



# Tenax Spa

## CRYSTAL LIQUID

Revision nr.21  
Dated 09/05/2011  
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## Safety Data Sheet

### 1. Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product name **CRYSTAL LIQUID**  
Chemical name and synonym **Polyester resin in solution**

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

Intended use **Polyester glue for marble**

#### 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 Italy (VR)**  
Tel. **+39 045 6887593**  
Fax **+39 045 6862456**

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

Product distribution by **TENAX USA 1408 Center Park Drive, 28217 Charlotte Tel. 001 704 583 1173 Fax 001 704 583 3166 info@tenaxusa.com**

#### 1.4. Emergency telephone number

For urgent inquiries refer to **1-800-5355053 (1-352-323-3500 international)**

### 2. Hazards identification.

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

The product is classified as hazardous pursuant to the provisions set forth in Directives 67/548/EEC and 1999/45/EC and/or EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of EC Regulation 1907/2006 and subsequent amendments. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Danger Symbols: Xn

R phrases: 10-20-36/38

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

#### 2.2. Label elements.

Hazard labelling pursuant to Directives 67/548/EEC and 1999/45/EC and subsequent amendments and supplements.

Xn



HARMFUL

**R10** FLAMMABLE.  
**R20** HARMFUL BY INHALATION.  
**R36/38** IRRITATING TO EYES AND SKIN.

**S 9** KEEP CONTAINER IN A WELL-VENTILATED PLACE.  
**S25** AVOID CONTACT WITH EYES.  
**S26** IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.  
**S37** WEAR SUITABLE GLOVES.  
**S43** IN CASE OF FIRE USE DUST, CARBON DIOXIDE, FOAM, SPRAYED WATER. DO NOT USE WATER DIRECTLY.



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Contains: STYRENE

### 2.3. Other hazards.

Information not available.

### 3. Composition/information on ingredients.

#### 3.1. Substances.

Information not relevant.

#### 3.2. Mixtures.

Contains:

Identification.	Conc. %.	Classification 67/548/EEC.	Classification 1272/2008 (CLP).
<b>STYRENE</b>			
CAS. 100-42-5	20 - 30	R10, Xn R20, Xi R36/38, Note D	Fam. Liq. 3 H226, Acute Tox. 4 H332, Eye Irrit. 2 H319,
EC. 202-851-5			Skin Irrit. 2 H315, Note D
INDEX. 601-026-00-0			
Reg. no. 01-2119457861-32			

T+ = Very Toxic(T+), T = Toxic(T), Xn = Harmful(Xn), C = Corrosive(C), Xi = Irritant(Xi), O = Oxidizing(O), E = Explosive(E), F+ = Extremely Flammable(F+), F = Highly Flammable(F), N = Dangerous for the Environment(N)

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

### 4. First aid measures.

#### 4.1. Description of first aid measures.

EYES: Irrigate copiously with clean, fresh water for at least 15 minutes. Seek medical advice.

SKIN: Wash immediately with plenty of water. Remove contaminated clothing. If irritation persists, seek medical attention. Wash contaminated clothing before using them again.

INHALATION: Remove to open air. If breathing is irregular, seek medical advice.

INGESTION: Obtain immediate medical attention. Induce vomiting only if indicated by the doctor. Never give anything by mouth to an unconscious person.

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

For symptoms and effects caused by the contained substances see chap. 11.

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

Follow doctor's orders.

### 5. Firefighting measures.

#### 5.1. Extinguishing media.

SUITABLE EXTINGUISHING MEDIA

The extinction equipment should contain carbon dioxide, foam or chemical powders. For product leaks and spills that have not caught fire, nebulised water can be used to dispel flammable fumes and protect the individuals taking part in stemming the leak.

EXTINGUISHING MEDIA WHICH SHALL NOT BE USED FOR SAFETY REASONS

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 (carbon oxide, toxic pyrolysis products, etc).

#### 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 and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Hardhat with visor, fireproof clothing (fireproof jacket and trousers with ties around arms, legs and waist) work gloves (fireproof, cut proof and dielectric), self-respirator (self-protector).



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### 6. Accidental release measures.

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

Eliminate sources of ignition (cigarettes, flames, sparks, etc.) from the air in which the leak occurred. If there are no contraindications, spray solid products with water to prevent the formation of dust. Use breathing equipment if fumes or powders are released into the air. Block the leakage if there is no hazard. Do not handle damaged containers or leaked product before donning appropriate protective gear. Send away individuals who are not suitably equipped. For information on risks for the environmental and health, respiratory tract protection, ventilation and personal protection equipment, refer to the other sections of this sheet.

#### 6.2. Environmental precautions.

The product must not penetrate the sewers, surface water, ground water and neighbouring areas.

