

Revision nr.2 Dated 12/28/2020 Printed on 12/28/2020 Page n. 1 / 12 Replaced revision:1 (Dated 12/17/2018)

## **Safety Data Sheet**

According to U.S.A. Federal Hazcom 2012

#### 1. Identification

#### 1.1. Product identifier

**SEMISOLIDO 3G COLORATO** Product name Chemical name and synonym Polyester resin with styrene

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

**COLORED POLYESTER FILLER.** 

Identified Uses	Industrial	Professional	Consumer	
ADHESIVE SYSTEM/TREATMENT FOR STONE				
SECTOR	-	$\checkmark$	-	

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

Name Tenax Spa Via I Maggio, 226 Full address 37020 Volargne District and Country

Italy

+39 045 6887593 Tel +39 045 6862456 Fax

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

msds@tenax.it

Product distribution by: **Tenax Usa** 

7606 Whitehall Executive Center Drive Suite 400, 28273 Charlotte NC, US

Tel. 001 7045831173 - Fax 001 7045833166

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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

Flammable liquid, category 3 Carcinogenicity, category 2 Reproductive toxicity, category 2

Specific target organ toxicity - repeated exposure,

category 1

Eye irritation, category 2 Skin irritation, category 2

Specific target organ toxicity - single exposure,

category 3

Flammable liquid and vapour. Suspected of causing cancer.

Suspected of damaging fertility or the unborn child.

Causes damage to organs through prolonged or repeated exposure.

(VR)

Causes serious eye irritation. Causes skin irritation. May cause respiratory irritation.

Hazard pictograms:









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#### 2. Hazards identification

Signal words: Danger

Hazard statements:

H226 Flammable liquid and vapour. H351 Suspected of causing cancer.

**H361** Suspected of damaging fertility or the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

H319 Causes serious eye irritation.
H315 Causes skin irritation.
H335 May cause respiratory irritation.

May dadd respiratory initiation

Precautionary statements:

Prevention:

**P210** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**P260** Do not breathe dust / fume / gas / mist / vapours / spray.

**P202** Do not handle until all safety precautions have been read and understood.

P242 Use only non-sparking tools.

**P201** Obtain special instructions before use.

**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.
P240 Ground / bond container and receiving equipment.
P243 Take precautionary measures against static discharge.

**P241** Use explosion-proof electrical / ventilating / lighting / . . . / equipment.

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.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / shower.

P308+P313 IF exposed or concerned: Get medical advice / attention.
P312 Call a POISON CENTER / doctor / . . . / if you feel unwell.
P332+P313 If skin irritation occurs: Get medical advice / attention.
P337+P313 If eye irritation persists: Get medical advice / attention.

P304+P340 IF INHALED: remove person to fresh air and keep comfortable for breathing.

P302+P352 IF ON SKIN: wash with plenty of water / . .

P362+P364 Take off contaminated clothing and wash it before reuse.
P370+P378 In case of fire: use CO2, sand, powder to extinguish.

Storage:

P403+P235 Store in a well-ventilated place. Keep cool.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

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

#### 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, chronic toxicity, category 4 May cause long lasting harmful effects to aquatic life.

Hazard statements:

**H413** May cause long lasting harmful effects to aquatic life.

Precautionary statements:

Prevention:

**P273** Avoid release to the environment.

Response:

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Storage:

Disposal:

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

Additional hazards Information not available



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## 3. Composition/information on ingredients

#### 3.2. Mixtures

Contains:

x = Conc. % Classification: Identification

STYRENE

100-42-5  $12.5 \le x < 13.5$ Flammable liquid, category 3 H226, Reproductive toxicity, category 2 H361, CAS

> Acute toxicity, category 4 H332, Specific target organ toxicity - repeated exposure, category 1 H372, Aspiration hazard, category 1 H304, Eye irritation, category 2 H319, Skin irritation, category 2 H315, Specific target organ toxicity - single exposure, category 3 H335, Hazardous to the aquatic environment, chronic toxicity,

category 3 H412

FC 202-851-5 INDEX 601-026-00-0 TITANIUM DIOXIDE

*13463-67-7* 0.7 ≤ x < 1 CAS

FC.

INDEX

Carcinogenicity, category 2 H351 236-675-5

\* 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.

## 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

Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.

UNSUITABLE EXTINGUISHING EQUIPMENT

Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

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

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Excess pressure may form in containers exposed to fire at a risk of explosion. 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



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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

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat. 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 cool and well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. 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).

