

Safety Data Sheet

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

1. Identification

1.1. Product identifier

Code HI746-11B
Product name Iron Low Range Certified Standard Cuvette - B

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

Intended use Certified Standard for Validation of HI 746 Colorimeters.

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. Nusfalau (Salaj)
Romania
Tel. +40 260607700
Fax +40 260607700

e-mail address of the competent person responsible for the Safety Data Sheet msds@hanna.ro

Supplier: 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 1	May be corrosive to metals.
Carcinogenicity, category 1B	May cause cancer.
Germ cell mutagenicity, category 2	Suspected of causing genetic defects.
Reproductive toxicity, category 1B	May damage fertility or the unborn child.
Eye irritation, category 2	Causes serious eye irritation.
Skin irritation, category 2	Causes skin irritation.
Respiratory sensitization, category 1B	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization, category 1A	May cause an allergic skin reaction.

Hazard pictograms:



Signal words: Danger

Hazard statements:

H290	May be corrosive to metals.
H350	May cause cancer.
H341	Suspected of causing genetic defects.
H360	May damage fertility or the unborn child.

2. Hazards identification ... / >>

- H319 Causes serious eye irritation.
- H315 Causes skin irritation.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H317 May cause an allergic skin reaction.

Precautionary statements:

Prevention:

- P201 Obtain special instructions before use.
- P260 Do not breathe dust, fume, gas, mist, vapours, spray.
- P273 Avoid release to the environment.
- P280 Wear protective gloves / protective clothing / eye protection / face protection.

Response:

- P302+P352 IF ON SKIN: Wash with plenty of water and soap.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 IF exposed or concerned: Get medical advice / attention.

Storage:

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Disposal:

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2.2. Other hazards

Environmental classification as for Reg. (EC) 1272/2008 (CLP):

The product is classified as hazardous for environment pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP).

Classification and Hazard Statement

Hazardous to the aquatic environment, chronic toxicity, category 2 Toxic to aquatic life with long lasting effects.

Hazard pictograms:



Hazard statements:

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

Prevention:

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Response:

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Storage:

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Disposal:

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Additional hazards

Information not available

3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification x = Conc. % Classification:

COBALT (II) CHLORIDE HEXAHYDRATE

24,79% - metallic element

INDEX 027-004-00-5 1 ≤ x < 2.5

Carcinogenicity, category 1B H350, Germ cell mutagenicity, category 2 H341, Reproductive toxicity, category 1B H360, Acute toxicity, category 4 H302, Respiratory sensitization, category 1B H334, Skin sensitization, category 1A H317, Hazardous to the aquatic environment, acute toxicity, category 1 H400 M=10, Hazardous to the aquatic environment, chronic toxicity, category 1 H410 M=10

3. Composition/information on ingredients [... / >>](#)

EC 231-589-4
CAS 7791-13-1
HYDROCHLORIC ACID
INDEX 017-002-01-X $1 \leq x < 3$

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

EC 231-595-7
CAS 7647-01-0
REACH Reg. 01-2119484862-26

* 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.

COBALT (II) CHLORIDE HEXAHYDRATE

Allergic reactions, irritant effects, Diarrhoea, Tremors, Symptoms of an acute cobalt intoxication: diarrhoea, loss of appetite, drop in body temperature, drop in blood pressure. Toxic effect on kidneys (proteinuria, anuria), heart, and pancreas.

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

6. Accidental release measures ... / >>

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	OSHA-PEL	Occupational Exposure Limits - Limits for Air Contaminants TABLE Z-1-1910.1000.
USA	CAL/OSHA-PEL	California Division of Occupational Safety and Health (Cal-OSHA) Permissible Exposure Limits (PELs).
EU	OEL EU	Directive (EU) 2022/431; 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 2021

HYDROCHLORIC ACID

Threshold Limit Value						
Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV-ACGIH	-			2.9 (C)	2 (C)	
OEL	EU	8	5	15	10	
OSHA	USA			7 (C)	5 (C)	
CAL/OSHA	USA	7	5			
NIOSH	USA			7 (C)	5 (C)	