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

For liquid products, suck into a suitable container (made of material not incompatible with the product) and soak up any leaked product with absorbent inert material (sand, vermiculite, diatomaceous earth, Kieselguhr, etc). Collect the majority of the remaining material and deposit in containers for disposal. For solid products, use spark proof mechanical tools to collect the leaked product and place in plastic containers. If there are no contraindications, use jets of water to eliminate product residues. 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.

Do not smoke while handling and use.

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

Store in a well ventilated place, keep far away from sources of heat, bright flames and sparks and other sources of ignition.

#### 7.3. Specific end use(s).

Information not available.

### 8. Exposure controls/personal protection.

#### 8.1. Control parameters.

Name	Type	Country	TWA/8h mg/m <sup>3</sup>	ppm	STEL/15min mg/m <sup>3</sup>	ppm	
STYRENE	TLV-ACGIH			20		40	Skin
	OEL	IRL		20		40	Skin
	WEL	UK		100		250	Skin

#### 8.2. Exposure controls.

As the use of adequate technical equipment must always take priority over personal protection equipment, make sure that the workplace is well aired through effective local aspiration or bad air vent. If such operations do not make it possible to keep the concentration of the product below the permitted workplace exposure thresholds a suitable respiratory tract protection must be used. See product label for hazard details during use. Ask your chemical substance suppliers for advice when choosing personal protection equipment. Personal protection equipment must comply with the rules in force indicated below.

##### HAND PROTECTION

Protect hands with category II (ref. Directive 89/686/EEC and standard EN 374) work gloves, such as those in PVC, neoprene, nitril or equivalent. The following should be considered when choosing work glove material: degradation, breakage times and permeation. Work glove resistance to preparations should be checked before use, as it can be unpredictable. Gloves' limit depends on the duration of exposure.

##### EYE PROTECTION

Wear protective airtight goggles (ref. standard EN 166).

##### SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (ref. Directive 89/686/CEE and standard EN 344). Wash body with soap and water after removing overalls.

##### RESPIRATORY PROTECTION

If the threshold value for one or more of the substances present in the preparation for daily exposure in the workplace or to a fraction established by the company's prevention and protection service is exceeded, wear a mask with an A or universal filter, the class (1, 2 or 3) of which must be chosen according to the limit concentration of use (ref. standard EN 141).

The use of breathing protection equipment, such as masks with organic vapour and dust/mist cartridges, is necessary in the absence of technical measures limiting worker exposure. The protection provided by masks is in any case limited.



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If the substance in question is odourless or its olfactory threshold is higher than the relative exposure limit and in the event of an emergency, or when exposure levels are unknown or the concentration of oxygen in the workplace is less than 17% volume, wear self-contained, open-circuit compressed air breathing apparatus (ref. standard EN 137) or fresh air hose breathing apparatus for use with full face mask, half mask or mouthpiece (ref. standard EN 138).

### 9. Physical and chemical properties.

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

Appearance	liquid
Colour	transparent
Odour	typical
Odour threshold.	Not available.
pH.	Not available.
Melting or freezing point.	Not available.
Boiling point.	Not available.
Distillation range.	Not available.
Flash point.	32 °C.
Evaporation Rate	Not available.
Flammability of solids and gases	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.
Specific gravity.	1,100 Kg/l
Solubility	insoluble in water
Partition coefficient: n-octanol/water	Not available.
Ignition temperature.	Not available.
Decomposition temperature.	Not available.
Viscosity	Not available.
Reactive Properties	Not available.

#### 9.2. Other information.

VOC (Directive 1999/13/EC) :	21,85 % - 240,37	g/litre.
VOC (volatile carbon) :	20,14 % - 221,56	g/litre.

### 10. Stability and reactivity.

#### 10.1. Reactivity.

The product can decompose and/or violently react.

STYRENE: polymerises readily above 65°C with risk of fire and explosion; added with an inhibitor that requires a small amount of dissolved oxygen at temperatures <25°C.

#### 10.2. Chemical stability.

See previous paragraph.

#### 10.3. Possibility of hazardous reactions.

See paragraph 10.1.

STYRENE: can react dangerously with peroxides and strong acids. May polymerise on contact with: aluminium trichloride, azobisisobutyronitrile, dibenzoyl peroxide, sodium. Risk of explosion on contact with: butyllithium, chlorosulphuric acid, di-tert-butyl peroxide, oxidising agents, oxygen.

#### 10.4. Conditions to avoid.

As the product decomposes even at ambient temperature, it must be stored and used at a controlled temperature. Avoid violent blows.

#### 10.5. Incompatible materials.

STYRENE: avoid oxidising agents, copper and strong acids; it dissolves various types of plastic materials, but not polychloroprene and polyvinyl alcohol.

#### 10.6. Hazardous decomposition products.

Information not available.

### 11. Toxicological information.

#### 11.1. Information on toxicological effects.

Acute effects: inhalation of this product is harmful. This product may irritate mucosae, the upper respiratory tract, eyes and skin.

