HI 4010-06
TISAB III Fluoride Buffer

Safety Data Sheet

According to Regulation (EC) No. 1907/2006
OSHA Regulation 29 CFR 1910.1200
Canadian Regulation SOR/88-66

Revision Date: 2012-06-01
Reason for Revision: Reviewed Only

SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY

Product Name: HI 4010-06 TISAB III Fluoride Buffer

Application: Fluoride TISAB Solution

Company Information (USA): Hanna Instruments, Inc.
584 Park East Dr, Woonsocket, Rhode Island, USA 02895

Technical Service Contact Information: 1-800-426-6287 (8:30AM - 5:00PM ET)
+1-401-766-4260 (8:30AM - 5:00PM ET)

USA Emergency Contact Information: 1-800-424-9300 (Chemtrec 24Hr. Emergency)

International Emergency Contact Information: +1-703-527-3887 (Chemtrec 24Hr. Emergency)

E-mail Address: tech@hannainst.com

SECTION 2: HAZARD IDENTIFICATION

Harmful if swallowed. Irritating to eyes.

SECTION 3: COMPOSITION AND COMPONENT INFORMATION

Component:	Ammonium Chloride	1,2-Cyclohexylenedinitrilotetra-Acetic Acid
EC-No.:	235-186-4	236-308-9
CAS-No.:	12125-02-9	123333-90-4
Hazard:	Xn	Xi
Phrases:	R: 22-36	R: 36/38
Content:	> 25% - < 35%	> 1% - < 10%

SECTION 4: FIRST AID MEASURES

After Inhalation: Remove to fresh air.

After Skin Contact: Wash affected area with plenty of water. Remove contaminated clothing.

After Eye Contact: Rinse out immediately with plenty of water with the eyelid held wide open. Call in ophthalmologist.

After Swallowing: Make victim drink plenty of water, call in physician

General Information: Not available

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

Water spray, Carbon Dioxide, Dry Chemical Powder, Appropriate Foam.

Special Risks:

Development of hazardous combustion gases or vapors possible in the event of fire. The following may develop in the event of fire: Nitrogen Oxides, Hydrochloric Acid

Special Protective Equipment:

Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.

Additional Information:

Contain escaping vapors with water. Prevent fire-fighting water from entering surface water or groundwater.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Do not inhale vapors/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms. Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Environmental Precautions:

Do not allow to enter sewerage system.

Additional Notes:

Take up with liquid-absorbent material. Clean up affected area and dispose according to local regulation.

SECTION 7: HANDLING AND STORAGE

Handling:

Avoid generation of vapors/aerosols. Do not inhale substance.

Storage:

Store at room temperature (+15 to +25 °C). Tightly closed in a dry and well-ventilated place.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Type	*Value*	*Source*	*Type*	*Value*	*Source*
Ammonium Chloride					
TWA (8hr)	10 mg/m³ (fume)	Belgium	TWA (8hr)	10 mg/m³ (fume)	Canada (Ontario)
TWA (8hr)	10 mg/m³ (fume)	Canada (Quebec)	TWA (8hr)	10 mg/m³ (fume)	France
TWA (8hr)	10 mg/m³	Greece	TWA (8hr)	10 mg/m³ (steam and fumes)	Poland
TWA (8hr)	10 mg/m³ (fume)	Portugal	TWA (8hr)	5 mg/m³	Romania
TWA (8hr)	10 mg/m³	Spain	TWA (8hr)	10 mg/m³ (fume)	UK

Engineering:

Safety shower and eye wash.

Personal Protective Equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory Protection:

Required when vapors/aerosols are generated. Work under hood.

Protective Gloves:

Rubber or plastic

Eye Protection:

Goggles or face mask

Industrial Hygiene:

Immediately change contaminated clothing. Apply skin-protective barrier cream. Wash hands and face after working with substance.

SECTION 9: PHYSICAL/CHEMICAL PROPERTIES

Appearance:	Yellow liquid	***Odor:***	Weakly of acetic acid	***Density at 20°C:***	1.08 g/cm³
Melting Point:	NA	***Boiling Point:***	ND	***Solubility:***	Soluble
pH at 20°C:	~ 5.0	***Explosion Limit:***	ND	***Flash Point:***	ND
Thermal Decomp.:	NA				

SECTION 10: STABILITY AND REACTIVITY

Conditions to be Avoided:

Heating

Hazardous Polymerization:

Will not occur.

