

Safety Data Sheet

According to U.S.A. Federal Hazcom 2012

1. Identification

1.1. Product identifier

Code: **A-4TO1**
 Product name: **EPOXART RESIN A-4TO1**

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

Intended use: **LIQUID EPOXY RESINS FOR STONES.**

Identified Uses	Industrial	Professional	Consumer
ADHESIVE SYSTEM/TREATMENT FOR STONE SECTOR	✓	✓	-

1.3. Details of the supplier of the safety data sheet

Name: **TENAX SPA**
 Full address: **Via I Maggio, 226**
 District and Country: **37020 Volargne (VR) Italy**
 Tel.: **+39 045 6887593**
 Fax: **+39 045 6862456**

e-mail address of the competent person responsible for the Safety Data Sheet: **msds@tenax.it**

Supplier: **Tenax Usa**
7606 Whitehall Executive Center Drive Suite 400, 28273 Charlotte NC, US
 Tel. 001 7045831173 - Fax 001 7045833166
info@tenaxusa.com

1.4. Emergency telephone number

For urgent inquiries refer to: **Infotrac**
US and Canada: 1-800-535-5053
Int'l: 1-352-323-3500
info@infotrac.net

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
 Eye irritation, category 2: Causes serious eye irritation.
 Skin irritation, category 2: Causes skin irritation.
 Skin sensitization, category 1: May cause an allergic skin reaction.

Hazard pictograms:



Signal words: **Warning**

Hazard statements:
H319: Causes serious eye irritation.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.

2. Hazards identification ... / >>

Precautionary statements:

Prevention:

- P261** Avoid breathing dust / fume / gas / mist / vapours / spray.
P280 Wear protective gloves / eye protection / face protection.
P264 Wash the hands thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.

Response:

- P305+P351+P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 If skin irritation or rash occurs: Get medical advice / attention.
P337+P313 If eye irritation persists: Get medical advice / attention.
P302+P352 IF ON SKIN: wash with plenty of water / . . .
P362+P364 Take off contaminated clothing and wash it before reuse.
P363 Wash contaminated clothing before reuse.

Storage:

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Disposal:

- P501** Dispose of contents / container according to applicable law.

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:

- P273** Avoid release to the environment.

Response:

- P391** Collect spillage.

Storage:

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Disposal:

- P501** Dispose of contents / container according to applicable law.

Additional hazards

Information not available

3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification

x = Conc. %

Classification:

BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE

CAS 1675-54-3 75 ≤ x < 77

Eye irritation, category 2 H319, Skin irritation, category 2 H315, Skin sensitization, category 1B H317, Hazardous to the aquatic environment, chronic toxicity, category 2 H411

EC 216-823-5
 INDEX 603-073-00-2
 REACH Reg. 01-2119456619-26

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

TRIMETHYLOLPROPANE TRIACRYLATE

CAS 15625-89-5 20 ≤ x < 22

Eye irritation, category 2 H319, Skin irritation, category 2 H315, Skin sensitization, category 1 H317, Hazardous to the aquatic environment, acute toxicity, category 1 H400 M=1, Hazardous to the aquatic environment, chronic toxicity, category 1 H410 M=1

EC 239-701-3
INDEX 607-111-00-9
REACH Reg. 01-2119489896-11

OXIRANE, MONO[(C12-14-ALKYLOXY)METHYL] DERIVS.

CAS 68609-97-2 3.5 ≤ x < 4

Skin irritation, category 2 H315, Skin sensitization, category 1 H317

EC 271-846-8
INDEX 603-103-00-4
REACH Reg. 01-2119485289-22

* 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. Wash immediately with plenty of water. If irritation persists, get medical advice/attention. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. In the event of breathing difficulties, get medical advice/attention immediately.

INGESTION: Get medical advice/attention. Induce vomiting only if indicated by the doctor. Never give anything by mouth to an unconscious person, unless 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.

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

6. Accidental release measures ... / >>

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

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. 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

Information not available

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.

The following should be considered when choosing work glove material (OSHA 29 CFR 1910.138): 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.

HAND PROTECTION: Protect hands with work gloves for protection from chemical agents in nitrile or fluoroelastomer (EN 374-1: 2016) at least type B or higher based on the risk assessment carried out by the company. Breakthrough time > 480 minutes.

