

## Safety Data Sheet

According to Annex II to REACH - Regulation 2015/830

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

#### 1.1. Product identifier

Code: DRAP126  
Product name: ARMOFIX MTL COMP. A

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

Intended use: Resina epossidica bicomponente - comp A

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

Name: DRACO ITALIANA S.p.A.  
Full address: Via Monte Grappa, 11 D-E  
District and Country: 20067 Tribiano (MI)  
Italia  
Tel. +39 02.90632917  
Fax +39 02.90631976  
e-mail address of the competent person responsible for the Safety Data Sheet: info@draco-edilizia.it

#### 1.4. Emergency telephone number

For urgent inquiries refer to:  
Centro Antiveleni di Bergamo 800883300 (Azienda Ospedaliera Papa Giovanni XXII)  
Centro Antiveleni di Firenze 0557947819 (Az. Osp. "Careggi" U.O. Tossicologia Medica)  
Centro Antiveleni di Foggia 80018345 (Az. Osp. Univ. Foggia)  
Centro Antiveleni di Milano 0266101029 (Osp. Niguarda Ca' Granda)  
Centro Antiveleni di Napoli 0817472870 (Az. Osp. "A. Cardarelli")  
Centro Antiveleni di Pavia 038224444 (CAV Centro Nazionale di Informazione Tossicologica)  
Centro Antiveleni di Roma 063054343 (CAV Policlinico "A. Gemelli")  
Centro Antiveleni di Roma 0649978000 (CAV Policlinico "Umberto I")  
Centro Antiveleni di Roma 06 68593726 (CAV "Osp. Pediatrico Bambino Gesù" Dip. Emergenza e Accettazione DEA)

### SECTION 2. Hazards identification

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

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2015/830. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Specific target organ toxicity - repeated exposure, category 2	H373	May cause damage to organs through prolonged or repeated exposure.
Eye irritation, category 2	H319	Causes serious eye irritation.
Skin irritation, category 2	H315	Causes skin irritation.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.
Hazardous to the aquatic environment, chronic toxicity, category 2	H411	Toxic to aquatic life with long lasting effects.

#### 2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:



DRACO ITALIANA S.p.A.

DRAP126 - ARMOFIX MTL COMP. A

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Replaced revision:7 (Dated 09/06/2021)

EN

SECTION 2. Hazards identification ... / >>

Signal words:

Warning

Hazard statements:

H373

May cause damage to organs through prolonged or repeated exposure.

H319

Causes serious eye irritation.

H315

Causes skin irritation.

H317

May cause an allergic skin reaction.

H411

Toxic to aquatic life with long lasting effects.

EUH205

Contains epoxy constituents. May produce an allergic reaction.

Precautionary statements:

P280

Wear protective gloves / eye protection / face protection.

P273

Avoid release to the environment.

P391

Collect spillage.

P261

Avoid breathing dust / fume / gas / mist / vapours / spray.

P333+P313

If skin irritation or rash occurs: Get medical advice / attention.

P337+P313

If eye irritation persists: Get medical advice / attention.

Contains:

Crystalline silica

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)

Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives

2,2-bis-[4-(2,3-epoxipropoxy)phenyl]propane

Phenol, polymer with formaldehyde, glycidyl ether

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage ≥ than 0,1%.

SECTION 3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
<b>Quartz</b>		
CAS	14808-60-7	30 ≤ x < 50 <b>Substance with a community workplace exposure limit.</b>
EC	238-878-4	
INDEX		
<b>Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight &lt;= 700)</b>		
CAS	9003-36-5	10 ≤ x < 25 <b>Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411</b>
EC	500-006-8	
INDEX		
Reg. no.	01-2119454392-40-XXXX	
<b>2,2-bis-[4-(2,3-epoxipropoxy)phenyl]propane</b>		
CAS	1675-54-3	10 ≤ x < 25 <b>Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411</b>
EC	216-823-5	
INDEX		
Reg. no.	01-2119456619-26-XXXX	
<b>Crystalline silica</b>		
CAS	14808-60-7	5 ≤ x < 9 <b>STOT RE 1 H372</b>
EC	238-878-4	
INDEX		
Reg. no.	Exempt Annex V	
<b>Phenol, polymer with formaldehyde, glycidyl ether</b>		
CAS	28064-14-4	2,5 ≤ x < 5 <b>Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411</b>
EC		
INDEX		
Reg. no.	Polymer	
<b>Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives</b>		
CAS	68609-97-2	1 ≤ x < 5 <b>Skin Irrit. 2 H315, Skin Sens. 1 H317</b>
EC	271-846-8	
INDEX	603-103-00-4	
Reg. no.	01 2119485289-22-XXXX	

EPY 10.5.2 - SDS 1004.1

## DRAP126 - ARMOFIX MTL COMP. A

## SECTION 3. Composition/information on ingredients ... / &gt;&gt;

**Phosphoric acid**

CAS	7664-38-2	$0 \leq x < 0,5$	<b>Skin Corr. 1B H314, Eye Dam. 1 H318</b>
EC	231-633-2		
INDEX	015-011-00-6		
Reg. no.	01-2119485924-24-XXXX		

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

**Quartz**

The substance Quarzo (CAS 14808-60-7), present as such or as part of a mineral filler, is not classified by the supplier as dangerous. However, the supplier declares a percentage of Alpha Quartz (crystalline silica) lower than 1%. The supplier then classifies the Alpha quartz (crystalline silica) as H372 (STOT RE 1). In order to allow a safe use of the mixture, useful information is reported for completeness both to check personal exposure (section 8) and toxicological information (section 11) regarding Quarzo alfa (crystalline silica).

## SECTION 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.

Phenol, polymer with formaldehyde, glycidyl ether

General information:

Remove the injured person from the danger area.

Show this safety data sheet to the attending physician.

Treat symptomatically.

Get medical attention if symptoms occur.

If inhaled:

if inhaled, take to fresh air.

Get medical attention if symptoms occur.

In case of skin contact:

if skin irritation persists, call a doctor.

If in contact with the skin, rinse well with water.

If it gets on your clothing, remove the clothing.

In case of eye contact:

immediately rinse your eyes with plenty of water.

Remove contact lenses.

Rinse with the eye wide open.

If eye irritation persists, consult a physician.

If ingested:

rinse your mouth with water.

Keep the respiratory tract clean.

Do not give anything to an unconscious person.

If symptoms persist, consult 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

## SECTION 5. Firefighting measures

## 5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT

**DRAP126 - ARMOFIX MTL COMP. A****SECTION 5. Firefighting measures ... / >>**

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray. UNSUITABLE

**EXTINGUISHING EQUIPMENT**

None in particular.

Phosphoric acid

CO<sub>2</sub>, dust or water spray. Extinguish large fires with water spray or alcohol resistant foam.

