

Revision Date: 2009-06-10

Reason for Revision: 29 CFR 1910.1200 and SOR/88-66 Compliance

SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY

Product Name: HI 70467 Acetate Buffer pH 4

Application: Acetate buffer 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

Flammable. Causes severe burns.

SECTION 3: COMPOSITION AND COMPONENT INFORMATION

Component:	Sodium Hydroxide	Acetic Acid
EC-No.:	215-185-5	200-580-7
CAS-No.:	1310-73-2	64-19-7
Hazard:	C	C
Phrases:	R: 35	R: 10-35
Content:	> 5% - < 15%	> 25% - < 90%

SECTION 4: FIRST AID MEASURES

After Inhalation: Remove to fresh air. Summon doctor.

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

After Eye Contact: Rinse out immediately with plenty of water and seek medical advice.

After Swallowing: Drink plenty of water (if necessary several liters), avoid vomiting (risk of perforation!). Immediately seek medical advice. Do not attempt to neutralize.

General Information: Remove contaminated, soaked clothing immediately and dispose of safely.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

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

Special Risks:

Non-combustible. Ambient fire may liberate hazardous vapors. The following may develop in event of fire: Acetic Acid Vapors

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.

Safety Data Sheet

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Do not inhale vapors. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

Environmental Precautions:

Do not discharge into the drains/surface waters/groundwater.

Additional Notes:

Take up with liquid-absorbent material. Clean up affected area and dispose according to local regulation.
Render harmless: neutralize with diluted sulfuric acid.

SECTION 7: HANDLING AND STORAGE

Handling:

Accessible only for authorized persons.

Storage:

Tightly closed. Store at room temperature (+15 to +25 °C recommended).

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Type	Value	Source	Type	Value	Source
Acetic Acid					
TWA (8hr)	25 mg/m ³	Belgium	TWA (8hr)	25 mg/m ³	Canada (Ontario)
TWA (8hr)	25 mg/m ³	Canada (Quebec)	TWA (15min)	25 mg/m ³	France
TWA (8hr)	25 mg/m ³	Germany	TWA (8hr)	25 mg/m ³	Greece
TWA (8hr)	25 mg/m ³	Hungary	TWA (8hr)	15 mg/m ³	Poland
TWA (8hr)	10 ppm	Portugal	TWA (8hr)	25 mg/m ³	Romania
TWA (8hr)	25 mg/m ³	Spain	TWA (8hr)	25 mg/m ³	UK
TWA (8hr)	10 ppm	USA (ACGIH)	TWA (8hr)	10 ppm	USA (OSHA)
Sodium Hydroxide					
Ceiling	2 mg/m ³	Belgium	Ceiling	2 mg/m ³	Canada (Ontario)
Ceiling	2 mg/m ³	Canada (Quebec)	TWA (8hr)	2 mg/m ³	France
TWA (8hr)	2 mg/m ³	Greece	TWA (8hr)	2 mg/m ³	Hungary
TWA (8hr)	0.5 mg/m ³	Poland	Ceiling	2 mg/m ³	Portugal
TWA (8hr)	1 mg/m ³	Romania	Ceiling	2 mg/m ³	Spain
TWA (15min)	2 mg/m ³	UK	Ceiling	2 mg/m ³	USA (ACGIH)
TWA (8hr)	2 mg/m ³	USA (OSHA)			

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:

Change contaminated clothing. Wash hands after working with substance.

Safety Data SheetAccording to Regulation (EC) No. 1907/2006
OSHA Regulation 29 CFR 1910.1200
Canadian Regulation SOR/88-66**SECTION 9: PHYSICAL/CHEMICAL PROPERTIES**

Appearance:	Colorless liquid	Odor:	Pungent odor	Density at 20° C:	1.11 g/cm ³
Melting Point:	ND	Boiling Point:	ND	Solubility:	Soluble
pH at 20° C:	~ 4	Explosion Limit:	NA	Flash Point:	NA
Thermal Decomp.:	NA				

SECTION 10: STABILITY AND REACTIVITY**Conditions to be Avoided:**

Strong Heating

Hazardous Polymerization:

Will not occur.

Further Information:

Not available

Hazardous Decomposition Products:

In the event of fire: See section 5.

Substances to be Avoided:

Ammonium compounds (could be formed: ammonia); Acids, metals, light metals

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SECTION 11: TOXICOLOGICAL INFORMATION

Product Toxicity

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

Potential Health Effects:

- Inhalation:** Mucosal irritations, coughing, dyspnoea.
Skin Contact: Severe burns, necrosis.
Eye Contact: Severe burns, necrosis. Risk of blindness!
Ingestion: Burns of mouth, mucous membrane, esophagus. Risk of perforation in the esophagus and stomach.
Further Data: Further hazardous properties cannot be excluded. The product should be handled with the usual care when dealing with chemicals.

