

## Safety Data Sheet

According to U.S.A. Federal Hazcom 2012 and Canadian HPR - WHMIS 2015

### 1. Identification

#### 1.1. Product identifier

Code **HI7090**  
Product name **ISA for Sodium ISE**

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use **Ionic Strength Adjuster (ISA) for Sodium Ion Selective Electrodes.**

#### 1.3. Details of the supplier of the safety data sheet

Name **Hanna Instruments S.R.L.**  
Full address **str. Hanna Nr 1**  
District and Country **457260 loc. Nufalau (Salaj) Romania**  
Tel. **+40 260607700**  
Fax **+40 260607700**

e-mail address of the competent person responsible for the Safety Data Sheet

**msds@hanna.ro**

Product distribution by:

**Hanna Instruments, Inc - 584 Park East Drive, Woonsocket, Rhode Island, USA 02895 - Technical Service Contact Information: +1 8004266287 - e-mail: sds@hannainst.com**

#### 1.4. Emergency telephone number

For urgent inquiries refer to

**USA Emergency Contact Information: +1 8004249300 - CHEMTREC 24 hours/365 days - International Emergency Contact Information: +1 7035273887 - CHEMTREC 24 hours/365 days**

### 2. Hazards identification

#### 2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200). The product thus requires a safety datasheet. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

##### Classification and Hazard Statement

Substance or mixture corrosive to metals, category

May be corrosive to metals.

1

Skin corrosion, category 1

Causes severe skin burns and eye damage.

Serious eye damage, category 1

Causes serious eye damage.

Specific target organ toxicity - single exposure, category 3

May cause respiratory irritation.

Hazard pictograms:



Signal words:

**Danger**

Hazard statements:

**H290**

May be corrosive to metals.

**H314**

Causes severe skin burns and eye damage.

**H335**

May cause respiratory irritation.

Precautionary statements:

## 2. Hazards identification ... / >>

### Prevention:

**P261**

Avoid breathing dust, fume, gas, mist, vapours, spray.

**P280**

Wear protective gloves / protective clothing / eye protection / face protection.

### Response:

**P303+P361+P353**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / shower.

**P305+P351+P338**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

**P310**

Immediately call a POISON CENTER or doctor.

### Storage:

**P404**

Store in a closed container.

### Disposal:

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## 2.2. Other hazards

Information not available

## 3. Composition/information on ingredients

### 3.2. Mixtures

#### Contains:

#### Identification

**x = Conc. %**

#### Classification:

#### AMMONIUM CHLORIDE

CAS 12125-02-9 10 ≤ x < 30

EC 235-186-4

INDEX 017-014-00-8

**Acute toxicity, category 4 H302, Eye irritation, category 2 H319**

#### AMMONIUM HYDROXIDE

CAS 1336-21-6 5 ≤ x < 9

**Substance or mixture corrosive to metals, category 1 H290, Skin corrosion, category 1B H314, Serious eye damage, category 1 H318, Specific target organ toxicity - single exposure, category 3 H335, Hazardous to the aquatic environment, acute toxicity, category 1 H400 M=1**

EC 215-647-6

INDEX 007-001-01-2

\* There is a batch to batch variation.

The full wording of hazard (H) phrases is given in section 16 of the sheet.

## 4. First-aid measures

### 4.1. Description of first aid measures

**EYES:** Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

**SKIN:** Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.

**INGESTION:** Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.

**INHALATION:** Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

### 4.2. Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product are unknown.

#### AMMONIUM CHLORIDE

Irritant effects. 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.

#### AMMONIUM HYDROXIDE

AMMONIUM HYDROXIDE 32%: Irritation and corrosion, bronchitis, Cough, Shortness of breath, gastric pain, Unconsciousness, Bloody vomiting, Nausea, collapse, shock, Risk of blindness!