**5.2. Special hazards arising from the substance or mixture****HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE**

Do not breathe combustion products.

Phosphoric acid

Hazardous combustion products: phosphorus oxides.

Combustion produces heavy smoke.

Do not inhale explosion and combustion gases.

**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).

**SECTION 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.

**SECTION 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.

Phenol, polymer with formaldehyde, glycidyl ether

Do not breathe vapors and dust.

Avoid exposure (obtain special instructions before use).

Avoid contact with eyes and skin.

See Section 8 for personal protective equipment.

Do not eat, drink and smoke while working.

Dispose of the washing water according to national and local regulations.

**DRAP126 - ARMOFIX MTL COMP. A****SECTION 7. Handling and storage ... / >>**

People who are susceptible to skin sensitization or asthma problems, allergies, chronic or recurrent respiratory diseases, should not be employed in any process in which this product is used.

Phosphoric acid

Use only suitable materials for transport, storage and handling.

Avoid contact with skin and eyes, inhalation of vapors, mist or dust.

Do not use empty containers before they have been cleaned.

Before transfer operations, make sure that there are no incompatible residual materials in the containers.

Provide for industrial hygiene measures.

**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.

Phosphoric acid

Keep packaging tightly closed

Keep away from food, drink and feed.

Incompatible materials: alkalis, reducing agents, metals (see also Section 10).

Suitable packaging materials: stainless steel, polyolefin.

Ensure good ventilation.

Storage class: 8B Deposit class (TRGS 510): 8B

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

Information not available

**SECTION 8. Exposure controls/personal protection****8.1. Control parameters**

Regulatory References:

FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Fourth Edition 2020)
EU	OEL EU	Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 98/24/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2020

**Quartz****Threshold Limit Value**

Type	Country	TWA/8h	STEL/15min	Remarks / Observations
		mg/m3	ppm	
VLEP	FRA	0,1		RESP
WEL	GBR	0,1		RESP
OEL	EU	0,1		INHAL Quarzo alfa (Dir. 2017/2398)
TLV-ACGIH		3		Polveri tot. fraz. respirabile
TLV-ACGIH		10		INHAL Polveri tot. fraz. inalabile
TLV-ACGIH		0,025		RESP Quarzo alfa

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## SECTION 8. Exposure controls/personal protection ... / &gt;&gt;

## Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight &lt;= 700)

## Predicted no-effect concentration - PNEC

Normal value in fresh water	0,003	mg/l
Normal value in marine water	0,0003	mg/l
Normal value for fresh water sediment	0,294	mg/kg/d
Normal value for marine water sediment	0,0294	mg/kg/d
Normal value for water, intermittent release	0,0254	mg/l
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	0,237	mg/kg/d

## Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Chronic local	Chronic systemic	Effects on workers			
	Acute local	Acute systemic			Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				6,25 mg/kg bw/d				
Inhalation				8,7 mg/m3				29,39 mg/m3
Skin				62,5 mg/kg bw/d		8,3 µg/cm2		104,15 mg/kg bw/d

## 2,2-bis-[4-(2,3-epoxipropoxi)phenyl]propane

## Predicted no-effect concentration - PNEC

Normal value in fresh water	0,006	mg/l
Normal value in marine water	0,001	mg/l
Normal value for fresh water sediment	0,341	mg/kg
Normal value for marine water sediment	0,034	mg/kg
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	0,065	mg/kg/d

## Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Chronic local	Chronic systemic	Effects on workers			
	Acute local	Acute systemic			Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				0,5 mg/kg bw/d				
Inhalation				0,87 mg/m3				4,93 mg/m3
Skin				89,3 µg/kg				0,75 mg/kg bw/d

## Crystalline silica

## Threshold Limit Value

Type	Country	TWA/8h mg/m3	ppm	STEL/15min mg/m3	ppm	Remarks / Observations	
WEL	GBR	0,1				RESP	
OEL	EU	0,1				RESP	Direttiva (UE) 2017/2398
TLV-ACGIH		3					Polveri tot. fraz. respirabile
TLV-ACGIH		10				INHAL	
TLV-ACGIH		0,025				RESP	fbrp, cnrc (plmn)

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## SECTION 8. Exposure controls/personal protection ... / &gt;&gt;

## Phosphoric acid

## Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations		
		mg/m3	ppm	mg/m3	ppm			
VLEP	ITA	1		2				
WEL	GBR	1		2				
OEL	EU	1		2				
TLV-ACGIH		1		3		SKIN		

## Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute	Acute	Chronic	Chronic	Acute	Acute	Chronic	Chronic
	local	systemic	local	systemic	local	systemic	local	systemic
Inhalation			0,73 mg/m3		2 mg/m3		1 mg/m3	

## Legend:

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

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

## Quartz

Respect the legal exposure limits in the workplace for any type of airborne dust (eg total dust, respirable dust, respirable crystalline silica powder).

In Europe, the binding LEP (occupational exposure limit) for respirable crystalline silica dust has been set by Directive (EU) 2017/2398 to 0.1 mg / m3, measured as TWA (Time Weighted Average, time-weighted average concentration ) over 8 hours.

## Crystalline silica

Directive (EU) 2017/2398 sets an occupational exposure limit value equal to 0.1 mg / m3 and includes among the processes that involve risks of exposure to carcinogens "the works involving exposure to respirable crystalline silica dust generated by a process of processing ".

The problem of exposure to Free Crystalline Silica (SLC) in the workplace is particularly relevant, as this risk agent is present in numerous work activities. SLC is in fact extremely common in nature and used in a wide range of civil and industrial products. The International Agency for Research on Cancer classified it as a certain carcinogen (group 1) already in 1997, re-evaluated its toxicity data in 2010 confirming its carcinogenicity (Volume 100, part C, IARC Monograph). Source: www.dors.it

## Phosphoric acid

The toxicity of phosphoric acid is linked to its acidic nature. A generic PNEC (water) cannot be derived as the effects are highly dependent on the pH of the receiving waters and its repelling ability is highly variable.

## 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.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

Exposure levels must be kept as low as possible to avoid significant build-up in the organism. Manage personal protective equipment so as to guarantee maximum protection (e.g. reduction in replacement times).

## HAND PROTECTION

Protect hands with category III work gloves (see standard EN 374).

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 II professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

## EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

## RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). 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 (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

## ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure

**DRAP126 - ARMOFIX MTL COMP. A****SECTION 8. Exposure controls/personal protection ... / >>**

compliance with environmental standards.

