

SAFETY DATA SHEET

Creation Date 16-Nov-2010

Revision Date 27-Sep-2022

Revision Number 8

1. Identification

Product Name

Tris-Borate-EDTA, 10X Solution (Electrophoresis)

Cat No. :

BP1333-1; BP1333-1LC; BP1333-4; BP1333-20

CAS No **Synonyms**

Tromethane; 2-Amino-2-(hydroxymethyl)-1,3-propanediol; TRIS; Tris buffer; Tromethamine **Recommended Use** Laboratory chemicals.

Food, drug, pesticide or biocidal product use.

610769-35-2

Details of the supplier of the safety data sheet

Company

Fisher Scientific Company One Reagent Lane Fair Lawn, NJ 07410 Tel: (201) 796-7100

Uses advised against

Emergency Telephone Number

CHEMTREC®, Inside the USA: 800-424-9300 CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Reproductive Toxicity

Category 1B

Label Elements

Signal Word Danger

Hazard Statements May damage fertility. May damage the unborn child



Precautionary Statements Prevention

Obtain special instructions before use Do not handle until all safety precautions have been read and understood Use personal protective equipment as required **Response** IF exposed or concerned: Get medical attention/advice **Storage** Store locked up **Disposal** Dispose of contents/container to an approved waste disposal plant <u>Hazards not otherwise classified (HNOC)</u> None identified

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Water	7732-18-5	80-85
Tris (hydroxymethyl) aminomethane	77-86-1	10-11
Boric acid (H3BO3)	10043-35-3	5-5.5
Ethylenediamine tetraacetic acid (EDTA)	60-00-4	0.6

	4. First-aid measures
General Advice	If symptoms persist, call a physician.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
Ingestion	Clean mouth with water and drink afterwards plenty of water.
Most important symptoms and	None reasonably foreseeable.
effects Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical, CO $_2$, water spray or alcohol-resistant foam.
Unsuitable Extinguishing Media	No information available

Flash Point Method -	No information available No information available
Autoignition Temperature Explosion Limits	No information available
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

Hazardous Combustion Products

None known.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	0	0	N/A
	lease measures		
Personal Precautions	Use personal protective eq	uipment as required. Ensure a	dequate ventilation.
Environmental Precautions	Should not be released into	the environment.	

Methods for Containment and Clean Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Up

	7. Handling and storage
Handling	Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid ingestion and inhalation. Do not get in eyes, on skin, or on clothing.
Storage.	Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. None known.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Boric acid (H3BO3)	TWA: 2 mg/m ³			TWA: 2 mg/m ³
	STEL: 6 mg/m ³			STEL: 6 mg/m ³

<u>Legend</u>

ACGIH - American Conference of Governmental Industrial Hygienists

Engineering Measures	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
Personal Protective Equipment	
Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Tight sealing safety goggles. Face protection shield.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.

EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Physical State Liquid Appearance Colorless Odor Odorless Odor Odorless Odor No fata available Billing Point/Range 219 °C / 426. °F Flash Point No information available Evaporation Rate No information available Pammability (solid,gas) No data available Partition coefficient; n-octanol/water No information available Avalor filterent No information available Partition coefficient; n-octanol/water No information available Viscosity No: Information available Viscosity No information available Reactive Hazard None known, based on information available Stability Stable under normal conditions. Coorditions to Avoid Excess heat. Incompatible products. Incompatible Materials None known Hazardous Decomposition Products None under normal use conditions Hazardous Polymeriza	EN 149. Use a NIOSH/MSHA or European Standard Pt 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Physical State Liquid Appearance Colorless Odor Odorless Odor Threshold No information available Belling Point/Range 219 °C / 426.2 °F Flash Point No information available Evaporation Rate No information available Flash Point No data available Upper No data available Lower No data available Upper No data available Evaporation Rate No information available Pammability (solid,gas) Not applicable Flash Point No data available Specific Gravity 1.02-1.07 Solubility miscible Partition coefficient; n-octanol/water No information available Autoignition Temperature No information available Specific Gravity 1.02-1.07 Solubility miscible Reactive Hazard None known, based on information availabl						
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ncompatible Materials None known Hazardous Decomposition Products None under normal use conditions Hazardous Polymerization Hazardous polymerization does not occur.	ncompatible MaterialsNone knownHazardous Decomposition Products None under normal use conditionsHazardous PolymerizationHazardous polymerization does not occur.Hazardous ReactionsNone under normal processing.	Stability	Stable under normal conditions.				
Hazardous Decomposition Products None under normal use conditions Hazardous Polymerization Hazardous polymerization does not occur.	Hazardous Decomposition Products None under normal use conditions Hazardous Polymerization Hazardous polymerization does not occur. Hazardous Reactions None under normal processing.	Conditions to Avoid	Excess heat. Incompatible products.				
Hazardous Polymerization Hazardous polymerization does not occur.	Hazardous Polymerization Hazardous polymerization does not occur. Hazardous Reactions None under normal processing.	ncompatible Materials	None known				
	Hazardous Reactions None under normal processing.	lazardous Decomposition Produc	ts None under normal use conditions				
Hazardous Reactions None under normal processing.		lazardous Polymerization	Hazardous polymerization does not occur.				
	11 Toxicological information	Hazardous Reactions	None under normal processing				

Acute Toxicity

Product Information Oral LD50 Dermal LD50 Vapor LC50 Component Information

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg. Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg. Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	-	-
Tris (hydroxymethyl) aminomethane	LD50 = 5900 mg/kg(Rat)	LD50 > 5000 mg/kg (Rat)	Not listed
Boric acid (H3BO3)	2660 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	Not listed