### 4.3. Indication of any immediate medical attention and special treatment needed

Information not available

## 5. Fire-fighting measures

### 5.1. Extinguishing media

#### SUITABLE EXTINGUISHING EQUIPMENT

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

#### UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

### 5.2. Special hazards arising from the substance or mixture

#### HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products.

### 5.3. Advice for firefighters

#### GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

### 6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

### 6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

### 6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

## 7. Handling and storage

### 7.1. Precautions for safe handling

Ensure that there is an adequate earthing system for the equipment and personnel. Avoid contact with eyes and skin. Do not breathe powders, vapours or mists. Do not eat, drink or smoke during use. Wash hands after use. Avoid leakage of the product into the environment.

### 7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store in a ventilated and dry place, far away from sources of ignition. Keep containers well sealed. Keep the product in clearly labelled containers. Avoid overheating. Avoid violent blows. Keep containers away from any incompatible materials, see section 10 for details.

### 7.3. Specific end use(s)

Information not available

## 8. Exposure controls/personal protection

### 8.1. Control parameters

Regulatory References:

|     |              |                                                                                                                                                                                                                                                                   |
|-----|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| USA | NIOSH-REL    | NIOSH publication No. 2005-149, 3th printing, 2007.                                                                                                                                                                                                               |
| USA | CAL/OSHA-PEL | California Division of Occupational Safety and Health (Cal-OSHA) Permissible Exposure Limits (PELs).                                                                                                                                                              |
| EU  | OEL EU       | Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 98/24/EC; Directive 91/322/EEC. |
|     | TLV-ACGIH    | ACGIH 2020                                                                                                                                                                                                                                                        |

#### AMMONIUM CHLORIDE

##### Threshold Limit Value

| Type      | Country | TWA/8h | STEL/15min | Remarks / Observations |
|-----------|---------|--------|------------|------------------------|
|           |         | mg/m3  | ppm        |                        |
| TLV-ACGIH | -       | 10     | 20         |                        |
| CAL/OSHA  | USA     | 10     | 20         |                        |
| NIOSH     | USA     | 10     | 20         |                        |

#### AMMONIUM HYDROXIDE

##### Threshold Limit Value

| Type      | Country | TWA/8h | STEL/15min | Remarks / Observations |
|-----------|---------|--------|------------|------------------------|
|           |         | mg/m3  | ppm        |                        |
| TLV-ACGIH | -       | 17     | 25         |                        |
| OEL       | EU      | 14     | 20         |                        |

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

### 8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration. Personal protective equipment must comply with current regulations.

#### HAND PROTECTION

Protect hands with category III work gloves (OSHA 29 CFR 1910.138).

The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

#### SKIN PROTECTION

Wear category I professional long-sleeved overalls and safety footwear. Wash body with soap and water after removing protective clothing.

#### EYE PROTECTION

Wear airtight protective goggles (OSHA 29 CFR 1910.133).

#### RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, wear a mask with a NIOSH certified filter, whose class must be chosen according to the limit of use concentration (NIOSH 42 CFR 84, OSHA 29 CFR 1910.134). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus or external air-intake breathing apparatus. For a correct choice of respiratory protection device, see standard NIOSH 42 CFR 84, OSHA 29 CFR 1910.134.

#### ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

## 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

| Properties | Value      | Information |
|------------|------------|-------------|
| Appearance | liquid     |             |
| Colour     | colourless |             |

### 9. Physical and chemical properties ... / >>

|                                        |                  |
|----------------------------------------|------------------|
| Odour                                  | amino            |
| Odour threshold                        | Not available    |
| pH                                     | 9.6              |
| Melting point / freezing point         | Not available    |
| Initial boiling point                  | Not available    |
| Boiling range                          | Not available    |
| Flash point                            | Not applicable   |
| Evaporation rate                       | Not available    |
| Flammability (solid, gas)              | Not available    |
| Lower inflammability limit             | Not available    |
| Upper inflammability limit             | Not available    |
| Lower explosive limit                  | Not available    |
| Upper explosive limit                  | Not available    |
| Vapour pressure                        | Not available    |
| Vapour density                         | Not available    |
| Relative density                       | 1                |
| Solubility                             | soluble in water |
| Partition coefficient: n-octanol/water | Not available    |
| Auto-ignition temperature              | Not available    |
| Decomposition temperature              | Not available    |
| Viscosity                              | Not available    |
| Explosive properties                   | not applicable   |
| Oxidising properties                   | not applicable   |