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

**Quartz**

In case of prolonged exposure to airborne dust concentrations, wear a respiratory protection device that meets the requirements of European or national legislation. The use of partial or complete facial masks with filters against particles of category 2 or 3 (FP2 - FP3) is recommended. See EN 143: 2000 - Respiratory protective devices. Particles filters

Phenol, polymer with formaldehyde, glycidyl ether

Guanti:

Gomma butilica

Tempo di permeazione > 8 h

Gomma nitrilica

Tempo di permeazione: 10 - 480 min

Phosphoric acid

Suitable respirator: use protective mask with ABEK-P2 filter.

**SECTION 9. Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Properties	Value	Information
Appearance	liquid	
Colour	grey	
Odour	characteristic	
Odour threshold	Not available	
pH	8	
Melting point / freezing point	Not available	
Initial boiling point	Not available	
Boiling range	Not available	
Flash point	> 60 °C	
Evaporation rate	Not available	
Flammability (solid, gas)	Not available	
Lower inflammability limit	Not available	
Upper inflammability limit	Not available	
Lower explosive limit	Not available	
Upper explosive limit	Not available	
Vapour pressure	Not available	
Vapour density	Not available	
Relative density	1,65 g/cm <sup>3</sup>	
Solubility	partially soluble in water	
Partition coefficient: n-octanol/water	Not determined	
Auto-ignition temperature	Not available	
Decomposition temperature	Not available	
Viscosity	Not available	
Explosive properties	Not available	
Oxidising properties	Not available	

**9.2. Other information**

Information not available

**SECTION 10. Stability and reactivity****10.1. Reactivity**

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

**Phosphoric acid**

It can give violent reaction. In contact with water an exothermic reaction may occur. In contact with reactive metals (mild steel, aluminum, etc.) hydrogen (explosive) may develop. Reaction with reducing agents.



**DRAP126 - ARMOFIX MTL COMP. A****SECTION 10. Stability and reactivity ... / >>****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.

**Phosphoric acid**

When mixing with water, do not allow the mixture to reach too high temperatures. Add the acid in water slowly and with simultaneous stirring.

Dangerous reactions with metals (formation of hydrogen), alkalis (alkaline solutions), reducing agents, ammonia, fluorine, sulfur trioxide, phosphorus pentoxide.

**10.4. Conditions to avoid**

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

**Phosphoric acid**

Avoid exposing the product to high temperatures

**10.5. Incompatible materials**

Phenol, polymer with formaldehyde, glycidyl ether

Acidi, basi e ossidanti forti.

**Phosphoric acid**

Ammonia. Reactive metals. Strong bases.

**10.6. Hazardous decomposition products**

Phenol, polymer with formaldehyde, glycidyl ether

Fumi sgradevoli e tossici. COx.

**Phosphoric acid**

Toxic phosphorus compounds.

**SECTION 11. Toxicological information****Phosphoric acid**

The product is corrosive, therefore extremely irritated to the eyes, skin and mucous membranes, it can cause serious damage.

**11.1. Information on toxicological effects****Quartz**

Notes on QUARTZ (fine fraction):

Prolonged and / or massive exposure to dust containing respirable crystalline silica can cause silicosis, a nodular fibrosis of the lungs due to the deposition in the alveoli of respirable particles of crystalline silica. Given that the European Union at the time of drafting this safety data sheet does not classify crystalline silica (alpha quartz) as a dangerous substance and that at the moment there are no requests for changes by Member States, the following is notified: Lo IARC (International Agency for Research on Cancer) has included crystalline silica as a human carcinogen since 1997, but stated that human carcinogenicity was not detected in all the industrial circumstances studied. Carcinogenicity may be dependent on the intrinsic characteristics of silica or external factors that can change its biological activity "(IARC Monographs on the evaluation of Carcinogenic Risk to Humans, volume 68 Silica, Silicates, Dust and Organic Fibers - Lyon, 15-22 Oct. 96) The IOM (Institute of Occupational Medicine), stated that "the data resulting from the completed epidemiological investigation are inadequate to determine whether crystalline silica is to be considered carcinogenic to men, it is also possible to note a predisposition to the development of lung cancer in silicotic subjects although it is not possible to determine a direct effect of silica in it "(Scientific Opinion on the Effects of Airborne Silica, A. Pilkington et al., Report TM / 96/08, Institute of Occupational Medicine, Edinburgh Jan, 99) . The S.C.O.E.L. (Scientific Committee on Occupational Exposure Limits) in 2002 stated that "the main effect in humans of silica dust is silicosis. There is sufficient information to conclude that the relative risk of cancer is increased in people with silicosis (and apparently not in workers without silicosis exposed to quartz dust in quarries or in the ceramic industry). On the other hand, preventing the onset of silicosis will also reduce the risk of cancer ... "On April 25, 2006 was signed a Voluntary Agreement between the social partners (Social Dialogue Agreement on Silica) at European level, on how to prevent from adopt, in the sectors concerned, to prevent the risks deriving from exposure to respirable crystalline free silica dusts. The agreement entered into force on 25 October 2006.

For crystalline free silica, Directive (EU) 2017/2398 sets a limit value for occupational exposure of 0.1 mg / m3 and includes work involving risks of exposure to carcinogens, including work involving exposure to crystalline silica dust breathable generated by a

**DRAP126 - ARMOFIX MTL COMP. A****SECTION 11. Toxicological information ... / >>**

manufacturing process ". The problem of exposure to Silica Libera Cristallina (SLC) in the workplace is particularly significant, as this risk agent is present in numerous work activities. SLC is in fact extremely common in nature and used in a wide range of civil and industrial products. The International Agency for Research on Cancer has classified it as a certain carcinogen (group 1) as early as 1997, has reassessed its toxicity data in 2010 confirming its carcinogenicity (Volume 100, part C, IARC Monograph). Source:

[www.dors.it](http://www.dors.it)

Opinion of the Industrial Minerals Association (IMA), 2014:

Since 2010, in accordance with the CLP Regulation, since a harmonized classification for silica is not available, manufacturers of industrial minerals have jointly assessed that the GHS classification for quartz (fine fraction) and cristobalite (fine fraction) is STOT RE category 1 for silicosis risk. As a consequence of this classification, substances and mixtures containing crystalline silica (fine fraction), in the form of identified impurities, additive or single constituent, are classified as: STOT RE 1, if the concentration of quartz (fine fraction) or cristobalite ( fine fraction) is 10% or more; STOT RE 2, if the concentration of quartz (fine fraction) or cristobalite (fine fraction) is between 1 and 10%; If quartz (fine fraction) or cristobalite (fine fraction) in mixtures and substances is less than 1%, no classification is required by law. The decision on the classification of products containing crystalline silica (fine fraction) takes into account the availability of these fine particles.

