Safety Data Sheet

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

1. Identification

1.1. Product identifier

Code	**HI93731A-0**
Product name	**Zinc Reagent A**

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

Intended use	**Not available**

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

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

Reproductive toxicity, category 1B	May damage fertility or the unborn child.
Acute toxicity, category 2	Fatal if inhaled.
Acute toxicity, category 3	Toxic if swallowed.
Acute toxicity, category 3	Toxic in contact with skin.
Specific target organ toxicity - single exposure, category 1	Causes damage to organs.
Specific target organ toxicity - repeated exposure, category 1	Causes damage to organs through prolonged or repeated exposure.

Hazard pictograms:

Signal words: Danger

Hazard statements:

H360	May damage fertility or the unborn child.
H330	Fatal if inhaled.
H301+H311	Toxic if swallowed or in contact with skin.
H370	Causes damage to organs.

2. Hazards identification ... / >>

H372 Causes damage to organs through prolonged or repeated exposure.

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.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P311 IF exposed or concerned: Call a POISON CENTER or doctor.
Storage:
P404 Store in a closed container.
Disposal:
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The mixture contains 22.17%;22.17%;22.17% of components of unknown acute oral / inhalation / dermal toxicity.

2.2. Other hazards

Environmental classification as for Reg. (EU) 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, acute toxicity, category 1	Very toxic to aquatic life.
Hazardous to the aquatic environment, chronic toxicity, category 1	Very toxic to aquatic life with long lasting effects.

Hazard pictograms:

Signal words: Warning

Hazard statements:
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:
Prevention:
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Response:
--
Storage:
--
Disposal:
--

Additional hazards
Contact with acids liberates very toxic gas.

3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification:
POTASSIUM TETRABORATE		
CAS *12045-78-2*	62 ≤ x < 64	**Reproductive toxicity, category 2 H361**
EC *215-575-5*		
INDEX		

3. Composition/information on ingredients ... / >>

DIBORON TRIOXIDE

CAS	*1303-86-2*	12.5 ≤ x < 13.5	**Reproductive toxicity, category 1B H360**
EC	*215-125-8*		
INDEX	*005-008-00-8*		

POTASSIUM CYANIDE

CAS	*151-50-8*	2.5 ≤ x < 3	**Substance or mixture corrosive to metals, category 1 H290, Acute toxicity, category 1 H300, Acute toxicity, category 1 H310, Acute toxicity, category 1 H330, Specific target organ toxicity - single exposure, category 1 H370, Specific target organ toxicity - repeated exposure, category 1 H372, Hazardous to the aquatic environment, acute toxicity, category 1 H400 M=10, Hazardous to the aquatic environment, chronic toxicity, category 1 H410 M=10**
EC	*205-792-3*		
INDEX	*006-007-00-5*		

* 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 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.
SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.
INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.
INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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

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

POTASSIUM CYANIDE
Irritant effects, respiratory paralysis, Shortness of breath, Dizziness, Unconsciousness, Nausea, Vomiting, cardiovascular disorders, death.
The following applies to cyanogen compounds/ nitriles in general: utmost caution! Release of hydrocyanic acid is possible - blockade of cellular respiration. Cardiovascular disorders, dyspnoea, unconsciousness.

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. The product is combustible and, when the powder is released into the air in sufficient concentrations and in the presence of a source of ignition, it can create explosive mixtures with air. Fires may start or get worse by leakage of the solid product from the container, when it reaches high temperatures or through contact with sources of ignition.

POTASSIUM CYANIDE
Not combustible. Ambient fire may liberate hazardous vapours. Fire may cause evolution of: Hydrogen cyanide (hydrocyanic acid).