#### 9.2. Other information

|                              |         |
|------------------------------|---------|
| Total solids (250°C / 482°F) | 21,10 % |
|------------------------------|---------|

### 10. Stability and reactivity

#### 10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

##### AMMONIUM HYDROXIDE

AMMONIUM HYDROXIDE 32%: Corrodes aluminium, iron, zinc, copper and their alloys.

#### 10.2. Chemical stability

The product is stable in normal conditions of use and storage.

#### 10.3. Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

##### AMMONIUM CHLORIDE

Violent reactions possible with: alkali hydroxides, acids Risk of ignition or formation of inflammable gases or vapours with: halogen-halogen compounds, alkalines, alkaline substances. Risk of explosion with: nitrates, chlorates, Heavy metal salts, nitrites, Hydrogen cyanide (hydrocyanic acid), Chlorine, silver salt, Strong oxidizing agents.

##### AMMONIUM HYDROXIDE

AMMONIUM HYDROXIDE 32%: Risk of explosion on contact with strong acids and iodine. Can react dangerously with strong bases.

#### 10.4. Conditions to avoid

None in particular. However the usual precautions used for chemical products should be respected.

##### AMMONIUM CHLORIDE

Moisture and sources of heat.

#### 10.5. Incompatible materials

##### AMMONIUM CHLORIDE

Water, bromine trifluoride and pentafluoride, iodine heptafluoride, potassium chlorate, alkalis, alkaline carbonates, acids, lead and silver salts.

##### AMMONIUM HYDROXIDE

AMMONIUM HYDROXIDE 32%: Silver, lead, zinc and their salts; hydrochloric acid, nitric acid, oleum, halogens, acrolein, nitromethane and acrylic acid.

## 10. Stability and reactivity ... / >>

### 10.6. Hazardous decomposition products

#### AMMONIUM CHLORIDE

Nitric oxide, ammonia and hydrochloric acid.

#### AMMONIUM HYDROXIDE

AMMONIUM HYDROXIDE 32%: Nitric oxides.

## 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

### 11.1. Information on toxicological effects

#### AMMONIUM CHLORIDE

Acute oral toxicity, Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract, absorption - Acute inhalation toxicity, Symptoms: Possible damages: mucosal irritations - Eye irritation, Rabbit Result: Eye irritation, Causes serious eye irritation.

#### AMMONIUM HYDROXIDE

AMMONIUM HYDROXIDE 32% - Skin irritation rabbit, Result: Severe irritations, (29% solution), Dermatitis Necrosis, Mixture causes burns - Eye irritation rabbit, Result: Severe irritations, (29% solution), Mixture causes serious eye damage. Risk of blindness!

