

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

Date of issue: 29 June 2004.

SECTION 1 - IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

Product name:

- HI 3895-N Nitrate Reagent.

Application:

- Determination of nitrate in soil (extract) samples.

Manufacturer identification:

Hanna Instruments Italia s.r.l.
 Viale delle Industrie, 12/A
 35010 Villafranca Padovana, Italy
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+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
Citric acid monohydrate	NA	5949-29-1	Xi, R36	≥ 10% - < 20%

(full text of R-phrases in section 16)

SECTION 3 - HAZARD IDENTIFICATION

The concentration of the hazardous ingredient is below the limits of classification: a classification according to categories of danger as specified in directive 67/548/EC is not required.
 Risk cannot be excluded if the product is handled improperly.

SECTION 4 - FIRST AID MEASURES

Remove contaminated, soaked clothing immediately and dispose of safely.

- **After inhalation** : fresh air. Call in physician.
- **After skin contact** : wash off with plenty of water. Immediately remove contaminated clothing.
- **After eye contact** : rinse out with plenty of water for at least 10 minutes with the eyelid held wide open. Immediately call in ophthalmologist.
- **After swallowing** : make victim drink plenty of water (if necessary several liters. Immediately call in physician.

SECTION 5 – FIRE-FIGHTING MEASURES

- **Suitable extinguishing media**
 - Foam, dry powder or carbon dioxide.
- **Special risks:**
 - Non combustible.
 - Development of hazardous combustion gases possible in the event of fire.
- **Special protective equipment for fire fighting:**
 - Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

- **Personal precautions:**
 - Avoid substance contact. Do not inhale dusts. Ensure supply of fresh air in enclosed rooms.
- **Environmental precautions:**
 - Do not discharge into the drains/surface waters/groundwater.

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- **Additional notes:**
 - Take up dry. Forward for disposal.

SECTION 7 - HANDLING AND STORAGE

- **Handling:**
 - Work under hood. Do not inhale substance.
 - Avoid generation of dusts.
- **Storage:**
 - Tightly closed. In a well ventilated place.
 - Store at room temperature (+15 to +25 °C recommended).

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

- **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 dusts are generated. Work under hood.
- **Protective gloves:**
 - Rubber or plastic
- **Eye protection:**
 - Goggles or face mask
- **Industrial hygiene:**
 - Change contaminated clothing. Apply skin- protective barrier cream.
 - Wash hands after working with substance.

SECTION 9 - PHYSICAL/CHEMICAL PROPERTIES

- | | | | |
|------------------------------|----------------|-------------------------------|-----------------|
| • Appearance | : white powder | • pH value at 20°C | : 2.30 @ 10 g/L |
| • Odor | : odorless | • Density at 20°C | : NA |
| • Solubility in water | : soluble | • Ignition temperature | : NA |
| • Melting point | : ND | • Flash point | : NA |
| • Boiling point | : ND | | |

SECTION 10 - STABILITY AND REACTIVITY

- **Conditions to be avoided:**
 - Heating.
- **Substances to be avoided:**
 - metals, oxidizing agents, reducing agents.
- **Hazardous decomposition products:**
 - No information available.
- **Hazardous polymerization:**
 - Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

APPLICABLE TO PARTIAL COMPONENT(S):

The following applies to Citric acid monohydrate – as the pure substance

Acute toxicity

LD 50 (oral, rat): 3000 mg/kg (anhydrous substance).

Subacute to chronic toxicity

Bacterial mutagenicity: Ames test: negative.

No teratogenic effects in animal experiments.

No impairment of reproductive performance in animal experiments.

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

- **In case of inhalation** : irritations symptoms in the respiratory tract.
- **In case of skin contact** : slight irritations.
- **In case of eye contact** : irritations.
- **In case of ingestion of large amounts** : irritations of mucous membranes (stomach), coughing, pain, bloody vomiting.
- **Further data** : the product should be handled with the care usual when dealing with chemicals.

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SECTION 12 - ECOLOGICAL INFORMATION

APPLICABLE TO PARTIAL COMPONENT(S):

The following applies to Citric acid monohydrate – as the pure substance

Biologic degradation:

Biodegradation: >98 % /2 d Zahn-Wellens test;

Easily eliminable.

Behavior in environmental compartments:

Distribution: log p(o/w): -1.72 (20 °C) (anhydrous substance);

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

Ecotoxic effects:

Biological effects:

Harmful effect due to pH shift.

Fish toxicity: L.idus LC₅₀ : 440760 mg/l /96 h (anhydrous substance).

Daphnia toxicity: Daphnia magna EC₅₀ : ~120 mg/l /72 h (anhydrous substance).

Maximum permissible toxic concentration:

Protozoa: E.sulcatum EC₅ : 485 mg/l /72 h (anhydrous substance).

Bacterial toxicity: Ps.putida EC₅ : >10000 mg/l /16 h (anhydrous substance); M.aeruginosa EC₅ : 80 mg/l /8 d (anhydrous substance). Algal toxicity: Sc.quadricauda IC₅ : 640 mg/l /7 d (anhydrous substance).

Further ecologic data:

Degradability:

BOD₅ : 0.481 g/g; TOD: 0.686 g/g; COD: 0.685 g/g.

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.

SECTION 15 - REGULATORY INFORMATION

Labeling according to EC Directives:

Symbol: -

R-phrases: -

S-phrases: 22-24/25

Do not breathe dust. Avoid contact with skin and eyes.

Contains: -

SECTION 16 - OTHER INFORMATION

- **Text of any R phrases referred to under section 2:**

36 : Irritating to eyes.

- **Supersedes edition of** : June 2002

- **Reason for revision** : change in labeling after reevaluation.

- **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.