If a product exists in a form that prevents the fraction of fine particles from becoming airborne (for example in liquid form), this will be taken into account in the classification decision. Therefore, manufacturers of industrial minerals believe that when a mineral classified as STOT RE1 or STOT RE2 due to its fine fraction content of crystalline silica is incorporated into a mixture in liquid form, the fine fraction is no longer available and the classification it would not be justified. [IMA Europe © 2014, <http://www.crystallinesilica.eu/content>]

#### 2,2-bis-[4-(2,3-epoxipropoxy)phenyl]propane

Inhalation: No significant hazards at normal ambient temperatures. Gases or vapors in high concentrations can irritate the respiratory tract.

Ingestion: This product has low toxicity. No adverse effects are expected associated with quantities that may be accidentally ingested. The product irritates the mucous membranes and can cause abdominal discomfort if ingested.

Skin contact: Causes skin irritation. May cause an allergic skin reaction. Prolonged and frequent contact can cause redness and irritation.

Eye Contact: Causes serious eye irritation. Symptoms following overexposure may include the following: Pain or irritation. Copious eye tearing. Redness.

#### Crystalline silica

Prolonged and / or massive exposure to dust containing respirable crystalline silica can cause silicosis, a nodular fibrosis of the lungs due to the deposition in the alveoli of respirable crystalline silica particles. Given that the European Union at the date of preparation of this safety data sheet does not classify crystalline silica (alpha quartz) as a dangerous substance and that at the moment there are no requests for changes in this regard by the Member States, the following is notified: IARC (International Agency for Research on Cancer) has included crystalline silica among human carcinogens since 1997, but specified that human carcinogenicity was not detected in all the industrial circumstances studied. Carcinogenicity can be dependent on the intrinsic characteristics of silica or on external factors that can modify its biological activity "(IARC Monographs on the evaluation of Carcinogenic Risk to Humans, volume 68 Silica, Silicates, Dust and Organic Fibers - Lyon, 15-22 Oct. 96) The IOM (Institute of Occupational Medicine), stated that "the data resulting from the epidemiological investigation carried out are inadequate to determine whether crystalline silica is to be considered carcinogenic for men, it is also possible to note a predisposition to the development of lung cancer in silicotic subjects although it is not possible to determine a direct effect of silica in this "(Scientific Opinion on the Health Effects of Airborne Crystalline Silica, A. Pilkington et al., Report TM / 96/08, Institute of Occupational Medicine, Edinburgh Jan, 99) . The S.C.O.E.L. (EU Scientific Committee on Occupational Exposure Limits) in 2002 stated that "the main effect of silica dust in humans is silicosis. There is sufficient information to conclude that the relative risk of cancer is increased in people with silicosis (and apparently not in silicosis-free workers exposed to quartz dust in quarries or in the ceramic industry). On the other hand, preventing the onset of silicosis will also reduce the risk of cancer ... "On 25 April 2006 a Voluntary Agreement was signed between the social partners (Social Dialogue Agreement on Silica) at European level, on the methods of prevention from adopt, in the sectors concerned, to prevent the risks deriving from exposure to respirable free crystalline silica dust. The agreement entered into force on 25 October 2006.

Opinion of the Industrial Minerals Association (IMA), 2014:

Since 2010, in accordance with the CLP Regulation, since a harmonized classification for silica is not available, the producers of industrial minerals have jointly assessed that the GHS classification for quartz (fine fraction) and cristobalite (fine fraction) is STOT RE category 1 for the risk of silicosis. As a consequence of this classification, substances and mixtures containing crystalline silica (fine fraction), in the form of identified impurity, additive or single constituent, are classified as: STOT RE 1, if the concentration of quartz (fine fraction) or cristobalite ( fine fraction) is equal to or greater than 10%; STOT RE 2, if the concentration of quartz (fine fraction) or cristobalite (fine fraction) is between 1 and 10%; If the quartz (fine fraction) or cristobalite (fine fraction) in mixtures and substances is less than 1%, no classification is required by law. The decision on the classification of products containing crystalline silica (fine fraction) takes into account the availability of these fine particles.

If a product exists in a form that prevents the fine particle fraction from becoming airborne (e.g. in liquid form), this will be taken into account in the classification decision. Therefore, industrial mineral producers believe that when a mineral classified as STOT RE1 or STOT RE2 due to its crystalline silica fine fraction content is incorporated into a mixture in liquid form, the fine fraction is no longer available and the classification it would not be justified. [IMA Europe © 2014, <http://www.crystallinesilica.eu/content>]

**DRAP126 - ARMOFIX MTL COMP. A****SECTION 11. Toxicological information ... / >>**

Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives  
 Inhalation: May cause respiratory tract irritation.  
 Ingestion: Gastrointestinal symptoms, including stomach pain.  
 Skin contact: Irritating to skin. May cause sensitization by skin contact.  
 Contact with eyes: Irritating to eyes.

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

ATE (Inhalation) of the mixture:	Not classified (no significant component)
ATE (Oral) of the mixture:	Not classified (no significant component)
ATE (Dermal) of the mixture:	Not classified (no significant component)

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)

LD50 (Oral) > 2000 mg/kg Rat, OECD 420

LD50 (Dermal) > 5000 mg/kg Rat, OECD 401

Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives

LD50 (Oral) 17100 mg/kg Rat

Phosphoric acid

LD50 (Oral) 2600 mg/kg Ratto

LD50 (Dermal) 2740 mg/kg Coniglio

2,2-bis-[4-(2,3-epoxipropoxy)phenyl]propane

LD50 (Oral) > 15000 mg/kg Rat

LD50 (Dermal) 23000 mg/kg Rabbit

Phenol, polymer with formaldehyde, glycidyl ether

LD50 (Oral) > 2001 mg/kg Rat, OECD 420

LD50 (Dermal) > 2001 mg/kg Rat, OECD 402

Quartz

Acute oral / dermal LD50 of quartz and cristobalite greater than 2000 mg / kg

Acute toxic inhalation

Lack of dose-specific acute toxicity data allowing categorical decisions on the classification of acute inhalation toxicity of 100% crystalline silica forms. Acute inhalation toxicity not expected based on study values according to OECD requirements, with substance containing 45% cristobalite and no lethality reported. No further testing is warranted in the interest of animal welfare.

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)

Acute toxicity - inhalation: in accordance with Annex VII of the REACH Regulation, it is not necessary to conduct the acute toxicity study by inhalation absorption, since oral and dermal absorption studies are available for this substance.

In a rat study according to the OECD standard n. 402 the dermal LD50 was > 2000 mg / kg. In several acute dermal toxicity studies in rabbits, LD50 was > 2000 mg / kg. In a rabbit study a LD50 value of 23 grams / kg was reported.

Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives

Acute toxicity - inhalation: No mortality was observed in rats exposed for 7 hours to saturated vapor (150 mg / m3).

LC50 (4h) 0.206 mg / l, Inhalation, Dusts / mists, Rat (0 Death.)