#### Metabolism, toxicokinetics, mechanism of action and other information

Information not available

#### Information on likely routes of exposure

Information not available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

#### Interactive effects

Information not available

#### ACUTE TOXICITY

##### AMMONIUM CHLORIDE

LD50 (Oral) 1410 mg/kg Rat

##### AMMONIUM HYDROXIDE

LD50 (Oral) 350 mg/kg Rat

#### SKIN CORROSION / IRRITATION

Corrosive for the skin

#### SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

#### RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

#### GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

#### CARCINOGENICITY

Does not meet the classification criteria for this hazard class

### 11. Toxicological information ... / >>

#### REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

#### STOT - SINGLE EXPOSURE

May cause respiratory irritation

#### STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

#### ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

### 12. Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

#### 12.1. Toxicity

##### AMMONIUM CHLORIDE

LC50 - for Fish 3.98 mg/l/96h Oncorhynchus mykiss

EC50 - for Crustacea > 100 mg/l/48h Daphnia magna

LC10 for Fish 4.28 mg/l/28d Lepomis macrochirus

Chronic NOEC for Fish 57 mg/l Oncorhynchus mykiss

##### AMMONIUM HYDROXIDE

LC50 - for Fish 0.53 mg/l/96h Oncorhynchus mykiss

EC50 - for Crustacea 20 mg/l/48h Daphnia magna

#### 12.2. Persistence and degradability

##### AMMONIUM CHLORIDE

Solubility in water > 10000 mg/l

Degradability: information not available

##### AMMONIUM HYDROXIDE

Degradability: information not available

#### 12.3. Bioaccumulative potential

##### AMMONIUM CHLORIDE

Partition coefficient: n-octanol/water -3.2 Log Kow

##### AMMONIUM HYDROXIDE

Partition coefficient: n-octanol/water -1.38 Log Kow

#### 12.4. Mobility in soil

Information not available

## 12. Ecological information ... / >>

### 12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage  $\geq$  than 0,1%.

### 12.6. Other adverse effects

AMMONIUM HYDROXIDE

AMMONIUM HYDROXIDE 32% - Biological effects: Harmful effect due to pH shift. Forms toxic mixtures in water, dilution measures notwithstanding. Further information on ecology Discharge into the environment must be avoided.

## 13. Disposal considerations

### 13.1. Waste treatment methods

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

## 14. Transport information

### 14.1. UN number

ADR / RID, IMDG, IATA: 2672

### 14.2. UN proper shipping name

ADR / RID: AMMONIA SOLUTION  
IMDG: AMMONIA SOLUTION  
IATA: AMMONIA SOLUTION

### 14.3. Transport hazard class(es)

ADR / RID: Class: 8 Label: 8

IMDG: Class: 8 Label: 8

IATA: Class: 8 Label: 8



### 14.4. Packing group

ADR / RID, IMDG, IATA: III

### 14.5. Environmental hazards

ADR / RID: NO  
IMDG: NO  
IATA: NO

### 14.6. Special precautions for user

|            |                      |                         |                              |
|------------|----------------------|-------------------------|------------------------------|
| ADR / RID: | HIN - Kemler: 80     | Limited Quantities: 5 L | Tunnel restriction code: (E) |
|            | Special provision: - |                         |                              |
| IMDG:      | EMS: F-A, S-B        | Limited Quantities: 5 L |                              |
| IATA:      | Cargo:               | Maximum quantity: 60 L  | Packaging instructions: 856  |
|            | Pass.:               | Maximum quantity: 5 L   | Packaging instructions: 852  |
|            | Special provision:   | A64, A803               |                              |

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Information not relevant

## 15. Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### U.S. Federal Regulations

##### TSCA:

All components are listed on TSCA Inventory.

##### Clean Air Act Section 112(b):

No component(s) listed.

##### Clean Air Act Section 602 Class I Substances:

No component(s) listed.

##### Clean Air Act Section 602 Class II Substances:

No component(s) listed.

##### Clean Water Act – Priority Pollutants:

No component(s) listed.

##### Clean Water Act – Toxic Pollutants:

No component(s) listed.

##### DEA List I Chemicals (Precursor Chemicals):

No component(s) listed.

##### DEA List II Chemicals (Essential Chemicals):

No component(s) listed.

##### EPA List of Lists:

##### 313 Category Code:

1336-21-6 AMMONIUM HYDROXIDE

##### EPCRA 302 EHS TPQ:

No component(s) listed.

##### EPCRA 304 EHS RQ:

No component(s) listed.

##### CERCLA RQ:

12125-02-9 AMMONIUM CHLORIDE  
1336-21-6 AMMONIUM HYDROXIDE

##### EPCRA 313 TRI:

1336-21-6 AMMONIUM HYDROXIDE

##### RCRA Code:

No component(s) listed.

##### CAA 112 (r) RMP TQ:

No component(s) listed.