Material thickness:

NITRILE

short contact > 0.38 mm

prolonged contact > 0.55 mm

FLUOROELASTOMER

short contact > 0.50 mm

prolonged contact > 1.50 mm

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	liquid	
Colour	colourless	
Odour	odourless	
Odour threshold	not available	
pH	not available	Reason for missing data: substance/mixture is non-polar/aprotic (eg: an organic solvent mixture)
Melting point / freezing point	not available	
Initial boiling point	not available	
Boiling range	not available	
Flash point	160 °C	(320 °F)
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	not available	
Vapour density	not available	
Relative density	1.1 g/cm ³	
Solubility	insoluble in water	
Partition coefficient: n-octanol/water	not available	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
Viscosity	not available	
Explosive properties	not available	
Oxidising properties	not available	

9.2. Other information

VOC : 0,55 % - 6,05 g/litre

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.

10.4. Conditions to avoid

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

10.5. Incompatible materials

BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE

10. Stability and reactivity ... / >>

Avoid contact with: acids,bases,oxidising substances.
 Avoid unintentional contact with amines.

10.6. Hazardous decomposition products

BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE

The decomposition products depend on the temperature, the available air and the presence of other substances.
 An uncontrolled exothermic reaction of epoxy resins liberates phenolic derivatives, carbon monoxide and water.

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

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

TRIMETHYLOLPROPANE TRIACRYLATE

LD50 (Oral):	3680 mg/kg ratto
LD50 (Dermal):	5170 mg/kg coniglio
LC50 (Inhalation vapours):	> 0.55 mg/l/4h ratto

BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE

LD50 (Oral):	11400 mg/kg Ratto
LD50 (Dermal):	2000 mg/kg Ratto

SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

Carcinogenicity Assessment:

1675-54-3 BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE
 IARC:3

11. Toxicological information ... / >>

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

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 acquatic environment.

12.1. Toxicity

TRIMETHYLOLPROPANE TRIACRYLATE

LC50 - for Fish 1.47 mg/l/96h *Leuciscus idus* (*Ido dorato*)

EC50 - for Crustacea 19.9 mg/l/48h *Daphnia magna*

EC50 - for Algae / Aquatic Plants 4.86 mg/l/96h *Desmodesmus subspicatus*

Chronic NOEC for Crustacea 19 mg/l *Daphnia magna*

BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE

LC50 - for Fish 1.3 mg/l/96h

EC50 - for Crustacea 2.1 mg/l/48h *Dafnia*

EC50 - for Algae / Aquatic Plants > 11 mg/l/72h

Chronic NOEC for Crustacea 0.3 mg/l *Dafnia*

12.2. Persistence and degradability

TRIMETHYLOLPROPANE TRIACRYLATE

Solubility in water 100 - 1000 mg/l
Rapidly degradable

BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE

NOT rapidly degradable

12.3. Bioaccumulative potential

TRIMETHYLOLPROPANE TRIACRYLATE

Partition coefficient: n-octanol/water 4.35

BCF 21 Pesci

12.4. Mobility in soil

TRIMETHYLOLPROPANE TRIACRYLATE

12. Ecological information ... / >>

Partition coefficient: soil/water 2.2

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.
(BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE; TRIMETHYLOLPROPANE TRIACRYLATE)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE; TRIMETHYLOLPROPANE TRIACRYLATE)

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(BIS-[4-(2,3-EPOXIPROPOXI)PHENYL]PROPANE; TRIMETHYLOLPROPANE TRIACRYLATE)

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
	Passengers:	Maximum quantity: 450 L	Packaging instructions: 964
	Special provision:	A97, A158, A197, A215	

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):

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:

No component(s) listed.

EPCRA 302 EHS TPQ:

No component(s) listed.

15. Regulatory information ... / >>

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

CERCLA RQ:
 No component(s) listed.

EPCRA 313 TRI:
 No component(s) listed.

RCRA Code:
 No component(s) listed.

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

State Regulations

Massachusetts:
 No component(s) listed.

Minnesota:
 15625-89-5 TRIMETHYLOLPROPANE TRIACRYLATE

New Jersey:
 No component(s) listed.

New York:
 No component(s) listed.

Pennsylvania:
 No component(s) listed.

California:
 No component(s) listed.

Proposition 65:
 This product does not contain any substances know 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:

H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	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
- 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

16. Other information ... / >>

- 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 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.

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.

