An ISO9001 Certified Company

Material Safety Data Sheet
Borate Buffers

Section 1 - Chemical Product and Company Identification

MSDS Name:
Borate Buffers
Catalog Numbers:
LC11700, LC22962
Synonyms:
Borate buffer, APHA, for nitrogen (ammonia), Sodium borate buffer

Section 2 – Composition, Information on Ingredients

CAS#	Chemical Name:	Percent
7732-18-5	Water	>99
1303-96-4	Sodium tetraborate, decahydrate	0.25-0.48
1310-73-2	Sodium hydroxide	<0.04

Section 3 - Hazards Identification

Emergency Overview

Appearance: *clear, colorless solution*
Warning! *May cause irritation to eyes, skin, and gastrointestinal tract. May cause harm to the unborn child. May impair fertility.*
Target Organs: *eyes, skin, respiratory system, reproductive system*

Potential Health Effects

Eye:
May cause eye irritation.
Skin:
May cause skin irritation.
Ingestion:
May cause gastrointestinal irritation with nausea, vomiting, and diarrhea. Human fatalities from acute borate poisoning have been reported.

Inhalation:
May cause respiratory irritation.
Chronic:
May cause reproductive disorders and teratogenic effects.

Section 4 - First Aid Measures

Eyes:
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid.
Skin:
Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.
Ingestion:
Do not induce vomiting. Give conscious victim 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid at once.
Inhalation:
Move victim to fresh air immediately. Get medical aid if irritation or other symptoms appear.
Notes to Physician:
Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Extinguishing Media:
For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.
Autoignition Temperature:
No information found.
Flash Point:
No information found.
NFPA Rating:
Health- 1, Flammability- 0, Instability- 0
Explosion Limits:
Lower: n/a Upper: n/a

Section 6 - Accidental Release Measures

General Information:
Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:
Absorb spill with inert material such as sand, vermiculite, or diatomaceous earth, and transfer to a suitable container labeled for later disposal.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Use with adequate ventilation.

Storage:

Store tightly capped in a cool, dry, well-ventilated area away from incompatible materials.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities using or storing this material should be equipped with an eyewash and safety shower. Provide local exhaust or general dilution ventilation to keep airborne levels below the permissible exposure limits.

Exposure Limits:

Chemical Name:	ACGIH	NIOSH	OSHA
Water	None of the components are on this list.	None of the components are on this list.	None of the components are on this list.
Sodium tetraborate, decahydrate	5 mg/m3 TWA	None of the components are on this list.	5 mg/m3 TWA (decahydrate)
Sodium hydroxide	None of the components are on this list.	2 mg/m3 TWA	None of the components are on the list

OSHA Vacated PELs:

None

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133. Do not wear contact lenses when working with chemicals.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134. Always use a NIOSH-approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Clear liquid
Color: Colorless
Odor: Odorless
pH: 8-9.5
Vapor Pressure: Not available
Vapor Density: Not available
Evaporation Rate: Not available

Viscosity:	Not available
Boiling Point:	Not available
Freezing/Melting Point:	Not available
Decomposition Temperature:	Not available
Solubility in water:	Soluble.
Specific Gravity/Density:	1.0
Molecular Formula:	Not available
Molecular Weight:	Not available

Section 10 - Stability and Reactivity

Chemical Stability:
Stable under normal temperatures and pressures.
Conditions to Avoid:
Incompatible materials.
Incompatibilities with Other Materials:
Strong oxidizing agents, strong acids.
Hazardous Decomposition Products:
Sodium oxide, boric acid.
Hazardous Polymerization:
Has not been reported.

Section 11 - Toxicological Information

RTECS:
CAS# 7732-18-5: ZC0110000.
CAS# 1303-96-4: VZ2275000.
CAS# 1310-73-2: WB4900000.
LD50/LC50:
CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg.
CAS# 1303-96-4:
Oral, mouse: LD50 = 2 gm/kg
Oral, rat: LD50 = 2660 mg/kg.
CAS# 1310-73-2:
No information found.
Carcinogenicity:
CAS# 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.
CAS# 1303-96-4: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.
CAS# 1310-73-2: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.
Epidemiology:
Borate poisoning affects kidneys.
Teratogenicity:
Teratogenic effects have occurred in laboratory animals.
Reproductive:
Reproductive toxicity effects have occurred in laboratory animals.

Mutagenicity:
See actual entry in RTECS for complete information.
Neurotoxicity:
No information found

Section 12 - Ecological Information

No information found

Section 13 - Disposal Considerations

Dispose of in accordance with Federal, State, and local regulations.

Section 14 - Transport Information

US DOT

Shipping Name: Not regulated.
Hazard Class:
UN Number:
Packing Group:

Section 15 - Regulatory Information

US Federal

TSCA:
CAS# 7732-18-5 is listed on the TSCA Inventory.
CAS# 1303-96-4 is listed on the TSCA Inventory.
CAS# 1310-73-2 is listed on the TSCA Inventory.
SARA Reportable Quantities (RQ):
CAS# 1310-73-2: final RQ = 1000 pounds (454 kg)
CERCLA/SARA Section 313:
None of the components are on this list.
OSHA - Highly Hazardous:
None of the components are on this list.

US State

State Right to Know:
Sodium tetraborate decahydrate can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
Sodium hydroxide can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
California Regulations:
None

European/International Regulations

Canadian DSL/NDSL:

CAS# 7732-18-5 is listed on Canada's DSL List.
CAS# 1303-96-4 is listed on Canada's DSL List.
CAS# 1310-73-2 is listed on Canada's DSL List.

Canada Ingredient Disclosure List:

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.
CAS# 1303-96-4 is listed on Canada's Ingredient Disclosure List.
CAS# 1310-73-2 is listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: October 21, 1997
Revision Date: December 6, 2011

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