#### State Regulations

##### Massachusetts:

12125-02-9 AMMONIUM CHLORIDE  
1336-21-6 AMMONIUM HYDROXIDE

##### Minnesota:

12125-02-9 AMMONIUM CHLORIDE

##### New Jersey:

12125-02-9 AMMONIUM CHLORIDE  
1336-21-6 AMMONIUM HYDROXIDE

### 15. Regulatory information ... / >>

#### New York:

|            |                    |
|------------|--------------------|
| 12125-02-9 | AMMONIUM CHLORIDE  |
| 1336-21-6  | AMMONIUM HYDROXIDE |

#### Pennsylvania:

|            |                    |
|------------|--------------------|
| 12125-02-9 | AMMONIUM CHLORIDE  |
| 1336-21-6  | AMMONIUM HYDROXIDE |

#### California:

|            |                    |
|------------|--------------------|
| 12125-02-9 | AMMONIUM CHLORIDE  |
| 1336-21-6  | AMMONIUM HYDROXIDE |

#### Proposition 65:

This product does not contain any substances known to the State of California to cause cancer, reproductive harm or birth defects.

#### International Regulations

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

### 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

|             |                                          |
|-------------|------------------------------------------|
| <b>H290</b> | May be corrosive to metals.              |
| <b>H302</b> | Harmful if swallowed.                    |
| <b>H314</b> | Causes severe skin burns and eye damage. |
| <b>H318</b> | Causes serious eye damage.               |
| <b>H319</b> | Causes serious eye irritation.           |
| <b>H335</b> | May cause respiratory irritation.        |
| <b>H400</b> | Very toxic to aquatic life.              |

#### LEGEND:

- 313 CATEGORY CODE: Emergency Planning and Community Right-to Know Act Section 313 Category Code
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAA 112 @ RMP TQ: Risk Management Plan Threshold Quantity (Clean Air Act Section 112@)
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CERCLA RQ: Reportable Quantity (Comprehensive Environment Response, Compensation, and Liability Act)
- CLP: EC Regulation 1272/2008
- DEA: Drug Enforcement Administration
- EmS: Emergency Schedule
- EPA: US Environmental Protection Agency
- EPCRA: Emergency Planning and Community Right-to Know Act
- EPCRA 302 EHS TPQ: Extremely Hazardous Substance Threshold Planning Quantity (Section 302 Category Code)
- EPCRA 304 EHS RQ: Extremely Hazardous Substance Reportable Quantity (Section 304 Category Code)
- EPCRA 313 TRI: Toxics Release Inventory (Section 313 Category Code)
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PEL: Predicted exposure level
- RCRA Code: Resource Conservation and Recovery Act Code
- REL: Recommended exposure limit
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TSCA: Toxic Substances Control Act
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit

### 16. Other information ... / >>

- VOC: Volatile organic Compounds- WHMIS: Workplace Hazardous Materials Information System.

#### GENERAL BIBLIOGRAPHY:

- GHS rev. 3
- The Merck Index. 10th Edition
- Handling Chemical Safety
- Niosh - Registry of Toxic Effects of Chemical Substances
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy
- 6 NYCRR part 597
- Cal/OSHA website
- California Safe Drinking Water and Toxic Enforcement Act
- EPA website
- Hazard Communication Standard (HCS 2012)
- IARC website
- List Of Lists EPA: Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112® of the Clean Air Act
- Massachusetts 105 CMR Department of public health 670.000: "Right to Know"
- Minnesota Chapter 5206 Department Of Labor and Industry Hazardous Substances, Employee "Right to Know".
- New Jersey Worker and Community Right to know Act N.J.S.A.
- NTP. 2011. Report on Carcinogens, 12th Edition.
- OSHA website
- Pennsylvania, Hazardous Substance List, Chapter 323

#### Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

#### CALCULATION METHODS FOR CLASSIFICATION

Product classification derives from criteria established by the OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200), unless determined otherwise in Section 11 and 12. The data for evaluation of chemical-physical properties are reported in section 9.

#### Changes to previous review:

The following sections were modified:

01 / 02 / 03 / 04 / 08 / 09 / 10 / 11 / 12 / 13 / 15 / 16.