Safety Data Sheet

According to U.S.A. Federal Hazcom 2012

1. Identification

1.1. Product identifier

Code: **B-4TO1**
Product name: **EPOXART HARDNER B-4TO1**

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

Intended use: **LIQUIDI EPOXY HARDENER**

Identified Uses	Industrial	Professional	Consumer
ADHESIVE SYSTEM/TREATMENT FOR STONE SECTOR	✓	✓	-

1.3. Details of the supplier of the safety data sheet

Name: **TENAX SPA**
Full address: **Via I Maggio, 226**
District and Country: **37020 Volargne (VR) Italy**
Tel.: **+39 045 6887593**
Fax: **+39 045 6862456**

e-mail address of the competent person responsible for the Safety Data Sheet: **msds@tenax.it**

Supplier: **Tenax Usa**
7606 Whitehall Executive Center Drive Suite 400, 28273 Charlotte NC, US
Tel. 001 7045831173 - Fax 001 7045833166
info@tenaxusa.com

1.4. Emergency telephone number

For urgent inquiries refer to: **Infotrac**
US and Canada: 1-800-535-5053
Int'l: 1-352-323-3500
info@infotrac.net

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

Acute toxicity, category 4	Harmful if swallowed.
Acute toxicity, category 4	Harmful if inhaled.
Skin corrosion, category 1	Causes severe skin burns and eye damage.
Serious eye damage, category 1	Causes serious eye damage.
Skin sensitization, category 1	May cause an allergic skin reaction.

Hazard pictograms:



Signal words: **Danger**

Hazard statements: **H302+H332** Harmful if swallowed or if inhaled.

2. Hazards identification ... / >>

H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.

Precautionary statements:

Prevention:

P260 Do not breathe dust / fume / gas / mist / vapours / spray.
P280 Wear protective gloves/ protective clothing / eye protection / face protection.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P264 Wash the hands thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.

Response:

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / shower.
P310 Immediately call a POISON CENTER / doctor if you feel unwell.
P304+P340 IF INHALED: remove person to fresh air and keep comfortable for breathing.
P330 Rinse mouth.
P302+P352 IF ON SKIN: wash with plenty of water / . . .
P301+P312 IF SWALLOWED: Call a POISON CENTER / doctor / . . . / if you feel unwell.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents / container according to applicable law.

The mixture contains 82.00% of components of unknown acute inhalation toxicity.

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 3 Harmful to aquatic life with long lasting effects.

Hazard statements:

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

Prevention:

P273 Avoid release to the environment.

Response:

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Storage:

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Disposal:

P501 Dispose of contents / container according to applicable law.

Information not available

3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification:
1,3-BIS(AMINOMETHYL)CYCLOHEXANE		
CAS 2579-20-6	80 ≤ x < 82	Acute toxicity, category 4 H302, Acute toxicity, category 4 H312, Skin corrosion, category 1A H314, Serious eye damage, category 1 H318, Hazardous to the aquatic environment, chronic toxicity, category 3 H412
BENZYL ALCOHOL		
CAS 100-51-6	16 ≤ x < 17	Acute toxicity, category 4 H302, Acute toxicity, category 4 H332, Eye irritation, category 2 H319
3-AMINOPROPYLTRIETHOXYSILANE		
CAS 919-30-2	0.7 ≤ x < 1	Acute toxicity, category 4 H302, Skin corrosion, category 1B H314, Serious eye damage, category 1 H318, Skin sensitization, category 1 H317

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

TRIS (4-NONYLPHENOL, BRANCHED) PHOSPHITE

CAS $0.1 \leq x < 0.25$

Skin irritation, category 2 H315, Skin sensitization, category 1 H317, Hazardous to the aquatic environment, acute toxicity, category 1 H400 M=1, Hazardous to the aquatic environment, chronic toxicity, category 1 H410 M=1

* 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

In case of doubt or in the presence of symptoms contact a doctor and show him this document.

In case of more severe symptoms, ask for immediate medical aid.

EYES: Remove, if present, contact lenses if the situation allows you to do so easily. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. Get medical advice/attention.

SKIN: Take off immediately all contaminated clothing. Wash immediately and thoroughly with running water (and soap if possible). Get medical advice/attention. Avoid further contact with contaminated clothing.

INGESTION: Do not induce vomiting unless explicitly authorised by a doctor. Rinse your mouth with running water. Do not give anything by mouth to an unconscious person. Get medical advice/attention.