Component Toxicity

Acute Toxicity:

Acetic Acid

LC50: Inhalation - Mouse - 2810 ppm

LD50: Oral - Rat - 3310 mg/kg

Chronic Toxicity:

Not Available

Additional Data:

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Sodium hydroxide – as the pure substance

Acute toxicity

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

Specific symptoms in animal studies:

Eye irritation test (rabbit): burns.

Skin irritation test (rabbit): burns.

Subacute to chronic toxicity

Mutagenicity (mammal cell test): micronucleus negative.

Bacterial mutagenicity: Escherichia coli: negative.

Bacterial mutagenicity: Ames test: negative.

No teratogenic effect in animal experiments.

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Acetic acid – as the pure substance

Specific symptoms in animal studies:

Eye irritation test (rabbit): burns.

Skin irritation test (rabbit): burns.

Subacute to chronic toxicity

Bacterial mutagenicity: Salmonella typhimurium: negative.

No teratogenic effect in animal experiments.

Further toxicological information

Strongly corrosive substance.

Safety Data Sheet

According to Regulation (EC) No. 1907/2006
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SECTION 12: ECOLOGICAL INFORMATION

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

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Sodium hydroxide – as the pure substance

Biologic degradation:

Methods for the determination of biodegradability are not applicable to inorganic substances.

Behavior in environmental compartments:

Concentration in organisms is not to be expected.

Ecotoxic effects:

Biological effects:

Harmful effect on aquatic organisms. Toxic effect on fish and plankton. Harmful effect due to pH shift. Forms corrosive mixtures with water even if diluted. Does not cause biological oxygen deficit.

Neutralization possible in waste water treatment plants.

Fish toxicity:

Onchorhynchus mykiss LC50 : 45.4 mg/L /96 h (in hard water).

L.macrochirus LC50 : 99 mg/L /48h.

Daphnia toxicity:

Daphnia magna EC50 : 76 mg/L /24 h.

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Acetic acid – as the pure substance

Biologic degradation:

Biodegradation: 99 % /30 d (closed bottle test).

Readily biodegradable.

Behavior in environmental compartments:

Distribution: log p(o/w): -0.17 (experimental).

No bioaccumulation is to be expected (log P(o/w) <1).

Passage from aqueous solution into the atmosphere is not to be expected. Ecotoxic effects:

Biological effects:

Harmful effect on aquatic organisms. Harmful effect due to pH shift. Caustic even in diluted form.

Fish toxicity: L.macrochirus LC50: 75 mg/L /96 h. P.promelas LC50: 88 mg/L /96 h.

Daphnia toxicity: Daphnia magna EC50: 47 mg/L /24 h.

Bacterial toxicity: Photobacterium phosphoreum EC50: 11 mg/L /15 min microtox test.

Maximum permissible toxic concentration:

Algal toxicity: Sc.quadricauda IC5: 4000 mg/L /16 h.

Bacterial toxicity: Ps.putida EC5: 2850 mg/L /16 h neutral.

Protozoa: E.sulcatum EC5: 78 mg/L /72 h neutral.

Further Data: DO NOT ALLOW TO ENTER WATERS, WASTE WATERS, 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:

ADR/RID: 8 PGII

UN-N: 1760

Name: CORROSIVE LIQUID, n.o.s.

(sodium hydroxide/acetic acid solution)

Sea:

IMDG: 8/UN 1760/PGII

Name: CORROSIVE LIQUID, n.o.s.

(sodium hydroxide/acetic acid solution)

Air:

ICAO/IATA: 8/UN 1760/PGII

Name: CORROSIVE LIQUID, n.o.s.

(sodium hydroxide/acetic acid solution)

Transport data applies to the COMPLETE KIT!

SECTION 15: REGULATORY INFORMATION

Labeling according to EC Directives:

Symbol: C: Corrosive

R-phrases: 10-35: Flammable. Causes severe burns.

S-phrases: 26-37/39-45: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).

Contains: Sodium Hydroxide, Acetic acid

Safety Data SheetAccording to Regulation (EC) No. 1907/2006
OSHA Regulation 29 CFR 1910.1200
Canadian Regulation SOR/88-66**SECTION 16: OTHER INFORMATION*****Text of R-phrases under Section 3***10: Flammable.
35: Causes severe burns***Revision Information*****Revision Date:** 2009-06-10
Supersedes edition of: 2008-12-01
Reason for revision: 29 CFR 1910.1200 and SOR/88-66
Compliance***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.