TLV-ACGIH ACGIH 2020



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

STYRENE							
Threshold Limit \	Value						
Туре	Country	TWA/8h		STEL/15r	min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm		
TLV-ACGIH	-	10		20			
OSHA	USA		100		200 (C)		
CAL/OSHA	USA	215	50	425 (C)	500 (C)	SKIN	
NIOSH	USA	215	50	425	100		

				•	TALC		
Threshold Limit	Value						
Type	Country	TWA/8h	STEL/15min		min	Remarks / Observations	
		mg/m3	ppm	mg/m3	ppm		
TLV-ACGIH	-	2					
OSHA	USA		20				
OSHA	USA	30				INHAL	
OSHA	USA	10				RESP	
CAL/OSHA	USA	2				RESP	
NIOSH	USA	2				RESP	

TITANIUM DIOXIDE									
Threshold Limit	Threshold Limit Value								
Type	Country	TWA/8h	TWA/8h		min	Remarks / Observations			
		mg/m3	ppm	mg/m3	ppm				
TLV-ACGIH	-	10							
OSHA	USA	15				INHAL			
CAL/OSHA	USA	10				INHAL			
CAL/OSHA	USA	5				RESP			

#### Legend:

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

#### 8.2. Exposure controls

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

## HAND PROTECTION

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

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

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

#### SKIN PROTECTION

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

Wear airtight protective goggles (OSHA 29 CFR 1910.133).

#### RESPIRATORY PROTECTION

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

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

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

#### **ENVIRONMENTAL EXPOSURE CONTROLS**

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

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

Gloves for chemical protection in nitrile or neoprene EN 374-1: 2016 at least type B or higher based on the risk assessment carried out



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## 9. Physical and chemical properties

## 9.1. Information on basic physical and chemical properties

Properties Value Information

Appearance PASTE
Colour COLOURED
Odour typical
Odour threshold Not available
pH Not available
Melting point / freezing point Not available
Initial boiling point Not available
Boiling range Not available

Flash point 32 °C (89,6 °F)

**Evaporation Rate** Not available Not available Flammability of solids and gases Lower inflammability limit Not available Not available Upper inflammability limit Lower explosive limit Not available Upper explosive limit Not available Vapour pressure Not available Vapour density Not available Relative density 1.75 g/cc insoluble in water Solubility Partition coefficient: n-octanol/water Not available Not available Auto-ignition temperature Decomposition temperature Not available

Viscosity >20,5 mm2/sec (40°C)

Explosive properties Not available Oxidising properties Not available

9.2. Other information

Information not available

## 10. Stability and reactivity

## 10.1. Reactivity

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

STYRENE

Polymerises at temperatures above 65°C/149°F.Fire hazard.Possibility of explosion.

## 10.2. Chemical stability

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

## 10.3. Possibility of hazardous reactions

The vapours may also form explosive mixtures with the air.

STYRENE

May react dangerously with: peroxides, strong acids. May polymerise on contact with: aluminium trichloride, azobisisobutyronitrile, dibenzoyl peroxide, sodium. Risk of explosion on contact with: butyllithium, chlorosulphuric acid, diterbutyl peroxide, oxidising substances, oxygen.

## 10.4. Conditions to avoid

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

STYRENE

Avoid contact with: oxidising substances, copper, strong acids.

## 10.5. Incompatible materials

STYRENE

Incompatible materials: plastic materials.

## 10.6. Hazardous decomposition products

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.



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## 11. Toxicological information

## 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

TITANIUM DIOXIDE

 LD50 (Oral)
 > 5000 mg/kg Ratto

 LD50 (Dermal)
 > 10000 mg/kg Coniglio

 LC50 (Inhalation)
 > 6.82 mg/l/4h Ratto

**STYRENE** 

LD50 (Oral) 5000 mg/kg Rat LC50 (Inhalation) 11.8 mg/l/4h Rat

SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation

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

Suspected of causing cancer

Carcinogenicity Assessment:

100-42-5 STYRENE ACGIH:: A4

ACGIH:: A4 IARC:2B

NTP: Reasonably Anticipated

13463-67-7 TITANIUM DIOXIDE

ACGIH:: A4 IARC:2B

REPRODUCTIVE TOXICITY

Suspected of damaging fertility or the unborn child

STOT - SINGLE EXPOSURE



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

May cause respiratory irritation

STOT - REPEATED EXPOSURE

Causes damage to organs

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class Viscosity: >20,5 mm2/sec (40°C)

## 12. Ecological information

This product may damage the structure and/or the functions of the aquatic ecosystems in the long and/or delayed term.

## 12.1. Toxicity

TITANIUM DIOXIDE

LC50 - for Fish > 1000 mg/l/96h

EC50 - for Crustacea > 1000 mg/l/48h Daphnia

EC50 - for Algae / Aquatic Plants > 61 mg/l/72h Pseudokirchneriella subcapitata

## 12.2. Persistence and degradability

TITANIUM DIOXIDE

Solubility in water < 0.001 mg/l

Degradability: information not available

STYRENE

Solubility in water 320 mg/l

Rapidly degradable

## 12.3. Bioaccumulative potential

**STYRENE** 

Partition coefficient: n-octanol/water 2.96

BCF 74

## 12.4. Mobility in soil

STYRENE

Partition coefficient: soil/water 2.55

#### 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 ≥ than 0,1%.

## 12.6. Other adverse effects

Information not available



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## 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: 1866

The product, if packaged in packages of less than 450 litres, is not subject to ADR regulations as stated in 2.2.3.1.5.

The product, if packaged in packages of less than 30 litres, is not subject to obligations relating to marking, labelling and package testing in accordance with 2.3.2.5 of the IMDG CODE.

#### 14.2. UN proper shipping name

ADR / RID: **RESIN SOLUTION RESIN SOLUTION** IMDG: IATA: **RESIN SOLUTION** 

#### 14.3. Transport hazard class(es)

ADR / RID: Class: 3 Label: 3

IMDG: Class: 3 Lahel: 3

IATA: Class: 3 Label: 3



## 14.4. Packing group

ADR / RID, IMDG, IATA: Ш

#### 14.5. Environmental hazards

ADR / RID: NO NO IMDG: IATA: NO

#### 14.6. Special precautions for user

Limited Quantities: 5 L ADR / RID: HIN - Kemler: 30 Tunnel restriction code: (D/E)

Special Provision: -

. EMS: F-E, <u>S-E</u> IMDG: Limited Quantities: 5 L IATA:

Cargo: Maximum quantity: 220 L Packaging instructions: 366 Maximum quantity: 60 L Packaging instructions: 355 Pass.:

Special Instructions: **A3** 

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

Information not relevant



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## 15. Regulatory information

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

U.S. Federal Regulations

TSCA:

All components are listed on TSCA Inventory.

Clean Air Act Section 112(b): 100-42-5 STYRENE

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:

100-42-5 STYRENE

EPCRA 302 EHS TPQ: No component(s) listed.

EPCRA 304 EHS RQ:

No component(s) listed.

CERCLA RQ:

100-42-5 STYRENE

EPCRA 313 TRI:

100-42-5 STYRENE

RCRA Code:

No component(s) listed.

CAA 112 (r) RMP TQ:

No component(s) listed.

State Regulations

Massachussetts:

100-42-5 STYRENE 14807-96-6 TALC

13463-67-7 TITANIUM DIOXIDE (Titanium dioxide (airborne, unbound particles of respirable size))

7631-86-9 AMORPHOUS SILICATE HYDRATE

Minnesota:

100-42-5 STYRENE 14807-96-6 TALC

13463-67-7 TITANIUM DIOXIDE (Titanium dioxide (airborne, unbound particles of respirable size))

7631-86-9 AMORPHOUS SILICATE HYDRATE



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## 15. Regulatory information

New Jersey:

STYRENE 100-42-5 14807-96-6 **TALC** 

13463-67-7 TITANIUM DIOXIDE (Titanium dioxide (airborne, unbound particles of respirable size))

New York:

100-42-5 STYRENE

Pennsylvania:

STYRENE 100-42-5

13463-67-7 TITANIUM DIOXIDE (Titanium dioxide (airborne, unbound particles of respirable size))

7631-86-9 AMORPHOUS SILICATE HYDRATE

California:

STYRENE 100-42-5 14807-96-6 TALC:

AMORPHOUS SILICATE HYDRATE 7631-86-9

Proposition 65:

WARNING! This product contains chemicals known to the State of California to cause cancer and birth defects or reproductive harm.

100-42-5 STYRENE C

13463-67-7 TITANIUM DIOXIDE C (Titanium dioxide (airborne, unbound particles of respirable size))

28553-12-0 DIISONONYL PHTHALATE (Diisononyl phthalate (DINP))

International Regulations

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

None

Substances subject to the Rotterdam Convention:

Substances subject to the Stockholm Convention:

None

## 16. Other information

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

H226 Flammable liquid and vapour. H351 Suspected of causing cancer.

H361 Suspected of damaging fertility or the unborn child.

H332 Harmful if inhaled.

H372 Causes damage to organs through prolonged or repeated exposure.

H304 May be fatal if swallowed and enters airways.

H319 Causes serious eve irritation. H315 Causes skin irritation. H335 May cause respiratory irritation.

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
- 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%



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#### 16. Other information

- 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:

- 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.

#### 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 / 08 / 11 / 12.