INHALATION: Remove victim to fresh air, away from the accident scene. In the event of respiratory symptoms (coughing, wheezing, breathing difficulty, asthma) keep the victim in a comfortable position for breathing. If necessary administer oxygen. If the subject stops breathing, administer artificial respiration. Get medical advice/attention.

Rescuer protection

It is good practice for rescuers lending support to a person who has been exposed to a chemical substance or to a mixture to wear personal protective equipment. The nature of such protection depends on the hazard level of the substance or mixture, on the type of exposure and on the extent of the contamination. In the absence of other more specific indications, use of disposable gloves in the event of possible contact with body fluids is recommended. For the type of PPE suitable for the characteristics of the substance or mixture, see section 8.

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

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

DELAYED EFFECTS: Based on the information currently available, there are no known cases of delayed effects following exposure to this product.

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

If symptoms occur, whether acute or delayed, consult a doctor.

Means to have available in the workplace for specific and immediate treatment

Running water for skin and eye wash.

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.

1,3-BIS(AMINOMETHYL)CYCLOHEXANE

Nitrogen oxides (NO_x), carbon monoxide (CO), carbon dioxide (CO₂), pyrolysis products.

Combustion products: mainly CO_x and NO_x.

5. Fire-fighting measures ... / >>

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

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. 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

Information not available

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.

The following should be considered when choosing work glove material (OSHA 29 CFR 1910.138): compatibility, degradation, permeability time.

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

8. Exposure controls/personal 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.

HAND PROTECTION: Protect hands with work gloves for protection against chemical agents in nitrile or fluoroelastomer (EN 374-1:2016) at least type B or higher based on the risk assessment carried out by the company. Breakthrough time > 480 minutes.

Material thickness:

NITRILE

short contact > 0.38 mm

prolonged contact > 0.55 mm

FLUOROELASTOMER

short contact > 0.50 mm

prolonged contact > 1.50 mm

FACE PROTECTION: Chemical and splash protection visor EN 166 1B 3 in transparent propionate or equivalent protection

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	liquid	
Colour	colourless	
Odour	amino	
Odour threshold	not available	
pH	10-12	
Melting point / freezing point	not available	
Initial boiling point	not available	
Boiling range	not available	
Flash point	> 93 °C	(199,4 °F)
Evaporation rate	not available	
Flammability	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Vapour pressure	not available	
Vapour density	not available	
Relative density	0.95 g/cm ³	
Solubility	partially 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 available	
Oxidising properties	not available	

9.2. Other information

VOC : 16,50 % - 156,75 g/litre

10. Stability and reactivity

10.1. Reactivity

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

10. Stability and reactivity ... / >>

BENZYL ALCOHOL

Decomposes at temperatures above 870°C/1598°F.Possibility of explosion.

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.

BENZYL ALCOHOL

May react dangerously with: hydrobromic acid,iron,oxidising agents,sulphuric acid.Risk of explosion on contact with: phosphorus trichloride.

10.4. Conditions to avoid

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

1,3-BIS(AMINOMETHYL)CYCLOHEXANE

Avoid exposure to: sources of heat,naked flames,overheated surfaces,ignition sources.

BENZYL ALCOHOL

Avoid exposure to: air,sources of heat,naked flames.

10.5. Incompatible materials

1,3-BIS(AMINOMETHYL)CYCLOHEXANE

acids,reducing agents,oxidising agents.

BENZYL ALCOHOL

Incompatible with: sulphuric acid,oxidising substances,aluminium.

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

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

1,3-BIS(AMINOMETHYL)CYCLOHEXANE

LD50 (Oral): 700 mg/kg ratto
 LD50 (Dermal): 1700 mg/kg coniglio

BENZYL ALCOHOL

LD50 (Oral): 500 mg/kg Rat
 LD50 (Dermal): 2000 mg/kg Rabbit
 LC50 (Inhalation mists/powders): 1.5 mg/l/4h

11. Toxicological information ... / >>

TRIS (4-NONYLPHENOL, BRANCHED) PHOSPHITE
 LD50 (Oral): > 2000 mg/kg ratto
 LD50 (Dermal): > 2000 mg/kg coniglio

3-AMINOPROPYLTRIETHOXYSILANE
 LD50 (Oral): 1490 mg/kg Ratto
 LD50 (Dermal): > 2000 mg/kg Coniglio
 LC50 (Inhalation vapours): > 144 mg/l/6h Ratto

SKIN CORROSION / IRRITATION

Corrosive for the skin
 Classification according to the experimental Ph value

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

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

Does not meet the classification criteria for this hazard class

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 the aquatic organisms. In the long term, it has negative effects on the aquatic environment.