Exposure symptoms may include: stinging and irritated eyes, mouth, nose, throat; cough, respiratory disorders, dizziness, headache, nausea and sickness.

In the most serious cases, inhalation of this product may cause larynx and bronchial tube edema and irritation, chemical pneumonia and pulmonary edema. Ingestion of even small amounts of product may cause health problems (stomach pain, nausea, sickness, diarrhoea).



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STYRENE: Acute toxicity following inhalation at 1000 ppm involves the central nervous system with headache and dizziness, lack of coordination; irritation of the mucous membranes of the eyes and respiratory tract occurs at 500 ppm concentrations. Chronic exposure produces depression of the Central and peripheral nervous system with loss of memory, headache and somnolence starting at 20 ppm; digestive disorders with nausea and loss of appetite; irritation of the respiratory tract with chronic bronchitis and dermatosis.

STYRENE

LD50 (Oral): 5000 mg/kg Rat

LC50 (Inhalation): 11,8 mg/l/4h Rat

## 12. Ecological information.

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

### 12.1. Toxicity.

Information not available.

### 12.2. Persistence and degradability.

STYRENE: easily biodegradable.

### 12.3. Bioaccumulative potential.

STYRENE: no appreciable bioaccumulation potential (log Ko/w 1-3).

### 12.4. Mobility in soil.

STYRENE: slightly mobile in soil.

### 12.5. Results of PBT and vPvB assessment.

Information not available.

### 12.6. Other adverse effects.

Information not available.

## 13. Disposal considerations.

### 13.1. Waste treatment methods.

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

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.

These goods must be transported by vehicles authorized to the carriage of dangerous goods according to the provisions set out in the current edition of the Code of International Carriage of Dangerous Goods by Road (ADR) and in all the applicable national regulations.

These goods must be packed in their original packagings or in packagings made of materials resistant to their content and not reacting dangerously with it. People loading and unloading dangerous goods must be trained on all the risks deriving from these substances and on all actions that must be taken in case of emergency situations.

### Road and rail transport:

ADR/RID Class:	3	UN:	1866
Packing Group:	III		
Label:	3		
Nr. Kemler:	30		
Limited Quantity:	5 lt		
Tunnel restriction code:	(D/E)		
Proper Shipping Name:	RESIN SOLUTION		
Special Provision:	640E		



### Carriage by sea (shipping):

IMO Class:	3	UN:	1866
Packing Group:	III		
Label:	3		
EMS:	F-E		S-E
Marine Pollutant:	NO		
Proper Shipping Name:	RESIN SOLUTION		






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### Transport by air:

IATA:	3	UN:	1866	
Packing Group:	III			
Label:	3			
Cargo:				
Packaging instructions:	366	Maximum quantity:	220 L	
Pass.:				
Packaging instructions:	355	Maximum quantity:	60 L	
Special Instructions:	A3			
Proper Shipping Name:	RESIN SOLUTION			

## 15. Regulatory information.

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

Seveso category. 6

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006.

Product. \_\_\_\_\_  
Point. 3 - 40

Substances in Candidate List (Art. 59 REACH).

None.

Substances subject to authorisation (Annex XIV REACH).

None.

Healthcare controls.

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

D.Lgs. 152/2006 e successive modifiche

Emissioni:  
TAB. D Classe 3 21,85 %

### 15.2. Chemical safety assessment.

No chemical safety assessment has been processed for the mixture and the substances it contains.

## 16. Other information.

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

<b>Flam. Liq. 3</b>	Flammable liquid, category 3
<b>Acute Tox. 4</b>	Acute toxicity, category 4
<b>Eye Irrit. 2</b>	Eye irritation, category 2
<b>Skin Irrit. 2</b>	Skin irritation, category 2
<b>H226</b>	Flammable liquid and vapour.
<b>H332</b>	Harmful if inhaled.
<b>H319</b>	Causes serious eye irritation.
<b>H315</b>	Causes skin irritation.

Text of risk (R) phrases mentioned in section 2-3 of the sheet:

<b>R10</b>	FLAMMABLE.
<b>R20</b>	HARMFUL BY INHALATION.
<b>R36/38</b>	IRRITATING TO EYES AND SKIN.

### GENERAL BIBLIOGRAPHY

1. Directive 1999/45/EC and following amendments
2. Directive 67/548/EEC and following amendments and adjustments
3. Regulation (EC) 1907/2006 (REACH) of the European Parliament
4. Regulation (EC) 1272/2008 (CLP) of the European Parliament
5. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
6. Regulation (EC) 453/2010 of the European Parliament
7. The Merck Index. - 10th Edition



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- 8. Handling Chemical Safety
- 9. Niosh - Registry of Toxic Effects of Chemical Substances
- 10. INRS - Fiche Toxicologique (toxicological sheet)
- 11. Patty - Industrial Hygiene and Toxicology
- 12. N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition

#### 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.

#### Changes to previous review:

The following sections were modified:

01.