		4500		Not listed	1			
Ethylenediamine tetra (EDTA)	acetic acid	4500 mg/kg (Rat) >2000 mg/kg(Rat)		1 1	1 mg/l (rat)			
Toxicologically Syn	eraistic	No information ava	ilable					
Products	giono							
Delayed and immed	iate effects as	well as chronic effe	cts from short ar	d long-term expo	sure			
Irritation		No information ava	ilable					
Sensitization		No information ava	liable					
Carcinogenicity		The table below inc	dicates whether e	ach agency has list	ed any ingredient	as a carcinogen.		
Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico		
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed		
Tris (hydroxymethyl) aminomethane	77-86-1	Not listed	Not listed	Not listed	Not listed	Not listed		
Boric acid (H3BO3)	10043-35-3	Not listed	Not listed	Not listed	Not listed	Not listed		
Ethylenediamine tetraacetic acid (EDTA)	60-00-4	Not listed	Not listed Not listed Not listed Not listed Not listed					
Mutagenic Effects		No information ava	ilable					
Reproductive Effect	Reproductive Effects No information available.							
Developmental Effe	cts	No information available.						
Teratogenicity		No information available.						
STOT - single expos STOT - repeated exp		None known None known						
Aspiration hazard		No information available						
Symptoms / effects delayed	,both acute an	nd No information available						
Endocrine Disruptor	Endocrine Disruptor Information No information available							
Other Adverse Effect	Other Adverse Effects The toxicological properties have not been fully investigated.							

12. Ecological information

Ecotoxicity Do not empty into drains. .

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Boric acid (H3BO3)	-	Gambusia affinis: LC50: 5600 mg/L/96h	-	EC50: 115 - 153 mg/L, 48h (Daphnia magna)
Ethylenediamine tetraacetic acid (EDTA)		LC50: 34 - 62 mg/L, 96h static (Lepomis macrochirus) LC50: 44.2 - 76.5 mg/L, 96h static (Pimephales promelas)		EC50: = 113 mg/L, 48h Static (Daphnia magna)

Persistence and Degradability Miscible with water Persistence is unlikely based on information available.

Bioaccumulation/Accumulation

No information available.

Mobility

Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Boric acid (H3BO3)	-0.757

	13. Disposal considerations						
Waste Disposal Methods	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.						
	14. Transport information						
DOT	Not regulated						
TDG Not regulated							
<u>TDG</u> IATA	Not regulated						
IMDG/IMO	Not regulated						

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Water	7732-18-5	Х	ACTIVE	-
Tris (hydroxymethyl) aminomethane	77-86-1	Х	ACTIVE	-
Boric acid (H3BO3)	10043-35-3	Х	ACTIVE	-
Ethylenediamine tetraacetic acid (EDTA)	60-00-4	Х	ACTIVE	-

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed '-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Not applicable Substances & Mixtures, Under TSCA Section 6(h) (PBT)

TSCA 12(b) - Notices of Export

Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Water	7732-18-5	Х	-	231-791-2	Х	Х		Х	Х	KE-35400
Tris (hydroxymethyl) aminomethane	77-86-1	Х	-	201-064-4	Х	Х	Х	Х	Х	KE-01403
Boric acid (H3BO3)	10043-35-3	Х	-	233-139-2	Х	Х	Х	Х	Х	KE-03499
Ethylenediamine tetraacetic acid (EDTA)	60-00-4	Х	-	200-449-4	Х	Х	Х	Х	Х	KE-13648

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313

Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Ethylenediamine tetraacetic acid (EDTA)	Х	5000 lb	-	-

Clean Air Act	Not applicable
OSHA - Occupational Safety and Health Administration	Not applicable

CERCLA

Not applicable

Component	Hazardous Substances RQs	CERCLA EHS RQs	
Ethylenediamine tetraacetic acid (EDTA)	5000 lb	-	

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Water	-	-	Х	-	-
Boric acid (H3BO3)	-	Х	-	Х	-
Ethylenediamine	Х	Х	Х	-	-
tetraacetic acid (EDTA)					

U.S. Department of Transportation

Reportable Quantity (RQ):	Y
DOT Marine Pollutant	Ν
DOT Severe Marine Pollutant	Ν

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade

No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Water	7732-18-5	-	-	-
Tris (hydroxymethyl) aminomethane	77-86-1	-	-	-
Boric acid (H3BO3)	10043-35-3	-	Use restricted. See item 30. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	SVHC Candidate list - 233-139-2 - Toxic for reproduction, Article 57c
Ethylenediamine tetraacetic acid (EDTA)	60-00-4	-	Use restricted. See item 75. (see link for restriction details)	-

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

https://echa.europa.eu/authorisation-list

https://echa.europa.eu/substances-restricted-under-reach

https://echa.europa.eu/candidate-list-table

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Water	7732-18-5	Listed	Not applicable	Not applicable	Not applicable
Tris (hydroxymethyl) aminomethane	77-86-1	Listed	Not applicable	Not applicable	Not applicable
Boric acid (H3BO3)	10043-35-3	Listed	Not applicable	Not applicable	Not applicable
Ethylenediamine tetraacetic acid (EDTA)	60-00-4	Listed	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Water	7732-18-5	Not applicable	Not applicable	Not applicable	Not applicable
Tris (hydroxymethyl) aminomethane	77-86-1	Not applicable	Not applicable	Not applicable	Not applicable
Boric acid (H3BO3)	10043-35-3	Not applicable	Not applicable	Not applicable	Not applicable
Ethylenediamine tetraacetic acid (EDTA)	60-00-4	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

Prepared By

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS