Material Safety Data Sheet
Buffer Solution for Fluoride

Section 1 - Chemical Product and Company Identification

MSDS Name:
Buffer Solution for Fluoride
Catalog Numbers:
LC12580
Synonyms:
None

Section 2 – Composition, Information on Ingredients

CAS#	Chemical Name:	Percent
7732-18-5	Water	>83
7647-14-5	Sodium chloride	5.8
64-19-7	Acetic acid	5.7
1310-73-2	Sodium hydroxide	<4
6132-04-3	Sodium citrate dihydrate	<1

Section 3 - Hazards Identification

Emergency Overview

Appearance: *clear, colorless solution*
Caution! May cause irritation to eyes and skin.
Target Organs: *eyes, skin, respiratory system, teeth*

Potential Health Effects

Eye:
May cause eye irritation.
Skin:
May cause skin irritation.
Ingestion:
May cause gastrointestinal irritation.

Inhalation:
Inhalation of vapors may cause respiratory tract irritation.
Chronic:
May cause dermatitis and conjunctivitis.

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 if irritation or symptoms occur.
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.

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 chloride	None of the components are on this list	None of the components are on this list	None of the components are on this list
Acetic acid	10 ppm TWA 15 ppm STEL	10 ppm TWA 15 ppm STEL 50 ppm IDLH	10 ppm TWA 25 mg/m3 TWA
Sodium hydroxide	2 mg/m3 Ceiling	2 mg/m3 Ceiling 10 mg/m3 IDLH	2 mg/m3 TWA
Sodium citrate dihydrate	None of the components are on this list	None of the components are on this list	None of the components are on this list

OSHA Vacated PELs:

Acetic acid: 10 ppm TWA; 25 mg/m3 TWA
Sodium hydroxide: 2 mg/m3 Ceiling

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: Liquid
Color: Colorless

Odor:	Odorless to slight vinegar-like odor
pH:	5-6
Vapor Pressure:	No information found.
Vapor Density:	No information found.
Evaporation Rate:	No information found.
Viscosity:	No information found.
Boiling Point:	No information found.
Freezing/Melting Point:	No information found.
Decomposition Temperature:	No information found.
Solubility in water:	Soluble
Specific Gravity/Density:	1.0-1.1
Molecular Formula:	No information found.
Molecular Weight:	No information found.

Section 10 - Stability and Reactivity

Chemical Stability:
Stable under normal temperatures and pressures.

Conditions to Avoid:
Incompatible materials, excess heat

Incompatibilities with Other Materials:
Strong oxidizers, metals

Hazardous Decomposition Products:
Acetic acid vapors, carbon monoxide, carbon dioxide, hydrogen chloride, sodium oxide

Hazardous Polymerization:
Has not been reported.

Section 11 - Toxicological Information

RTECS:

CAS# 7732-18-5: ZC0110000
CAS# 7647-14-5: VZ4725000
CAS# 64-19-7: AF1225000
CAS# 1310-73-2: WB4900000
CAS# 6132-04-3: unlisted.

LD50/LC50:

CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg
CAS# 7647-14-5:
Inhalation, rat: LC50 = 42 g/m3/1H
Oral, rat: LD50 = 3 gm/kg
Skin, rabbit: LD50 = 10 g/kg
CAS# 64-19-7:
Inhalation, rat: LC50 = 11.4 mg/L/4H
Oral, rat: LD50 = 3310 mg/kg
Skin, rabbit: LD50 = 1060 mg/kg
CAS# 1310-73-2:
Skin, rabbit: LD50 = 1350 mg/kg

CAS# 6132-04-3:
No information found.

Carcinogenicity:
No components of this product are listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

Epidemiology:
No information found

Teratogenicity:
No information found

Reproductive:
No information found

Mutagenicity:
No information found

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# 7647-14-5 is listed on the TSCA Inventory.
CAS# 64-19-7 is listed on the TSCA Inventory.
CAS# 1310-73-2 is listed on the TSCA Inventory.
CAS# 6132-04-3 is not listed on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form in on the Inventory (40CFR 720.3(u)(2)).

SARA Reportable Quantities (RQ):
CAS# 64-19-7: final RQ = 5000 pounds (2270 kg)
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:

Acetic acid 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# 7647-14-5 is listed on Canada's DSL List.
CAS# 64-19-7 is listed on Canada's DSL List.
CAS# 1310-73-2 is listed on Canada's DSL List.
CAS# 6132-04-3 is not listed on Canada's DSL or NDSL Lists.

Canada Ingredient Disclosure List:

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.
CAS# 7647-14-5 is not listed on Canada's Ingredient Disclosure List.
CAS# 64-19-7 is listed on Canada's Ingredient Disclosure List.
CAS# 1310-73-2 is listed on Canada's Ingredient Disclosure List.
CAS# 6132-04-3 is not listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: August 16, 1998
Revision Date: January 26, 2011

Information in this MSDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made.