SAFETY DATA SHEET according to the OSHA Hazard Communication Standard

Version 6.9
Revision Date 07/30/2026
Print Date 07/31/2026

SECTION 1. IDENTIFICATION

1.1 Product identifiers

Product name : Tris-Borate-EDTA buffer, 10X concentrate

Product Number : SRE0062
Brand : Sigma

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

Restrictions on use : Not Available

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
SPRUCE ST 3050
63103 St. Louis

Telephone :(314) 771-5765
Telefax: (800) 325-5052

1.4 Emergency telephone number

Emergency Phone # : 800 424 9300 (CHEMTREC) 24/7
+1 703 527 3887 (CHEMTREC) 24/7

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards for the product as supplied

Reproductive toxicity : Category 1B

Specific target organ toxicity - repeated exposure (Inhalation) : Category 2 (Respiratory Tract)

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Other hazards

None known.

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H360 May damage fertility or the unborn child.
H373 May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

Precautionary statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe mist or vapours.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

CAS-No. : Not Assigned

Components

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
Edetate disodium dihydrate	6381-92-6*	>= 5 - < 10	-
boric acid	10043-35-3*	>= 5 - < 10	-

* Indicates that the identifier is a CAS No.

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Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice	:	Show this safety data sheet to the doctor in attendance.
If inhaled	:	After inhalation: fresh air. Call in physician.
In case of skin contact	:	In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.
In case of eye contact	:	After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.
If swallowed	:	After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.
Most important symptoms and effects, both acute and delayed	:	The most important known symptoms and effects are described in the labelling (see section 2 GHS label elements) and/or in section 11
Protection of first-aiders	:	For personal protection see section 8.
Notes to physician	:	No data available

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	For this substance/mixture no limitations of extinguishing agents are given.
Specific hazards during fire fighting	:	Not combustible. Ambient fire may liberate hazardous vapours.
Hazardous combustion products	:	Carbon oxides

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Nitrogen oxides (NOx)

Borane/boron oxides

Sodium oxides

Specific extinguishing methods	:	No data available
Further information	:	Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for fire-fighters	:	Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: Wear appropriate personal protective equipment, as indicated in Section 8.
Environmental precautions	:	Do not let product enter drains.
Methods and materials for containment and cleaning up	:	Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

SECTION 7. HANDLING AND STORAGE

For precautions see section 2 GHS label elements

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Advice on safe handling	:	Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.
Further information on storage conditions	:	Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.
Storage class	:	6.1D, Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects
Recommended storage temperature	:	Recommended storage temperature see product label.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
boric acid	10043-35-3	TWA (Inhalable particulate matter)	2 mg/m3 (Borate)	ACGIH
		STEL (Inhalable particulate matter)	6 mg/m3 (Borate)	ACGIH

Engineering measures : No data available

Personal protective equipment

Respiratory protection	:	required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.
Recommended Filter type:	:	Filter type ABEK

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to

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the instructions of the producer. These measures have to be properly documented.

Hand protection

Remarks	:	required
Eye protection	:	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses
Skin and body protection	:	protective clothing
Hygiene measures	:	Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	No data available
Odour	:	No data available
Odour Threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Flammability (liquids)	:	The product is not flammable.
Burning rate	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available

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Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	No data available
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Flow time	:	No data available
Explosive properties	:	Not classified as explosive.
Oxidizing properties	:	none
Particle characteristics Particle size	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No data available
Chemical stability	:	The product is chemically stable under standard ambient conditions (room temperature) .
Possibility of hazardous reactions	:	Violent reactions possible with: The generally known reaction partners of water.
Conditions to avoid	:	no information available
Incompatible materials	:	Potassium Acid anhydrides
Hazardous decomposition products	:	For Hazardous combustion products in the event of fire: see section 5

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SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Mixture

Acute toxicity
Oral: No data available
Acute toxicity estimate Inhalation - 4 h - 21.62 mg/l - dust/mist(Calculation method)

Acute toxicity estimate Dermal - > 5,000 mg/kg
(Calculation method)

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

11.2 Additional Information

Toxicity reported for borates in humans: ingestion or absorption may cause nausea, vomiting, diarrhea, abdominal cramps, anderythematous lesions on the skin and mucous membranes. Other symptoms include: circulatory collapse, tachycardia, cyanosis, delirium, convulsions, and coma. Death has been reported to occur in infants from less than 5 grams and in adults from 5 to 20 grams., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Liver - Irregularities - Based on Human Evidence

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Components

Edetate disodium dihydrate

Acute toxicity
LD50 Oral - Rat - male and female - 2,800 mg/kg
(OECD Test Guideline 401)
Remarks: The value is given in analogy to the following substances:
Ethylenedinitrilotetraacetic acid disodium salt
Acute toxicity estimate Inhalation - 1.6 mg/l - dust/mist
(Expert judgement)
Dermal: No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation
(OECD Test Guideline 404)
Remarks: (ECHA)
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium salt

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)
Remarks: (ECHA)
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium salt