12.1. Toxicity

1,3-BIS(AMINOMETHYL)CYCLOHEXANE

LC50 - for Fish 130 mg/l/96h leuciscus idus
 EC50 - for Crustacea 65.4 mg/l/48h daphnia magna
 EC50 - for Algae / Aquatic Plants 90 mg/l/72h pseudomonas putida
 Chronic NOEC for Algae / Aquatic Plants 14.4 mg/l Pseudokirchneriella subcapitata

BENZYL ALCOHOL

LC50 - for Fish 460 mg/l/96h Pimephales promelas

12. Ecological information ... / >>

EC50 - for Crustacea	230 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	770 mg/l/72h Pseudokirchneriella subcapitata
Chronic NOEC for Crustacea	51 mg/l Daphnia magna
TRIS (4-NONYLPHENOL, BRANCHED) PHOSPHITE	
LC50 - for Fish	7.1 mg/l/96h pesce zebra
EC50 - for Crustacea	0.42 mg/l/48h daphnia magna
LC10 for Fish	44 mg/l/28d
3-AMINOPROPYLTRIETHOXYSILANE	
LC50 - for Fish	> 934 mg/l/96h Brachydanio rerio
EC50 - for Crustacea	331 mg/l/48h Daphnia magna
EC50 - for Algae / Aquatic Plants	> 1000 mg/l/72h Desmodesmus subspicatus
Chronic NOEC for Algae / Aquatic Plants	1.3 mg/l Desmodesmus subspicatus

12.2. Persistence and degradability

1,3-BIS(AMINOMETHYL)CYCLOHEXANE
Degradability: information not available

BENZYL ALCOHOL
Rapidly degradable

3-AMINOPROPYLTRIETHOXYSILANE
NOT rapidly degradable

12.3. Bioaccumulative potential

1,3-BIS(AMINOMETHYL)CYCLOHEXANE
Partition coefficient: n-octanol/water 0.783

BENZYL ALCOHOL
Partition coefficient: n-octanol/water 1.1

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: UN 2735

14.2. UN proper shipping name

ADR / RID: AMINES, LIQUID, CORROSIVE, N.O.S. (1,3-BIS(AMINOMETHYL)CYCLOHEXANE)
IMDG: AMINES, LIQUID, CORROSIVE, N.O.S. (1,3-BIS(AMINOMETHYL)CYCLOHEXANE)
IATA: AMINES, LIQUID, CORROSIVE, N.O.S. (1,3-BIS(AMINOMETHYL)CYCLOHEXANE)

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: II

14.5. Environmental hazards

ADR / RID: NO
IMDG: not marine pollutant
IATA: NO

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 80	Limited Quantities: 1 L	Tunnel restriction code: (E)
	Special provision: 274		
IMDG:	EMS: F-A, S-B	Limited Quantities: 1 L	
IATA:	Cargo:	Maximum quantity: 30 L	Packaging instructions: 855
	Passengers:	Maximum quantity: 1 L	Packaging instructions: 851
	Special provision:	A3, 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

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.

15. Regulatory information ... / >>

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:

No component(s) listed.

EPCRA 302 EHS TPQ:

No component(s) listed.

EPCRA 304 EHS RQ:

No component(s) listed.

CERCLA RQ:

No component(s) listed.

EPCRA 313 TRI:

No component(s) listed.

RCRA Code:

No component(s) listed.

CAA 112 (r) RMP TQ:

No component(s) listed.

State Regulations

Massachussetts:

100-51-6 BENZYL ALCOHOL

Minnesota:

100-51-6 BENZYL ALCOHOL

New Jersey:

No component(s) listed.

New York:

No component(s) listed.

Pennsylvania:

100-51-6 BENZYL ALCOHOL

California:

No component(s) listed.

Proposition 65:

This product does not contain any substances know 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:

H302+H332	Harmful if swallowed or if inhaled.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful 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
- 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

16. Other information ... / >>

- 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"
- 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.

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 / 05 / 09 / 11 / 12 / 14 / 15 / 16.