SKIN CORROSION / IRRITATION

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## SECTION 11. Toxicological information ... / &gt;&gt;

## Causes skin irritation

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)

Result: Skin - erythema / eschar 404 Acute Dermal Irritation / Corrosion

Species: rabbit

Score: 0.7

Exposure: 4 h

Observation: 72 h

Result: Skin - edema 404 Acute Dermal Irritation / Corrosion

Species: rabbit

Score: 0

Exposure: 4 h

Observation: 4-504 h

Result: eyes - corneal opacity 405 Acute Eye Irritation / corrosion

Species: Rabbit

Score: 0

Observation: 1 - 168 h

Result: eyes - Injury of the iris 405 Acute Eye Irritation / Corrosion

Species: Rabbit

Score: 0

Observation: 1 - 168 h

Result: eyes - Redness of the conjunctiva 405 Acute Eye Irritation / Corrosion

Species: rabbit

Score: 0

Observation: 1 - 168 h

Result: eyes - conjunctiva edema 405 Acute Eye Irritation / Corrosion

Species: rabbit

Score: 0

Observation: 1 - 168 h

Result: Skin - Slight irritation

Species: rabbit

Exposure: 24 h

2,2-bis-[4-(2,3-epoxipropoxy)phenyl]propane

Causes skin irritation.

Phenol, polymer with formaldehyde, glycidyl ether

Species: rabbit

Method: OECD 404

Result: irritating to the skin

Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives

Result: Skin - Primary index of skin irritation (PDII) OTS 798.4450 Acute Dermal Irritation

Species: Rabbit

Score: 4.1

Exposure: 24 h

Observation: 72 h

Result: Skin - Primary Index of Skin Irritation (PDII) 404 Acute Dermal Irritation / Corrosion

Species: Rabbit

Score: 5.75

Exposure: 24 h

Observation: 72 h

Result: eyes - corneal opacity 405 Acute Eye Irritation / Corrosion

Species: Rabbit

Score: 2

Observation: 1 - 24 h

Species: Skin - Moderately irritating

Species: Rabbit

Exposure: 24 h

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## SECTION 11. Toxicological information ... / &gt;&gt;

Phosphoric acid  
Strongly corrosive on the skin and mucous membranes.

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation

2,2-bis-[4-(2,3-epoxipropoxy)phenyl]propane  
Causes serious eye irritation.

Phenol, polymer with formaldehyde, glycidyl ether  
Species: rabbit  
Method: OECD 405  
Result: irritating to the eyes

Phosphoric acid  
Strongly corrosive on the eyes.

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)  
Species: rabbit  
Test: OECD 405  
Result: no eye irritation

Skin sensitization

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)  
The Buehler method was used to assess the skin sensitization potential of the liquid epoxy BPFDE. Ten male guinea pigs were given 0.4 ml of the test substance topically once a week for three weeks. A positive control of BPFDE liquid epoxy resin was used on ten additional animals. The stimulation phase began two weeks later with the addition of 5 animals exposed to 0.4ml of liquid BPFDE liquid epoxy resin. The negative control had 0 positive reactions; BPFDE liquid epoxy resin produced positive reactions in 4 out of 10 guinea pigs and the positive control had 8 out of ten positive reactions. Under the conditions of this study, the test material resulted in delayed hypersensitivity in guinea pigs.

Route of exposure: skin  
Species: mouse  
Method: OECD 429  
Result: can cause sensitization in contact with the skin

2,2-bis-[4-(2,3-epoxipropoxy)phenyl]propane  
May cause an allergic skin reaction.

Phenol, polymer with formaldehyde, glycidyl ether  
Species: mouse  
Method: OECD 429  
Result: can cause sensitization in contact with the skin

Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives  
In a sensitization study with the Buehler method carried out according to the test specification OTS 870.2600 of the US EPA, positive skin reactions were observed in 20/20 guinea pigs. An extreme sensitizer in a study with maximization test on guinea pig conducted according to the OECD test specification No. 406.

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

Quartz  
Quartz has genotoxic and mutagenic effects mainly due to inflammatory processes. Respirable quartz did not cause increases in HPRT mutations in epithelial cells of the lungs of rats in vitro.

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)  
Bisphenol F diglycidyl ether induced a gene mutation in the Ames / Salmonella mutation test and chromosomal aberrations in human lymphocytes in multiple independent GLP studies conducted according to test guidelines. Furthermore, the structural analog, bisphenol A diglycidyl ether (BPADGE), induced a significant increase in the frequency of mutations in cultured L5178Y mouse lymphoma cells, supporting the other conclusions. Therefore, BPFDE is genotoxic in vitro. When the genotoxic potential of bisphenol F diglycidyl ether was evaluated in multiple GLP compliant in vivo tests, including mouse micronucleus tests, UDS in vivo / in vitro

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## SECTION 11. Toxicological information ... / &gt;&gt;

tests, and MutaMouse on rat, no evidence of genotoxicity was observed. Results from other in vivo genotoxicity tests also support these negative results for BPFDE. It is concluded that bisphenol F diglycidyl ether is not genotoxic in vivo.

In vitro genotoxicity:

Metabolic activation: with or without metabolic activation

Method: OECD 471

Result: positive

Metabolic activation: with or without metabolic activation

Method: OECD 473

Result: positive

Metabolic activation: with or without metabolic activation

Method: OECD 476

Result: positive

Genotoxicity in vivo:

Type of gellule: germs

Method of application: oral

Result: negative

Type of gellula: somatic

Method of application: oral

Dose: 0 - 5000 mg / kg

Result: negative

Crystalline silica

Quartz has genotoxic and mutagenic effects mainly due to inflammatory processes. Respirable quartz did not cause increases in HPRT mutations in epithelial cells of the lungs of rats in vitro.

Phenol, polymer with formaldehyde, glycidyl ether

Genotossicità in vitro

Attivazione metabolica: con o senza attivazione metabolica

Risultato: positivo

Concentrazione: 0 - 5000 ug/plate

Attivazione metabolica: con o senza attivazione metabolica

Risultato: positivo

Genotossicità in vivo

Tipo di cellula: germi

Modalità di applicazione: orale

Risultato: negativo

Tipo di cellula: somatico

Modalità di applicazione: orale

Dosi: 0 - 5000 mg/kg

Risultato: positivo

Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives

Positive in a bacterial mutation test conducted according to the OECD test specification No. 471 in an experimental Salmonella TA1535 strain with and without metabolic activation with S9. Negative in a gene mutation test on Chinese hamster ovary cells (CHO) HGPRT conducted according to the OECD test specification No. 476 up to cytotoxic levels with and without metabolic activation with S9. Negative in a gene mutation assay on L5178Y / TK mouse lymphoma cells tested up to cytotoxic dose levels. Negative by micronucleus induction (chromosomal damage) in a mouse study conducted according to OECD specification No. 474 up to a high dose of intraperitoneal injection of 4.0 grams / kg. Negative in a study of chromosomal aberrations on rat bone marrow conducted similarly to the OECD test specification No. 475 by intraperitoneal injection, up to a high dose of about 700 mg / kg.