Respiratory or skin sensitization
Maximisation Test - Guinea pig
Result: negative
(OECD Test Guideline 406)
Remarks: (ECHA)
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium salt

Germ cell mutagenicity
Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Result: negative
Remarks: (ECHA)
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid trisodium salt
Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Result: negative
Remarks: (ECHA)
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium saltThe value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid trisodium salt

Test Type: Ames test
Result: negative
Remarks: (ECHA)

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The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid trisodium salt
Method: OECD Test Guideline 474
Species: Mouse
Remarks: (ECHA)
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium salt

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
Inhalation - May cause damage to organs through prolonged or repeated exposure.
- Respiratory Tract

Aspiration hazard
No data available

boric acid

Acute toxicity
LD50 Oral - Rat - male and female - 3,450 mg/kg
Remarks: (ECHA)
LC50 Inhalation - Rat - male and female - 4 h - > 2.12 mg/l - dust/mist
(OECD Test Guideline 403)
LD50 Dermal - Rabbit - male and female - > 2,000 mg/kg
Remarks: (ECHA)

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 24 h
Remarks: (ECHA)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation - 24 h
(OECD Test Guideline 405)

Respiratory or skin sensitization
Buehler Test - Guinea pig
Result: negative
(OECD Test Guideline 406)

Germ cell mutagenicity
Test Type: sister chromatid exchange assay
Test system: Chinese hamster ovary cells
Result: negative
Remarks: (ECHA)

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Test Type: Ames test
Test system: S. typhimurium
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Result: negative
Test Type: Mutagenicity (mammal cell test):
Test system: Chinese hamster ovary cells
Result: negative
Method: OECD Test Guideline 474
Species: Mouse - male and female
Result: negative

Carcinogenicity
No data available

Reproductive toxicity
May damage fertility.
May damage the unborn child.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure

Aspiration hazard
No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Edetate disodium dihydrate:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l End point: mortality Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 GLP: yes Remarks: (ECHA) The value is given in analogy to the following substances: The value is given in analogy to the following substances: Sodium feredetate
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 140 mg/l End point: Immobilization Exposure time: 48 h Test Type: static test Method: DIN 38412

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Remarks: (ECHA)
The value is given in analogy to the following substances:
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium salt

NOEC (Daphnia magna (Water flea)): 25 mg/l
Exposure time: 21 d
Remarks: (ECHA)
The value is given in analogy to the following substances:
The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium salt

Toxicity to algae/aquatic plants : (Pseudokirchneriella subcapitata (green algae)): > 60 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes
Remarks: (ECHA)
The value is given in analogy to the following substances:
The value is given in analogy to the following substances: Sodium feredetate

Toxicity to microorganisms : NOEC (activated sludge): > 640 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
GLP: yes
Remarks: (ECHA)
The value is given in analogy to the following substances:
The value is given in analogy to the following substances: Sodium feredetate

boric acid:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 79.7 mg/l
Exposure time: 96 h
Test Type: static test
Analytical monitoring: yes
Method: US-EPA

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 133 mg/l
Exposure time: 48 h
Test Type: static test

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Remarks: (ECOTOX Database)

Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 52.4 mg/l Exposure time: 74.5 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes

Ecotoxicology Assessment

Chronic aquatic toxicity	:	This product has no known ecotoxicological effects.

Persistence and degradability

Components:

Edetate disodium dihydrate:

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 2 % Exposure time: 28 d Method: OECD Test Guideline 301D GLP: yes Remarks: The value is given in analogy to the following substances: The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium salt

boric acid:

Biodegradability	:	Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulative potential

Components:

Edetate disodium dihydrate:

Bioaccumulation	:	Species: Lepomis macrochirus (Bluegill sunfish) Bioconcentration factor (BCF): 1.8 Exposure time: 28 d Temperature: 70 °F / 21 °C Concentration: ca. 0.08 mg/l Method: OECD Test Guideline 305 Remarks: The value is given in analogy to the following substances: The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid,Tetrasodiumsalt

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boric acid:

Partition coefficient: n-octanol/water	:	log Pow: -1.09 (72 °F / 22 °C) pH: 7.5 Method: Regulation (EC) No. 440/2008, Annex, A.8 GLP: yes Remarks: Bioaccumulation is not expected.

Mobility in soil

No data available

Other adverse effects

Components:

Edetate disodium dihydrate:

Results of PBT and vPvB assessment	:	Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

boric acid:

Additional ecological information	:	Discharge into the environment must be avoided.

Endocrine disrupting properties

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

National Regulations

49 CFR
Not regulated as a dangerous good

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Poison Inhalation Hazard : No

Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Massachusetts Right To Know

water	7732-18-5

Maine Chemicals of High Concern

water	7732-18-5

Vermont Chemicals of High Concern

water	7732-18-5

Washington Chemicals of High Concern

water	7732-18-5

The components of this product are reported in the following inventories:

US TSCA : All substances listed as active on the TSCA inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.
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Revision Date : 07/30/2026

US / EN

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