COBALT (II) CHLORIDE HEXAHYDRATE

Threshold Limit Value						
Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV-ACGIH	-	0.02				

Legend:

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

8. Exposure controls/personal protection ... / >>

COBALT (II) CHLORIDE HEXAHYDRATE

Co - Methods for measurement of the workplace atmosphere have to correspond to the requirements of norm ISO 15202 - Biological Values, ACGIH: 15 µg/L Cobalt in urine (End of shift at end of workweek), DEU: 15 µg/L Cobalin Urin, Luft Cobalt 0.025 mg/Kubikmeter (Expositionsende bzw. Schichtende; bei Langzeitexposition: nach mehreren vorangegangenen Schichten), ESP: 15 µg/L Cobalto en orina (Final de la semana laboral).

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.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	liquid	
Colour	red	
Odour	odourless	
Odour threshold	not available	
pH	1.1	Method:ASTM D1293-18 Temperature: 25 °C
Melting point / freezing point	not available	
Initial boiling point	not available	
Boiling range	not available	
Flash point	not applicable	
Evaporation rate	not available	
Flammability	not available	
Lower inflammability limit	not available	
Upper inflammability limit	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Vapour pressure	17.52	
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)	2,39 %
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10. Stability and reactivity

10.1. Reactivity

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

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.

HYDROCHLORIC ACID

Risk of explosion on contact with: alkaline metals, aluminium powder, hydrogen cyanide, alcohol.

COBALT (II) CHLORIDE HEXAHYDRATE

Risk of explosion with: Alkali metals.

10.4. Conditions to avoid

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

10.5. Incompatible materials

HYDROCHLORIC ACID

Incompatible with: alkalis, organic substances, strong oxidants, metals.

10.6. Hazardous decomposition products

HYDROCHLORIC ACID

In decomposition develops: hydrochloric acid fumes.

11. Toxicological information

11.1. Information on toxicological effects

COBALT (II) CHLORIDE HEXAHYDRATE

Acute oral toxicity, absorption, Symptoms: Tremors, Diarrhoea - Acute inhalation toxicity, absorption, Symptoms: Irritation symptoms in the respiratory tract - Acute dermal toxicity, absorption, Skin irritation, Possible damages: slight irritation - Eye irritation, Possible damages: slight irritation - Sensitisation, May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction - CMR effects, Carcinogenicity: May cause cancer by inhalation - Mutagenicity: Suspected of causing genetic defects. Reproductive toxicity: May damage fertility.

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

COBALT (II) CHLORIDE HEXAHYDRATE
LD50 (Oral):

766 mg/kg Rat

SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE DAMAGE / IRRITATION

11. Toxicological information [... / >>](#)

Causes serious eye irritation

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin
Sensitising for the respiratory system

GERM CELL MUTAGENICITY

Suspected of causing genetic defects

CARCINOGENICITY

May cause cancer
Carcinogenicity Assessment:
7647-01-0 HYDROCHLORIC ACID
IARC:3

REPRODUCTIVE TOXICITY

May damage fertility or the unborn child

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

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

This product is dangerous for the environment and is toxic for aquatic organisms. In the long term, it have negative effects on aquatic environment.

12.1. Toxicity

COBALT (II) CHLORIDE HEXAHYDRATE

LC50 - for Fish	1.512 mg/l/96h <i>Oncorhynchus mykiss</i>
EC50 - for Crustacea	6.8 mg/l/48h <i>Ceriodaphnia dubia</i>
EC10 for Algae / Aquatic Plants	0.023 mg/l/72h <i>Pseudokirchnerella subcapitata</i>
Chronic NOEC for Fish	0.739 mg/l <i>Pimephales promelas</i>

12.2. Persistence and degradability

HYDROCHLORIC ACID

Solubility in water > 10000 mg/l
Degradability: information not available

COBALT (II) CHLORIDE HEXAHYDRATE

Solubility in water > 10000 mg/l
Degradability: information not available

12.3. Bioaccumulative potential

Information not available

12. Ecological information ... / >>

12.4. Mobility in soil

Information not available

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

Information not available

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: 3082

ADR / RID: In accordance with Special Provision 375, this product, when is packed in receptacles of a capacity \leq 5Kg or 5L, is not submitted to ADR provisions.