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

Quartz

The risk of excess lung cancer is only proven for high occupational exposures to respirable crystalline silica. The risk of excess lung cancer is limited to patients with silicosis.

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## SECTION 11. Toxicological information ... / &gt;&gt;

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight  $\leq 700$ )

È stata valutata la capacità del Bisfenolo F diglicidil etero (BPFDE) di indurre tumori locali e sistemici in uno studio di 24 mesi con test cutaneo ("skin painting") sul topo. Il trattamento cutaneo di topi per due volte alla settimana con una soluzione fino al 10% di diglicidil etero bisfenolo F (BPFDE) non ha indotto alcun risultato negativo di incidenza di tumori o effetti cutanei locali. Pertanto, il BPFDE non è da considerare cancerogeno per il topo nelle condizioni di questo studio. Il NOAEL è stato stimato pari a circa 800 mg/kg/die.

Specie: ratto, maschio e femmina

Modalità di applicazione: orale

Tempo di esposizione: 24 mesi

Dosi: 15 mg/kg

Frequenza del trattamento: 7 al giorno

Metodo: OECD 453

Risultato: negativo

Specie: topo, maschio

Modalità di applicazione: dermico

Tempo di esposizione: 24 mesi

Dosi: 1 mg/kg

Frequenza del trattamento: 3 al giorno

Metodo: OECD 453

Risultato: negativo

Specie: ratto, femmina

Modalità di applicazione: dermico

Tempo di esposizione: 24 mesi

Dosi: 1 mg/kg

Frequenza del trattamento: 5 al giorno

Metodo: OECD 453

Risultato: negativo

Crystalline silica

The excess risk of lung cancer is only proven for high occupational exposures to respirable crystalline silica. The excess risk of lung cancer is limited to patients with silicosis.

ACGIH categorizes free crystalline silica as A2, a suspected human carcinogen. Human data, although adequate for quality, are controversial or insufficient to classify the agent as a human carcinogen; or, the agent was found to be carcinogenic in experimental animals: at dose levels, by routes of administration, at sites, by histological type, or by mechanisms considered relevant to worker exposure. This classification is applied primarily when there is reduced evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals of relevance to humans.

Phenol, polymer with formaldehyde, glycidyl ether

Species: rat, male and female

Method of application: oral

Exposure time: 24 months

Dose: 15 mg / kg

Frequency of treatment: 7 per day

Method: OECD 453

Result: negative

Species: mouse, male

Method of application: dermal

Exposure time: 24 months

Dose: .1 mg / kg

Frequency of treatment: 3 per day

Method: OECD 453

Result: negative

Species: rat, female

Method of application: dermal

Exposure time: 24 months

Dose: 1 mg / kg

Frequency of treatment: 5 per day

Method: OECD 453

Result: negative



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## SECTION 11. Toxicological information ... / &gt;&gt;

Phosphoric acid  
Effetti CMR (cancerogeni, mutageni, tossici per la riproduzione)  
Tossicità per la riproduzione  
Tossicità dello sviluppo/teratogenicità  
Saggio sulla tossicità riproduttiva a una generazione  
Parametro : NOAEL(C)  
Via di esposizione : Ratto  
Dosi efficace :  $\geq 500$  mg/kg bw/day

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

Quartz

Silica is essential to normal body functions and is ingested orally with the consumption of foods containing silica in nature. A first mono-generational study on Wistar rats does not show the occurrence of adverse effects deriving from the long-term ingestion of silica-rich water.

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight  $\leq 700$ )

The bisphenol A diglycidylether (DGEBA) has been tested for its embryo / fetal toxicity and teratogenicity in pregnant rabbits. The DGEBA was applied daily to the back (depilated) of white New Zealand rabbits at doses of 0 (polyethylene glycol, vehicle control), 30, 100 or 300 mg / kg of body weight / day at a volumetric dose of 1 ml / kg of body weight / day on days 6 to 18 of gestation. Twenty-six inseminated rabbits were used per dosage group, obtaining a minimum of 20 pregnant rabbits per exposure level. An occlusive bandage of absorbent gauze and non-absorbent cotton was placed on the dosing area on the back of each rabbit. The bandage was held in place for a minimum of 6 hours / day with a lycra / spandex protective cover. Following the period of occlusion the bandage and the protective wrapper were removed. Maternal toxicity effects were observed among pregnant rabbits in the 300 mg / kg dose group, as evidenced by moderate to severe erythema, fissures, haemorrhages and mild edema at the site of exposure. Similar, but less severe skin lesions were observed in pregnant rabbits in the 100 mg / kg / day exposure group. Effects on the skin (mild erythema) observed in pregnant rabbits in the 30 mg / kg / day group were not considered toxicologically significant. No evidence of embryo / fetotoxicity or teratogenicity was observed at any dose, which results in a level at which no effect (NOEL) is observed at an embryonic / fetal level of 300 mg / kg body weight / day.

Crystalline silica

Silica is essential to normal body functions and is ingested orally with the consumption of foods containing silica in nature. A first mono-generational study on Wistar rats does not show the occurrence of adverse effects deriving from the long-term ingestion of silica-rich water.

Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives

In a dermal toxicological study conducted in the rat according to the US EPA OTS 798.4420 method and according to the OECD test specification No. 414, the NOAEL for adverse effects on both mother and development was above the high dose level of 200 mg / kg / day.

Adverse effects on sexual function and fertility

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight  $\leq 700$ )

Species: rat, male and female

Method of application: oral

Method: OECD 416

Result: There was no effect on fertility and early embryonic development.

Phenol, polymer with formaldehyde, glycidyl ether

Species: rat, male and female

Method of application: oral

Method: OECD 416

Result: There was no effect on fertility and early embryonic development

Adverse effects on development of the offspring

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight  $\leq 700$ )

Species: rabbit, female

Method of application: dermal

General toxicity in mothers: no level of harmfulness

observed: 30 mg / kg body weight

Result: no teratogenic effect

Phenol, polymer with formaldehyde, glycidyl ether

Species: rabbit, female

Method of application: dermal

General maternal toxicity: no level of harmfulness

observed: 30 mg / kg body weight



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Result: no teratogenic effect  
Species: rabbit, female  
Method of application: oral  
General maternal toxicity: no level of harmfulness  
observed: 60 mg / kg body weight  
Method: OECD 414  
Result: no teratogenic effect

Species: rat, female  
Method of application: oral  
General maternal toxicity: no level of harmfulness  
observed: 180 mg / kg body weight  
Method: OECD 414  
Result: no teratogenic effect

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

May cause damage to organs

Quartz

Prolonged or massive exposure to dust containing respirable crystalline silica can cause silicosis, a nodular pulmonary fibrosis caused by the deposition in the lungs of respirable fine particles of crystalline silica.