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

If there are no contraindications, spray powder with water to prevent the formation of dust.
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 and place it in containers for recovery or disposal. If there are no contraindications, use jets of water to eliminate product residues.
Make sure the leakage site is well aired. Evaluate the compatibility of the container to be used, by checking section 10. 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) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2018

DIBORON TRIOXIDE

Threshold Limit Value

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

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

POTASSIUM CYANIDE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
OEL	EU	1		5		SKIN
TLV-ACGIH	-			5 (C)	4.7 (C)	SKIN
OSHA	USA	5				SKIN
CAL/OSHA	USA	5				SKIN
NIOSH	USA			5 (C)	4.7 (C)	

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

During the risk assessment process, it is essential to take into consideration the ACGIH occupational exposure levels for inert particulate not otherwise classified (PNOC respirable fraction: 3 mg/m3; PNOC inhalable fraction: 10 mg/m3). For values above these limits, use a P type filter, whose class (1, 2 or 3) must be chosen according to the outcome of risk assessment.

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
In the case of prolonged contact with the product, protect the hands with penetration-resistant work gloves (OSHA 29 CFR 1910.138).
Work glove material must be chosen according to the use process and the products that may form. Latex gloves may cause sensitivity reactions.
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
Use a NIOSH certified filtering facemask (NIOSH 42 CFR 84, OSHA 29 CFR 1910.134) or equivalent device, whose class and effective need, must be defined according to the outcome of risk assessment.
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

Appearance	solid powder
Colour	red
Odour	characteristic
Odour threshold	Not available
pH	8.7 - 9.0 pH, 40g/L
Melting point / freezing point	Not available
Initial boiling point	Not applicable
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	Not available
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

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

Total solids (250°C / 482°F)	100,00 %

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

The powders are potentially explosive when mixed with air.

POTASSIUM CYANIDE
Exothermic reaction with: Fluorine, magnesium. Risk of explosion with: chlorates, nitrites, nitrates, Strong oxidizing agents, permanganates, anhydrides, mercury(II) nitrate, nitrogen trichloride. A risk of explosion and/or of toxic gas formation exists with the following substances: Water, Acids, Hydrogen fluoride, Carbon dioxide (CO_2).

10.4. Conditions to avoid

Avoid environmental dust build-up.

10.5. Incompatible materials

POTASSIUM CYANIDE
Aluminium, Zinc, Tin.

10.6. Hazardous decomposition products

Information not available

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

POTASSIUM CYANIDE
Acute inhalation toxicity, Acute toxicity estimate: 0.051 mg/l; dust/mist, Expert judgement, Symptoms: mucosal irritations, absorption - Acute dermal toxicity, absorption - Eye irritation, rabbit, Result: Eye irritation.

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

POTASSIUM CYANIDE

LD50 (Oral)	5 mg/kg Rat
LD50 (Dermal)	14.3 mg/kg Rabbit
LC50 (Inhalation)	63 ppm/1h Rat

11. Toxicological information ... / >>

DIBORON TRIOXIDE

LD50 (Oral)	> 200 mg/kg Rat
LD50 (Dermal)	> 2000 mg/kg Rabbit
LC50 (Inhalation)	> 2.03 mg/l/4h Rat

POTASSIUM TETRABORATE

LD50 (Oral)	3225 mg/kg Rat
LD50 (Dermal)	> 2000 mg/kg Rat
LC50 (Inhalation)	> 2.04 mg/l/4h Rat

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

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

REPRODUCTIVE TOXICITY

May damage fertility or the unborn child

STOT - SINGLE EXPOSURE

Causes damage to organs

STOT - REPEATED EXPOSURE

Causes damage to organs

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

12. Ecological information

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

12.1. Toxicity

POTASSIUM CYANIDE

LC50 - for Fish	0.025 mg/l/96h
EC50 - for Crustacea	0.05 mg/l/48h Daphnia pulex
EC50 - for Algae / Aquatic Plants	0.05 mg/l/72h
Chronic NOEC for Fish	0.0011 mg/l Lepomis macrochirus

12. Ecological information ... / >>

DIBORON TRIOXIDE

LC50 - for Fish	5600 mg/l/96h Gambusia affinis
Chronic NOEC for Fish	6.4 mg/l Danio rerio

