

Health & Safety data sheet
According to EC Directive 91/155/EC and following amendments

Date of issue: 03 January 2008.

SECTION 1 - IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

Product name:

- Buffer Solution 10.2 ± 0.2.

Application:

- Buffer solution.

Manufacturer identification:

Hanna Instruments Italia s.r.l.
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 OSPEDALE NIGUARDA (MI) - ITALY

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients:

NAME (EC directives)	EC-Index-No.	CAS No.	LABELLING (EC directives)	CONTENT
2-Amino-2-methyl-1-propanol	603-070-00-6	124-68-5	Xi R 36/38-52/53	≥ 35% - < 50%
Hydrochloric acid	017-002-01-X	7647-01-0	C, Xi R 34-37	≥ 1% - < 10%

(full text of R phrases in section 16)

SECTION 3 - HAZARD IDENTIFICATION

Irritating to eyes and skin. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SECTION 4 - FIRST AID MEASURES

- **After inhalation** : if inhaled remove to fresh air. If breathing becomes difficult, call a physician.
- **After skin contact** : wash off with water and soap.
- **After eye contact** : rinse out with plenty of water for at least 15 minutes. If pain persists, summon medical advice.
- **After swallowing** : wash out mouth with plenty of water, provided person is conscious. Obtain medical attention if feeling unwell.

SECTION 5 – FIRE-FIGHTING MEASURES

- **Suitable extinguishing media:**
 - Powder, foam.
- **Special risks:**
 - Development of hazardous combustion gases or vapours possible in the event of fire.
 - The following may develop in event of fire: nitrogen oxides.
- **Special protective equipment for fire fighting:**
 - Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.
- **Additional information:**
 - Prevent fire-fighting water from entering surface water or groundwater.

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SECTION 6 - ACCIDENTAL RELEASE MEASURES

- **Personal precautions:**
 - Do not inhale vapors/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.
- **Environmental precautions:**
 - Do not allow to enter the sewerage system.
- **Additional notes:**
 - Take up dry. 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:**
 - Tightly closed. In a well-ventilated place at +15 to +25 °C.

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

- **Engineering controls**
 - Safety shower and eye bath.
- **General hygiene measures**
 - Wash thoroughly after handling.
- **Personal protective equipment:**
 - Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.
- **Respiratory protection:**
 - Required when vapors/aerosols are generated. Work under hood.
- **Protective gloves:**
 - Rubber or plastic
- **Eye protection:**
 - Goggles or face mask

SECTION 9 - PHYSICAL/CHEMICAL PROPERTIES

- | | |
|--|---|
| • Appearance : colorless solution | • Thermal decomposition : ND |
| • Odor : amine-like | • pH value at 20°C : 10.2 |
| • Solubility in water : soluble | • Density at 20°C : 0.98 g/cm ³ |
| • Melting point : NA | • Explosion limits : NA |
| • Boiling point : ND | • Flash point : ND |

SECTION 10 - STABILITY AND REACTIVITY

- **Conditions to be avoided:**
 - Heating.
- **Hazardous decomposition products:**
 - In the event of fire: see section 5.
- **Substances to be avoided:**
 - Strong oxidizing agents.

SECTION 11 - TOXICOLOGICAL INFORMATION

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

APPLICABLE TO MAIN COMPONENT(S):

- The following applies to 2-Amino-2-methyl-1-propanol, as the pure substance:

Acute toxicity

LD50 (dermal, rabbit): >2000 mg/kg.

LD50 (oral, rat): 2900 mg/kg.

Specific symptoms in animal studies:

Eye irritation test (rabbit): Irritations.

Skin irritation test (rabbit): Irritations.

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Subacute to chronic toxicity

Sensitization:

Sensitization test (guinea pig): No sensitizing effect.

Bacterial mutagenicity: Ames test: negative.

Property of this product must be anticipated on the basis from the components of the preparation:

- **In case of skin contact** : mucosal irritations, coughing, dyspnoea.
- **In case of eye contact** : irritant effect.
- **In case of ingestion** : of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.
- **Systemic effects** : CNS disorders, cardiovascular disorders.
- **Toxic effect on** : liver, kidneys.
- **Further data** : the product should be handled with the care usual when dealing with chemicals.

SECTION 12 - ECOLOGICAL INFORMATION

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

APPLICABLE TO MAIN COMPONENT(S):

- The following applies to 2-Amino-2-methyl-1-propanol, as the pure substance:

Biologic degradation:

Biodegradation: 40 % /28 d.

Biologically not readily degradable.

Behavior in environmental compartments:

Distribution: log p(o/w): -0.74 (calculated).

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

Ecotoxic effects:

Biological effects: Harmful effect on aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Fish toxicity: *L. macrochirus* LC₅₀: 190 mg/l /96 h.Daphnia toxicity: *Daphnia magna* EC₅₀: 65 mg/l /24 h.Algal toxicity: *Desmodesmus subspicatus* IC₅₀: 520 mg/l /72 h.Bacterial toxicity: *Ps. putida* EC₁₀: 50 mg/l.*Further ecologic data:*

COD: 2.050 g/g.

BOD₅: <0.01 g/g.

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 - TRANSPORT INFORMATION

Not subject to transport regulations.

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SECTION 15 - REGULATORY INFORMATION**Labeling according to EC Directives:**

Symbol	Xi	Irritant
R-phrases:	36/38-52/53	Irritating to eyes and skin. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases:	61	Avoid release to the environment. Refer to special instructions/Safety data sheets.
Contains:	-	

SECTION 16 - OTHER INFORMATION**• Text of any R phrases referred to under heading 2:**

- 34 : Causes burns.
- 36/38 : Irritating to eyes and skin.
- 37 : Irritating to respiratory system.
- 52/53 : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

• Supersedes edition of : / (1st edition)**• 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.