There is substantial evidence to support the fact that the increased risk of cancer would be limited to patients already suffering from silicosis. The protection of workers against silicosis must be guaranteed by respecting the limits of occupational exposure in accordance with the law and possibly adopting additional risk management measures.

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)

NOAEL: 250 mg / kg

Species: rat, male and female

Method of application: ingestion

Exposure time: 13 weeks

Number of exposures: 7 d

Mode: subchronic toxicity

Crystalline silica

Prolonged or massive exposure to dust containing respirable crystalline silica can cause silicosis, a nodular pulmonary fibrosis caused by the deposition in the lungs of respirable fine particles of crystalline silica.

There is substantial evidence to support the fact that the increased risk of cancer would be limited to patients already suffering from silicosis. The protection of workers against silicosis must be guaranteed by respecting the limits of occupational exposure in accordance with the law and possibly adopting additional risk management measures.

Phenol, polymer with formaldehyde, glycidyl ether

Species: Rat, male and female

NOAEL: 50 mg / kg

Method of application: ingestion

Exposure time: 14 weeks

Number of exposures: 7 d

Method: subchronic toxicity

Species: Rat, male and female

NOAEL: 10 mg / kg

Method of application: contact with the skin

Exposure time: 13 weeks

Number of displays: 5 d

Method: subchronic toxicity

Species: mouse, male

NOAEL: 100 mg / kg

Method of application: contact with the skin

Exposure time: 14 weeks

Number of exposures: 3 d

Method: subchronic toxicity

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Phosphoric acid  
Toxicity after repeated use (subacute, subchronic, chronic)  
Subacute oral toxicity  
Parameter: NOAEL (C)  
Route of exposure: Oral route  
Species: Rat  
Effective dose: 250 mg / kg

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

## SECTION 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.

2,2-bis-[4-(2,3-epoxipropoxy)phenyl]propane  
Toxic to aquatic life with long lasting effects.

Phosphoric acid  
Use according to good working practices, avoiding to disperse the product in the environment.

## 12.1. Toxicity

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)  
EC50 (Selenastrum capricornutum): 1.8 mg / l  
Exposure time: 72 h  
Static test  
Method: OECD 201

Cl50 (activated sludge)> 100 mg / l  
Exposure time: 3 h  
Static test

Phenol, polymer with formaldehyde, glycidyl ether  
Cl50 (fango attivo) > 100 mg/l  
Tempo di esposizione: 3 h  
Tempo di test: prova stativa

Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives  
LC50, 96 hour:> 5000 mg / l, Oncorhynchus mykiss (rainbow trout)  
LC50, 96 hour: 1800 mg / l, Lepomis macrochirus (Perch)  
EC50, 72 hours: 843 mg / l, Pseudokirchneriella subcapitata  
NOEC, 72 hours: 500 mg / l, Pseudokirchneriella subcapitata  
EC50, 3 hours:> 100 mg / l, Activated sludge

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)  
LC50 - for Fish 2,54 mg/l/96h Fish  
EC50 - for Crustacea 2,55 mg/l/48h 202 Daphnia sp. Acute Immobilization Test and Reproduction Tes  
EC50 - for Algae / Aquatic Plants > 1000 mg/l/72h 201 Alga, Growth Inhibition Test  
Chronic NOEC for Crustacea 0,3 mg/l Daphnia magna, 21 d, OECD 211 semistatic

Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives  
LC50 - for Fish > 5 g/l 203 Fish, Acute Toxicity Test. Bluegill  
EC50 - for Crustacea 7,2 mg/l/48h 202 Daphnia sp. Acute Immobilization Test and Reproduction Test  
EC50 - for Algae / Aquatic Plants 844 mg/l/72h 201 Alga, Growth Inhibition Test

Phosphoric acid  
EC50 - for Crustacea > 100 mg/l/48h Daphnia magna  
EC50 - for Algae / Aquatic Plants > 100 mg/l/72h Desmodesmus subspicatus

2,2-bis-[4-(2,3-epoxipropoxy)phenyl]propane  
LC50 - for Fish 2 mg/l/96h Oncorhynchus mykiss  
EC50 - for Crustacea 1,8 mg/l/48h Daphnia magna  
EC50 - for Algae / Aquatic Plants 11 mg/l/72h Selenastrum capricornutum  
Chronic NOEC for Crustacea 0,3 mg/l Daphnia magna

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## SECTION 12. Ecological information ... / &gt;&gt;

Chronic NOEC for Algae / Aquatic Plants	4,2 mg/l Selenastrum capricornutum
Phenol, polymer with formaldehyde, glycidyl ether	
LC50 - for Fish	1,5 mg/l/96h Oncorhynchus mykiss, OECD 203
EC50 - for Crustacea	1,7 mg/l/48h Daphnia magna, OECD 202
EC50 - for Algae / Aquatic Plants	9,4 mg/l/72h Selenastrum capricornutum
Chronic NOEC for Crustacea	0,3 mg/l Daphnia magna, 21 d, OECD 211

## 12.2. Persistence and degradability

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight  $\leq$  700)  
Bisphenol F diglycidyl ether was not readily biodegradable under the conditions of the screening studies according to OECD test specifications Nos. 301 B and 301 D. The maximum rate of biodegradation observed in one of the OECD 301 B studies was 16% per 10 mg / the 28 days of contact.

Inoculum: activated sludge  
Concentration: 3 mg / l  
Result: not biodegradable  
Biodegradation: approx. 0%  
Exposure time: 28 d  
Method: Directive 67/548 / EEC Annex V C.4.E

2,2-bis-[4-(2,3-epoxipropoxy)phenyl]propane  
Degradazione 12%: 28 giorno OECD 302B

Phenol, polymer with formaldehyde, glycidyl ether  
Inoculum: waste water (STP outflow)  
Concentration: 20 mg / l  
Result: not immediately biodegradable  
Biodegradation: 5%  
Exposure time: 28 d  
Method: OECD 301F

Stability in the water  
Half-life to degradation (TD50)

TD50: 4.83 d (25 ° C)  
pH: 4  
Method: OECD 111  
Comments: fresh water

TD50: 7.1 d (25 ° C)  
pH: 9  
Method: OECD 111  
Comments: fresh water

TD50: 3.58 d (25 ° C)  
pH: 7  
Method: OECD 111  
Comments: fresh water

Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives  
In a study conducted according to OECD Test Specification No. 301 F, biodegradation was 57-65% after 7 days. However, in a study conducted according to OECD Test Specification No. 301 D (unopened bottle) biodegradation was only 34.7% after 28 days.  
87% degradation: 28 days OECD 301F

Phosphoric acid  
The substance is inorganic, therefore biodegradability tests are not applicable.  
The phosphoric acid dissociates in water in the  $\text{H}_3\text{O}^+$ ,  $\text{H}_2\text{PO}_4^-$ ,  $\text{HPO}_4^{2-}$  ions, which can be further degraded.

