

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

Date of issue: 08 July 2004.

SECTION 1 - IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

Product name:

- HI 7022 ORP Solution for Platinum and Gold electrodes, 470 mV @ 25°C/77°F.

Application:

- ORP Solution for platinum and gold electrodes

Manufacturer identification:

Hanna Instruments Italia s.r.l.
Viale delle Industrie, 12/A
35010 Villafranca Padovana, Italy
tel.: +39-049-9070211

Emergency Telephone n. °:

+39-02-66101029
CENTRO ANTIVELENI
OSPEDALE NIGUARDA (MI) - ITALY

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients:

NAME (EC directives)	EC-Index-No.	CAS No.	LABELLING (EC directives)	CONTENT
Sulfuric acid	016-020-00-8	7664-93-9	C R 35	≥ 5% - < 15%

(full text of R-phrases in section 16)

SECTION 3 - HAZARD IDENTIFICATION

Irritating to eyes and skin.

SECTION 4 - FIRST AID MEASURES

Remove contaminated, soaked clothing immediately and dispose of safely.

- **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:**
 - In adaptation to materials stored in the immediate neighborhood.
- **Special risks:**
 - Development of hazardous combustion gases or vapors possible in the event of fire.
 - Hydrogen may form upon contact with metals (danger of explosion!).
 - The following may develop in event of fire: sulfur 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:**
 - Product itself is non-combustible. Cool container with spray water from a safe distance. Contain escaping vapors with water.
 - Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

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SECTION 6 - ACCIDENTAL RELEASE MEASURES

- **Personal precautions:**
 - Take up with liquid-absorbent material. Clean up affected area and dispose according to local regulation.
- **Environmental precautions:**
 - Do not discharge into the drains/surface waters/groundwaters.
- **Additional notes:**
 - Render harmless: neutralize with diluted sodium hydroxide solution or by throwing on lime, lime sand, or sodium carbonate.

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, protected from light.
 - Accessible only for authorized persons.

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

- **Engineering controls**
 - Safety shower and eye bath.
- **Ingredients with occupational exposure limits to be monitored:**
 - SULPHURIC ACID

EXPOSURE LIMITS - GERMANY			EXPOSURE LIMITS - DENMARK		
Source	Type	Value	Source	Type	Value
TRGS 900	OEL	1 mg/m ³	OEL	TWA	1 mg/m ³
Remarks: =1=					
- **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.
- **Protective gloves:**
 - Rubber or plastic
- **Eye protection:**
 - Goggles or face mask

SECTION 9 - PHYSICAL/CHEMICAL PROPERTIES

- **Appearance and odor** : light yellow liquid, odorless
- **Solubility in water** : Soluble
- **Melting point** : ND
- **Boiling point** : ND
- **pH value at 20°C** : ≈ 1
- **Density at 20°C** : ≈ 1 g/cm³
- **Ignition temperature** : NA
- **Flash point** : NA
- **Thermal decomposition** : ND

SECTION 10 - STABILITY AND REACTIVITY

- **Conditions to be avoided:**
 - Strong heating.
- **Hazardous decomposition products:**
 - In the event of fire: see section 5.
- **Hazardous Polymerization:**
 - Will not occur.
- **Substances to be avoided:**
 - Alkali metals, alkali compounds, ammonia, alkaline earth compounds, alkalis, acids, alkaline earth metals, metals, metal alloys, permanganates, combustible substances, organic solvents, halogenates.

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SECTION 11 - TOXICOLOGICAL INFORMATION

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

APPLICABLE TO MAIN COMPONENT(S):

The following applies to Sulfuric acid, as the pure substance:

Acute toxicity

LD50 (oral, rat): 2140 mg/kg (Using 25 % solution).

LC50 (inhalation, rat): 0.51 mg/l /2 h (calculated on the pure substance).

Specific symptoms in animal studies:

Skin irritation test (rabbit): burns.

Eye irritation test (rabbit): burns.

Toxicologic values are not available due to other dangerous properties of the substance.

Subacute to chronic toxicity

No appreciable contribution to the cancer risk in humans is to be expected where the limit value for occupational safety is observed.

An embryotoxic effect need not be feared when the threshold limit value is observed.

No teratogenic effect in animal experiments.

Bacterial mutagenicity: Ames-Test: negative.

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

- **In case of inhalation of vapors/aerosols** : irritative symptoms in the respiratory tract.
- **In case of skin contact** : irritations.
- **In case of eye contact** : possibility of corneal lesions.
- **In case of ingestion** : damage to the affected mucous membranes possible.
- **Further data** : further hazardous properties cannot be excluded. 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 Sulphuric acid, 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:

Quantitative data on the ecological effect of this product are not available.

Further ecologic data:

Harmful effect on aquatic organisms. Harmful effect due to pH shift. Toxic effect on fish and algae. Caustic even in diluted form. Does not cause biological oxygen deficit. Endangers drinking water supplies if allowed to enter soil and/or waters in large quantities. Neutralization possible in waste water treatment plants.

Daphnia toxicity: Daphnia magna EC 50 : 29 mg/l/24 h (calculated on the pure substance).

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.

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SECTION 14 - TRANSPORT INFORMATION

Not subject to transport regulations.

SECTION 15 - REGULATORY INFORMATION

Labeling according to EC Directives:

Symbol:	Xi	Irritant.
R-phrases:	36/38	Irritating to eyes and skin.
S-phrases:	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Contains:	-	

SECTION 16 - OTHER INFORMATION

- **Text of any R phrases referred to under heading 2:**
35 : Causes severe burns.
- **Supersedes edition of** : June 2002.
- **Reason for revision** : General update.
- **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.