

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: MorcemColor Epoxi (comp A)

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

- Use for consumption and by professional operators.
- **Application of the substance / the mixture** Epoxy mortar

1.3 Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

GRUPO PUMA ESPAÑA S.L.
AVDA. AGRUPACIÓN CÓRDOBA, NUM. 17
14014 CÓRDOBA - CÓRDOBA - ESPAÑA
Tfno.: +34 957 102 210 - Fax: +34 957 44 19 92
fds@grupopuma.com
<http://www.grupopuma.com>

1.4 Emergency telephone number:

- 957 102 210 (Horario de atención: 08:30 – 13:30 y de 16:00 – 19:00)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

· Classification according to Regulation (EC) No 1272/2008

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

2.2 Label elements

· Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

· Hazard pictograms



GHS07

· Signal word Warning

· Hazard-determining components of labelling:

bis[4-(2,3-epoxypropoxy)phenyl]propane
formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol
Dipropylene glycol diglycidyl ether
p-tert-butylphenyl 1-(2,3-epoxy)propyl ether
Polyethylene glycol, ether with 4-hydroxy-2,2,6,6-tetramethyl-1-piperidineethanol (2:1)
1,2,3-Propanetriol, glycidyl ethers

· Hazard statements

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

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H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

- P101 If medical advice is needed, have product container or label at hand.
- P102 Keep out of reach of children.
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

Results of PBT and vPvB assessment

- PBT:** Not applicable.
- vPvB:** Not applicable.
- Determination of endocrine-disrupting properties** Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 1675-54-3 EINECS: 216-823-5 Index number: 603-073-00-2 Reg.nr.: 01-2119456619-26-XXXX	bis[4-(2,3-epoxypropoxy)phenyl]propane ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317 Specific concentration limits: Eye Irrit. 2; H319: C ≥ 5 % Skin Irrit. 2; H315: C ≥ 5 %	≥5-≤10%
EC number: 701-263-0 Reg.nr.: 01-2119454392-40-XXXX	formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; Skin Sens. 1A, H317	≥2.5-≤5%
CAS: 41638-13-5 EC number: 609-948-5 Reg.nr.: POLYMER	Dipropylene glycol diglycidyl ether ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335; Aquatic Chronic 3, H412	≥2-≤5%
CAS: 3101-60-8 EINECS: 221-453-2 Reg.nr.: 01-2119959496-20-XXXX	p-tert-butylphenyl 1-(2,3-epoxy)propyl ether ⚠ Aquatic Chronic 2, H411; ⚠ Skin Sens. 1, H317	≥1-<2.5%
CAS: 59535-09-0 EC number: 611-848-1	Polyethylene glycol, ether with 4-hydroxy-2,2,6,6-tetramethyl-1-piperidineethanol (2:1) ⚠ Skin Sens. 1, H317	≥1-≤2.5%
CAS: 90529-77-4 EINECS: 292-011-4	1,2,3-Propanetriol, glycidyl ethers ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	≥0.1-<1%

Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information: Immediately remove any clothing soiled by the product.

After inhalation:

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing: Do not induce vomiting; call for medical help immediately.

4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

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Trade name: MorcemColor Epoxi (comp A)

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SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents:**
Use fire extinguishing methods suitable to surrounding conditions.
CO₂, powder or water spray. Fight larger fires with water spray.
- **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
- **5.3 Advice for firefighters**
 - **Protective equipment:** Do not inhale explosion gases or combustion gases.
 - **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
- **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.
Dispose of the material collected according to regulations.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
 - **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage:**
 - **Requirements to be met by storerooms and receptacles:** No special requirements.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:**
Keep container tightly sealed.
Store in a cool place.
Store in dry conditions.
Protect from frost.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**

· Ingredients with limit values that require monitoring at the workplace:
CAS: 1675-54-3 bis[4-(2,3-epoxypropoxy)phenyl]propane
MAK (Germany) vgl. Abschn. IIb
CAS: 3101-60-8 p-tert-butylphenyl 1-(2,3-epoxy)propyl ether
MAK (Germany) als Dampf und Aerosol, vgl. Abschn. IV