2,2-bis-[4-(2,3-epoxipropoxy)phenyl]propane  
NOT rapidly degradable

## 12.3. Bioaccumulative potential

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## SECTION 12. Ecological information ... / &gt;&gt;

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)

BCF: 150 150.00

Potential: low

2,2-bis-[4-(2,3-epoxipropoxy)phenyl]propane

Potentially bioaccumulative

Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives

BCF: 160 - 263 160.00

Potential: low

Phosphoric acid

Does not bioaccumulate

Phosphoric acid dissociates in water from the H<sub>3</sub>O<sup>+</sup>, H<sub>2</sub>PO<sub>4</sub><sup>-</sup>, HPO<sub>4</sub><sup>--</sup> ions, which are present in the environment. Phosphoric acid is absorbed in the form of phosphate anions.

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)

Partition coefficient: n-octanol/water 2,7 Log Kow

BCF 150

Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives

Partition coefficient: n-octanol/water 3,77 Log Kow

2,2-bis-[4-(2,3-epoxipropoxy)phenyl]propane

Partition coefficient: n-octanol/water 3,242 Log Kow Estimated value

Phenol, polymer with formaldehyde, glycidyl ether

Partition coefficient: n-octanol/water 3,242 25°C, pH: 7,1. OECD 117

BCF 31 Non si bio-accumula

## 12.4. Mobility in soil

2,2-bis-[4-(2,3-epoxipropoxy)phenyl]propane

Low mobility.

Koc: 1800 - 4400 @ 20 ° C Estimated value.

Phosphoric acid

This substance is highly soluble and dissociates in water.

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)

Partition coefficient: soil/water 4460 OECD 121

Phenol, polymer with formaldehyde, glycidyl ether

Partition coefficient: soil/water 445

## 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

## SECTION 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.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

# DRACO ITALIANA S.p.A.

## DRAP126 - ARMOFIX MTL COMP. A

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Replaced revision:7 (Dated 09/06/2021)

EN

### SECTION 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. (Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight  $\leq$  700); 2,2-bis-[4-(2,3-epoxipropoxi)phenyl]propane)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight  $\leq$  700); 2,2-bis-[4-(2,3-epoxipropoxi)phenyl]propane)

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight  $\leq$  700); 2,2-bis-[4-(2,3-epoxipropoxi)phenyl]propane)

#### 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

#### 14.5. Environmental hazards

ADR / RID: Environmentally Hazardous



IMDG: Marine Pollutant



IATA: Environmentally Hazardous



#### 14.6. Special precautions for user

ADR / RID: HIN - Kemler: 90  
Special provision: -

Limited Quantities: 5 L

Tunnel restriction code: (-)

IMDG: EMS: F-A, S-F

Limited Quantities: 5 L

IATA: Cargo:

Maximum quantity: 450 L

Packaging instructions: 964

Pass.:

Maximum quantity: 450 L

Packaging instructions: 964

Special provision:

A97, A158, A197, A215

**DRAP126 - ARMOFIX MTL COMP. A****SECTION 14. Transport information ... / >>****14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

Information not relevant

**SECTION 15. Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**Seveso Category - Directive 2012/18/EC: E2Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006Product

Point 3

Contained substance

Point	75	Oxirane, mono [(C12-14- alkyloxy) methyl] derivatives Reg. no.: 01 2119485289-22-XXXX
Point	75	Titanium dioxide Reg. no.: 01-2119489379-17
Point	75	Yellow iron oxide Reg. no.: 01-2119457554-33-0015
Point	75	Phosphoric acid Reg. no.: 01-2119485924-24-XXXX

Regulation (EC) No. 2019/1148 - on the marketing and use of explosives precursors

Not applicable

Substances in Candidate List (Art. 59 REACH)On the basis of available data, the product does not contain any SVHC in percentage  $\geq$  than 0,1%.Substances subject to authorisation (Annex XIV REACH)

None

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

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

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.

**15.2. Chemical safety assessment**

A chemical safety assessment has been performed for the following contained substances

Phosphoric acid

**SECTION 16. Other information**

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

<b>STOT RE 1</b>	Specific target organ toxicity - repeated exposure, category 1
<b>STOT RE 2</b>	Specific target organ toxicity - repeated exposure, category 2
<b>Skin Corr. 1B</b>	Skin corrosion, category 1B
<b>Eye Irrit. 2</b>	Eye irritation, category 2
<b>Skin Irrit. 2</b>	Skin irritation, category 2
<b>Skin Sens. 1</b>	Skin sensitization, category 1
<b>Aquatic Chronic 2</b>	Hazardous to the aquatic environment, chronic toxicity, category 2
<b>H372</b>	Causes damage to organs through prolonged or repeated exposure.
<b>H373</b>	May cause damage to organs through prolonged or repeated exposure.
<b>H314</b>	Causes severe skin burns and eye damage.
<b>H319</b>	Causes serious eye irritation.
<b>H315</b>	Causes skin irritation.
<b>H317</b>	May cause an allergic skin reaction.

**DRAP126 - ARMOFIX MTL COMP. A****SECTION 16. Other information ... / >>****H411**  
**EUH205**Toxic to aquatic life with long lasting effects.  
Contains epoxy constituents. May produce an allergic reaction.

## LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- 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
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- 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.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

## GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
  2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
  3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
  4. Regulation (EU) 2015/830 of the European Parliament
  5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
  6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
  7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
  8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
  9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
  10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
  11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
  12. Regulation (EU) 2016/1179 (IX Atp. CLP)
  13. Regulation (EU) 2017/776 (X Atp. CLP)
  14. Regulation (EU) 2018/669 (XI Atp. CLP)
  15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
  16. Regulation (EU) 2019/521 (XII Atp. CLP)
  17. Regulation (EU) 2019/1148
  18. Regulation (EU) 2020/217 (XIV Atp. CLP)
- The Merck Index. - 10th Edition
  - Handling Chemical Safety
  - INRS - Fiche Toxicologique (toxicological sheet)
  - Patty - Industrial Hygiene and Toxicology
  - N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
  - IFA GESTIS website
  - ECHA website
  - Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

## 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

**DRAP126 - ARMOFIX MTL COMP. A****SECTION 16. Other information ... / >>**

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**

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

Changes to previous review:

The following sections were modified:

01.