Safety Data Sheet

Buffer Solution, pH 11.00

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Buffer Solution, pH 11.00

Synonyms/Generic Names: None

SDS Number: 124.00

Product Use: For Educational Use Only

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Contact: Ward's Science
5100 West Henrietta Rd.
PO Box 92912-9012
Rochester, NY 14692
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Target organ effect, Teratogen, Reproductive hazard

Target Organs: Testes

Signal Words: Danger

Pictograms:

GHS Classification:

Reproductive toxicity	Category 1B

GHS Label Elements, including precautionary statements:

Hazard Statements:

H360	May damage fertility or the unborn child.

Precautionary Statements:

P201	Obtain special instructions before use.
P308+P313	If exposed or concerned: Get medical advice/attention.

Potential Health Effects

Eyes	May cause eye irritation.
Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Ingestion	May be harmful if swallowed.

NFPA Ratings

Health	2
Flammability	0
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	2
Fire	0
Reactivity	0
Personal	C

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Sodium Hydroxide	<1	1310-73-2	215-185-5	NaOH	39.99 g/mol
Boric Acid	<1	10043-35-3	233-139-2	H_3BO_3	61.83 g/mole
Water	Balance	7732-18-5	231-791-2	H_2O	18.01 g/mol

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 15 minutes and seek medical attention.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention.
Ingestion	**Do Not Induce Vomiting!** Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention.

5. FIREFIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is not flammable. Use appropriate media for adjacent fire. Use flooding quantities of water to cool containers.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes under fire conditions. (Sodium oxides, Boron oxides) (See also Stability and Reactivity section).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment. Avoid breathing vapors, mist, or gas.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to a federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Evacuate and ventilate the area. Neutralize spill. Absorb neutralized spill with vermiculite or other inert absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove

	residual contamination. Dispose of all waste or cleanup materials in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for safe handling
See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use.

Conditions for safe storage, including any incompatibilities
Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Boric Acid	2 mg/m^3	TLV	USA ACGIH
	6 mg/m^3	STEL	USA ACGIH
Sodium Hydroxide	2 mg/m^3	PEL	USA OSHA
	2 mg/m^3	TLV	USA ACGIH
	10 mg/m^3	IDLH	OSHA

TWA: Time Weighted Average over 8 hours of work.
TLV: Threshold Limit Value over 8 hours of work.
REL: Recommended Exposure Limit
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit during x minutes.
IDLH: Immediately Dangerous to Life or Health
WEEL: Workplace Environmental Exposure Levels
CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses or goggles, with face shield if splashing is likely to occur.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear neoprene or nitrile gloves, protective clothing appropriate to the risk of exposure.
Other	Not Available

Other Recommendations
Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Clear, colorless liquid
Odor	No odor
Odor threshold	Not Applicable
pH	11
Melting point/freezing point	Not Available
Initial boiling point and boiling range	Not Available
Flash point	Not Flammable
Evaporation rate	Not Available

Flammability (solid, gas)	Not Flammable
Upper/lower flammability or explosive limit	Not Explosive
Vapor pressure	Not Available
Vapor density	Not Available
Relative density	1.0104 g/cm^3 (water = 1)
Solubility (ies)	Completely soluble in water
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Not Available
Incompatible Materials	Not Available
Hazardous Decomposition Products	Carbon oxides, Sodium oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Boric Acid

Skin	Not Available
Eyes	Not Available
Respiratory	Not Available
Ingestion	LD50 Oral – rat – 2660 mg/kg LD50 Oral – mouse – 3450 mg/kg

Sodium Hydroxide

Skin	Not Available
Eyes	Not Available
Respiratory	Not Available
Ingestion	LD50 Oral – rabbit – 400 mg/kg

Carcinogenicity

IARC	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP	No components 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 components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Eyes	Burns, pain, watering eyes.
Inhalation	Coughing, shortness of breath, burning, coughing, wheezing, laryngitis, shortness of breath, headache or nausea.
Skin	Redness, irritation, itching and pain, dermatitis.
Ingestion	Weakness, confusion, central nervous system effects, nausea and skin eruptions.

Chronic Toxicity	Not Available
Teratogenicity	Not Available
Mutagenicity	Not Available
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	Not Available
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Boric Acid

Aquatic Vertebrate	Fish: LC50 (Ptychocheilus lucius) - 279 mg/l (96 hr) Fish: LC50 Lepomis macrochirus – 1021 mg/l (96 hr)
Aquatic Invertebrate	LC50 Daphnia magna – 53.2 mg/l (21 days) EC50 Daphnia magna – 133 mg/l (48 hr)
Terrestrial	Not Available

Sodium Hydroxide

Aquatic Vertebrate	LC50 – Bluegill sunfish – 48 hours – 99 mg/L
Aquatic Invertebrate	LC50 – Mosquito fish – 96 hours – 125 mg/L
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residues.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product containers.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	Not Dangerous Goods
TDG	Not Dangerous Goods
IDMG	Not Dangerous Goods
Marine Pollutant	No
IATA/ICAO	Not Dangerous Goods

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Boric Acid
SARA 312	Boric Acid
SARA 313	Not Listed
WHMIS Canada	Class D-2B: Poisonous and infectious material- Other effects- Toxic

16. OTHER INFORMATION

Revision	Date
Revision 1	01/28/2013
Revision 2	07/10/2013