POTASSIUM TETRABORATE

LC50 - for Fish	79.7 mg/l/96h Pimephales promelas
EC50 - for Crustacea	142 mg/l/48h Ceriodaphnia dubia
EC10 for Algae / Aquatic Plants	50 mg/l/72h Phaeodactylum tricornutum
Chronic NOEC for Fish	11.2 mg/l Pimephales promelas
Chronic NOEC for Crustacea	10 mg/l Daphnia magna

12.2. Persistence and degradability

POTASSIUM CYANIDE

Solubility in water	> 10000 mg/l

Degradability: information not available

DIBORON TRIOXIDE

Solubility in water	> 10000 mg/l

POTASSIUM TETRABORATE

Solubility in water	1000 mg/l

12.3. Bioaccumulative potential

POTASSIUM CYANIDE

BCF	3.162

12.4. Mobility in soil

POTASSIUM CYANIDE

Partition coefficient: soil/water	0.3825

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 greater than 0,1%.

12.6. Other adverse effects

POTASSIUM CYANIDE
Additional ecological information, Biological effects: Hazard for drinking water supplies. Forms toxic mixtures in water, dilution measures notwithstanding. Reacts with water to form toxic decomposition products. 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: 1588

14.2. UN proper shipping name

ADR / RID: CYANIDES, INORGANIC, SOLID, N.O.S. MIXTURE
IMDG: CYANIDES, INORGANIC, SOLID, N.O.S. MIXTURE
IATA: CYANIDES, INORGANIC, SOLID, N.O.S. MIXTURE

14.3. Transport hazard class(es)

ADR / RID: Class: 6.1 Label: 6.1

IMDG: Class: 6.1 Label: 6.1

IATA: Class: 6.1 Label: 6.1

14.4. Packing group

ADR / RID, IMDG, IATA: III

14.5. Environmental hazards

ADR / RID: Environmentally Hazardous

IMDG: Marine Pollutant

IATA: NO

For Air transport, environmentally hazardous mark is only mandatory for UN 3077 and UN 3082.

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 60 Special Provision: -	Limited Quantities: 5 kg	Tunnel restriction code: (E)
IMDG:	EMS: F-A, S-A	Limited Quantities: 5 kg	
IATA:	Cargo: Pass.: Special Instructions:	Maximum quantity: 200 Kg Maximum quantity: 100 Kg A3, A13	Packaging instructions: 677 Packaging instructions: 670

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:

15. Regulatory information ... / >>

All components are listed on TSCA Inventory.

Clean Air Act Section 112(b):
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

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:
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

Clean Water Act – Toxic Pollutants:
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

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:
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

EPCRA 302 EHS TPQ:
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

EPCRA 304 EHS RQ:
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

CERCLA RQ:
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

EPCRA 313 TRI:
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

RCRA Code:
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

CAA 112 (r) RMP TQ:
No component(s) listed.

State Regulations

Massachussetts:
1303-86-2 DIBORON TRIOXIDE
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

Minnesota:
1303-86-2 DIBORON TRIOXIDE
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

New Jersey:
1303-86-2 DIBORON TRIOXIDE
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

New York:
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

Pennsylvania:
1303-86-2 DIBORON TRIOXIDE
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

California:
1303-86-2 DIBORON TRIOXIDE
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

15. Regulatory information ... / >>

Proposition 65:
WARNING! This product contains chemicals known to the State of California to cause cancer and birth defects or reproductive harm.
151-50-8 POTASSIUM CYANIDE (Hydrogen cyanide (HCN) and cyanide salts)

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

Candadian WHMIS
Information not available

16. Other information

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

H290	May be corrosive to metals.
H360	May damage fertility or the unborn child.
H361	Suspected of damaging fertility or the unborn child.
H300	Fatal if swallowed.
H310	Fatal in contact with skin.
H330	Fatal if inhaled.
H301+H311	Toxic if swallowed or in contact with skin.
H370	Causes damage to organs.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

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

GENERAL BIBLIOGRAPHY:

16. Other information ... / >>

- 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 Comunication 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
- Massachussetts 105 CMR Department of public health 670.000: "Right to Know"
- Minensota Chapter 5206 Departemnt 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.

Changes to previous review:
The following sections were modified:
04 / 10 / 11 / 12.