IMDG: In accordance with Section 2.10.2.7 of IMDG Code, this product, when is packed in receptacles of a capacity \leq 5Kg or 5L, is not submitted to IMDG Code provisions.

IATA: In accordance with SP A197, this product, when is packed in receptacles of a capacity \leq 5Kg or 5L, is not submitted to IATA dangerous goods regulations.

14.2. UN proper shipping name

ADR / RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Cobalt II Chloride mixture)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Cobalt II Chloride mixture)

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Cobalt II Chloride mixture)

14.3. Transport hazard class(es)

ADR / RID: Class: 9 Label: 9



IMDG: Class: 9 Label: 9



IATA: Class: 9 Label: 9



14.4. Packing group

ADR / RID, IMDG, IATA: III

14. Transport information ... / >>

14.5. Environmental hazards

ADR / RID: Environmentally Hazardous



IMDG: Marine Pollutant



IATA: Environmentally Hazardous



14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 90	Limited Quantities: 5 L	Tunnel restriction code: (-)
	Special provision: -		
IMDG:	EMS: F-A, S-F	Limited Quantities: 5 L	
IATA:	Cargo:	Maximum quantity: 450 L	Packaging instructions: 964
	Pass.:	Maximum quantity: 450 L	Packaging instructions: 964
	Special provision:	A97, A158, A197	

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 of this product are listed on US Toxic Substances Control Act (TSCA) Inventory or are exempt from the listing / notification requirements.

Clean Air Act Section 112(b):

7647-01-0 HYDROCHLORIC ACID
 7791-13-1 COBALT (II) CHLORIDE HEXAHYDRATE (Cobalt compounds)

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):

7647-01-0 HYDROCHLORIC ACID

EPA List of Lists:

313 Category Code:

7647-01-0 HYDROCHLORIC ACID
 7791-13-1 COBALT (II) CHLORIDE HEXAHYDRATE (Cobalt compounds)

EPCRA 302 EHS TPQ:

No component(s) listed.

15. Regulatory information [... / >>](#)

EPCRA 304 EHS RQ:
No component(s) listed.

CERCLA RQ:
7647-01-0 HYDROCHLORIC ACID

EPCRA 313 TRI:
7647-01-0 HYDROCHLORIC ACID
7791-13-1 COBALT (II) CHLORIDE HEXAHYDRATE (Cobalt compounds)

RCRA Code:
No component(s) listed.

CAA 112 (r) RMP TQ:
7647-01-0 HYDROCHLORIC ACID

State Regulations

Massachusetts:
7647-01-0 HYDROCHLORIC ACID

Minnesota:
7647-01-0 HYDROCHLORIC ACID

New Jersey:
7647-01-0 HYDROCHLORIC ACID
7791-13-1 COBALT (II) CHLORIDE HEXAHYDRATE (Cobalt compounds)

New York:
7647-01-0 HYDROCHLORIC ACID

Pennsylvania:
7647-01-0 HYDROCHLORIC ACID
7791-13-1 COBALT (II) CHLORIDE HEXAHYDRATE (Cobalt compounds)

California:
7647-01-0 HYDROCHLORIC ACID

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 Regulation (EU) 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:

H290	May be corrosive to metals.
H350	May cause cancer.
H341	Suspected of causing genetic defects.
H360	May damage fertility or the unborn child.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

LEGEND:

16. Other information ... / >>

- 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
- ATE: Acute Toxicity Estimate
- CAA 112 © RMP TQ: Risk Management Plan Threshold Quantity (Clean Air Act Section 112©)
- CAS: 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: Regulation (EC) 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
- REACH: Regulation (EC) 1907/2006
- 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: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- 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.

16. Other information [... / >>](#)

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:

03 / 08 / 09 / 11 / 15 / 16.