked up. Keep container tightly closed in a cool, well-ventilated place. Suitable for any general chemical storage.
Storage Code:	Green - general chemical storage

Section 8 – Protection Information

	ACGIH		OSHA PEL	
Chemical Name	**(TWA)**	**(STEL)**	**(TWA)**	**(STEL)**
Boric Acid	2 mg/m3 TWA (inhalable fraction, listed under Borate compounds, inorganic)	6 mg/m3 STEL (inhalable fraction, listed under Borate compounds, inorganic)	N/A	N/A
EDTA, Disodium Salt, Dihydrate	N/A	N/A	N/A	N/A
Sodium Hydroxide	N/A	N/A		N/A

Control Parameters

Engineering Measures:	Local exhaust ventilation, process enclosures, or other engineering controls are necessary when handling or using this product to avoid overexposure. Local exhaust ventilation may be necessary to control any air contaminants to within the TLV during the use of this product
Personal Protective Equipment (PPE):	Lab coat, apron, eye wash, safety shower.
Respiratory Protection:	No respiratory protection required under normal conditions of use. Wear a NIOSH approved respirator if any exposure is possible.
Eye Protection:	Wear chemical splash goggles when handling this product. Have an eye wash station available.
Skin Protection:	Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.
Gloves:	Nitrile

Section 9- Physical Data

Formula: See Section 3
Molecular Weight: N/A
Appearance: Liquid
Odor: No data available
Odor Threshold: No data available
pH: No data available
Melting Point: No data available
Boiling Point: 100 C
Flash Point: No data available
Flammable Limits in Air: N/A

Vapor Pressure: N/A
Evaporation Rate (BuAc=1): N/A
Vapor Density (Air=1): N/A
Specific Gravity: approx. 1.17
Solubility in Water: Soluble
Log Pow (calculated): No data available
Autoignition Temperature: No data available
Decomposition Temperature: No data available
Viscosity: No data available
Percent Volatile by Volume: N/A

Section 10- Reactivity Data

Reactivity: No data available
Chemical Stability: Stable under normal conditions
Conditions to Avoid: Exposure to moisture
Incompatible Materials: Water-reactive materials, Acetic anhydride, Alkali Carbonates, Hydroxides, Alkali and Alkaline Metals
Hazardous Decomposition Products: Nitrogen oxides, Carbon dioxide, Carbon monoxide
Hazardous Polymerization: Will not occur

Section 11 – Toxicity Data

Symptoms (Acute): Ingestion, Skin contact.
Symptoms (Acute): N/A
Delayed Effects: No data available

Acute Toxicity:

Chemical Name	CAS Number	Oral LD50	Dermal LD50	Inhalation LC50
Water	7732-18-5	Oral LD50 Rat 90000 mg/kg		
Boric Acid	10043-35-3	Oral LD50 Rat 2660 mg/kg		
EDTA, Disodium Salt, Dihydrate	6381-92-6	Oral LD50 Rat 2000 mg/kg		

Carcinogenicity:

Chemical Name	CAS Number	IARC	NTP	OSHA
Boric Acid	10043-35-3	Listed	Not listed	Not listed
EDTA, Disodium Salt, Dihydrate	6381-92-6	Not listed	Not listed	Not listed
Sodium Hydroxide	1310-73-2	Not listed	Not listed	Not listed

Chronic Effects:
Mutagenicity: No evidence of a mutagenic effect.
Teratogenicity: Evidence of a teratogenic effect (birth defect).
Sensitization: No evidence of a sensitization effect.
Reproductive: Evidence of negative reproductive effects.
Target Organ Effects:
Acute: See Section 2
Chronic: Not listed as a carcinogen by IARC, NTP or OSHA., Mutation data cited., Reproductive data cited.

Section 12- Ecological Date

Overview: This material is not expected to be harmful to the ecology.
Mobility: No data
Persistence: Dissolved into water, Photodegradation
Bioaccumulation: No data
Degradability: No data
Other Adverse Effects: No data

Chemical Name	CAS Number	Eco Toxicity
Water	7732-18-5	No data available
Boric Acid	10043-35-3	48 HR EC50 DAPHNIA MAGNA 115 - 153 MG/L
EDTA, Disodium Salt, Dihydrate	6381-92-6	
Sodium Hydroxide	1310-73-2	Aquatic LC50 (96h) Rainbow Trout 45.4 MG/L

Section 13 – Disposal Information

Disposal Methods: Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.

Waste Disposal Code(s): Not Determined

Section 14 – Transport Information

Ground - DOT Proper Shipping Name:
UN1294, Toluene, Hazard Class 3, Packing Group II

Air - IATA Proper Shipping Name:
Not regulated for air transport by IATA.

Section 15 – Regulatory Information

TSCA Status: All components in this product are on the TSCA Inventory.

Chemical Name	CAS Number	§ 313 Name	§ 304 RQ	CERCLA RQ	§ 302 TPQ	CAA 112(2) TQ
Boric Acid	10043-35-3	No	No	No	No	No
EDTA, Disodium Salt, Dihydrate	6381-92-6	No	No	No	No	No
Sodium Hydroxide	1310-73-2	No	1000 lb RQ	1000lb (454kg) final RQ	No	No

Section 16 – Additional Information

The information provided in this Material Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Biozoa Biological Supply makes representation or guarantee as to the suitability of this information to a particular application of the substance covered in the Material Safety Data Sheet. Any employer must carefully assess the applicability of any information contained herein in regards to the particular use to which the employer puts the material.

Glossary

ACGIH	American Conference of Governmental Industrial Hygienists
CAS Number	Chemical Services Abstract Number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOT	U.S. Department of Transportation
IARC	International Agency of Research on Cancer
N/A	Not Available
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
ppm	Parts per million
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act