Further Information:

Unsuitable working materials: copper, copper compounds.

Hazardous Decomposition Products:

In the event of fire: See section 5.

Substances to be Avoided:

Alkali hydroxides, acids, halogen-halogen compounds nitrates, chlorates, heavy metal salts, nitrites, hydrogen cyanide, chlorine

SECTION 11: TOXICOLOGICAL INFORMATION

Product Toxicity

Quantitative data on the toxicity of this product is not available.

Potential Health Effects:

Inhalation:	Irritations of the mucous membranes, coughing, and dyspnoea.
Skin Contact:	Slight irritation symptoms.
Eye Contact:	Irritations.
Ingestion:	Mucosal irritations. headache, nausea, unconsciousness.
Further Data:	The following applies to ammonium salts in general: after swallowing: local irritation symptoms, nausea, vomiting, diarrhoea. Systemic effect: after the uptake of very large quantities: drop in blood pressure, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis, haemolysis. further hazardous properties cannot be excluded. The product should be handled with the usual care when dealing with chemicals.

Component Toxicity

Acute Toxicity:

Ammonium Chloride

LD50: Oral - Rat - 1650 mg/kg

Chronic Toxicity:

Not Available

Additional Data:

APPLICABLE TO PARTIAL COMPONENT:
The following applies to Ammonium chloride – as the pure substance
Acute toxicity
Specific symptoms in animal studies:
Eye irritation test (rabbit): Irritations (External MSDS).
Skin irritation test (rabbit): No irritation (External MSDS).
Subacute to chronic toxicity
Sensitization:
In animal experiments: negative. (External MSDS)
Noncarcinogenic in animal experiments. (External MSDS)
Mutagenicity (mammal cell test): micronucleus negative. (IUCLID)
Bacterial mutagenicity: Ames test: negative. (IUCLID)
No teratogenic effect in animal experiments. (IUCLID)
Further toxicological information
After inhalation: Irritations of the mucous membranes, coughing, and dyspnoea.
After skin contact: slight irritation symptoms.
After eye contact: Irritations.
After swallowing: mucosal irritations.
After swallowing of large amounts: headache, nausea, unconsciousness.

SECTION 12: ECOLOGICAL INFORMATION

Quantitative data on the ecotoxicity of this product is not available.

APPLICABLE TO PARTIAL COMPONENT:
The following applies to Ammonium chloride – as the pure substance
Biologic degradation:
Methods for the determination of biodegradability are not applicable to inorganic substances.
Behavior in environmental compartments:
Distribution: log Pow: -4.37 (calculated).
No bioaccumulation is to be expected (log Pow <1). Ecotoxic effects:
Biological effects:
Fish toxicity: C.carpio LC50: 209 mg/L /96 h (IUCLID).
Daphnia toxicity: Daphnia magna EC50: >100 mg/L /48 h (Lit.).

Further Data: Do not allow to enter waters, waste water, or soil!

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: Chemical residues are generally classified as special waste and thus covered by local regulations. Contact local authorities or disposal companies for advice. Handle contaminated packaging in the same way as the substance itself.

SECTION 14: TRANSPORTATION INFORMATION

Land:	***Sea:***	***Air:***
Not subject to transport regulations	Not subject to transport regulations	Not subject to transport regulations

SECTION 15: REGULATORY INFORMATION

Labeling according to EC Directives:

Symbol: Xn: Harmful

R-phrases: 22-36: Harmful if swallowed. Irritating to eyes.

S-phrases: 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

SECTION 16: OTHER INFORMATION

Text of R-phrases under Section 3

22: Harmful if swallowed.
36/38: Irritating to eyes and skin.

Revision Information

Revision Date:	2012-06-01
Supersedes edition of:	2009-06-10
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Legend

NA: Not Applicable
ND: Not Determined

THE INFORMATION CONTAINED HEREIN IS BASED ON THE PRESENT STATE OF OUR KNOWLEDGE. IT CHARACTERIZES THE PRODUCT WITH REGARD TO THE APPROPRIATE SAFETY PRECAUTIONS. IT DOES NOT REPRESENT A GUARANTEE OF THE PROPERTIES OF THE PRODUCT.