 - **Regulatory information** MAK (Germany): MAK- und BAT-Liste

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· DNELs

CAS: 1675-54-3 bis[4-(2,3-epoxypropoxy)phenyl]propane

Oral	DNEL / Long term exposure - Systemic effects	0.5 mg/Kg bw/d (general population)
Dermal	DNEL / Long term exposure - Systemic effects	0.0893 mg/Kg bw/d (general population) 0.75 mg/Kg bw/d (workers)
Inhalative	DNEL / Long term exposure - Systemic effects	0.87 mg/m ³ (general population) 4.93 mg/m ³ (workers)

formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol

Oral	DNEL / Long term exposure - Systemic effects	6.25 mg/Kg bw/d (general population)
Dermal	DNEL / Long term exposure - Systemic effects	62.5 mg/Kg bw/d (general population) 104.15 mg/Kg bw/d (workers)
Inhalative	DNEL / Long term exposure - Systemic effects	8.7 mg/m ³ (general population) 29.39 mg/m ³ (workers)

CAS: 3101-60-8 p-tert-butylphenyl 1-(2,3-epoxy)propyl ether

Dermal	DNEL / Long term exposure - Systemic effects	0.5 mg/Kg bw/d (general population) repeated dose toxicity 1 mg/Kg bw/d (workers) repeated dose toxicity
	DNEL / Long term exposure - Local effects	0.00095 mg/Kg (general population) sensitisation (skin) 0.0016 mg/Kg (workers) sensitisation (skin)
	DNEL / Short term exposure - Systemic effects	0.5 mg/Kg (general population) repeated dose toxicity 1 mg/Kg (workers) repeated dose toxicity
	DNEL / Short term exposure - Local effects	0.00095 mg/Kg (general population) sensitisation (skin) 0.0016 mg/Kg (workers) sensitisation (skin)
Inhalative	DNEL / Long term exposure - Systemic effects	1.75 mg/m ³ (general population) repeated dose toxicity 3.5 mg/m ³ (workers) repeated dose toxicity
	DNEL / Long term exposure - Local effects	1.75 mg/m ³ (general population) repeated dose toxicity 3.5 mg/m ³ (workers) repeated dose toxicity
	DNEL / Short term exposure - Systemic effects	0.5 mg/m ³ (general population) repeated dose toxicity 3.5 mg/m ³ (workers) repeated dose toxicity
	DNEL / Short term exposure - Local effects	3.5 mg/m ³ (workers) repeated dose toxicity

· PNECs

CAS: 1675-54-3 bis[4-(2,3-epoxypropoxy)phenyl]propane

PNEC / water	0.006 mg/l (freshwater) 0.018 mg/l (Intermittent releases (freshwater)) 0.0018 mg/l (Intermittent releases (marine water)) 0.0006 mg/l (marine water)
PNEC / sediment	0.341 mg/Kg dw (freshwater) 0.0341 mg/Kg dw (marine water)
PNEC / soil	0.0647 mg/Kg dw
PNEC / STP	10 mg/l (sewage treatment plant)

formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol

PNEC / water	0.003 mg/l (freshwater) 0.0254 mg/l (intermittent releases)
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Trade name: MorcemColor Epoxi (comp A)

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PNEC / sediment	0.0003 mg/l (marine water) 0.294 mg/Kg dw (freshwater)
PNEC / soil	0.0294 mg/Kg dw (marine water)
PNEC / STP	0.237 mg/Kg dw 10 mg/l (sewage treatment plant)
CAS: 3101-60-8 p-tert-butylphenyl 1-(2,3-epoxy)propyl ether	
PNEC / water	0.0075 mg/l (freshwater) 0.075 mg/l (Intermittent releases (freshwater)) 0.00075 mg/l (marine water)
PNEC / sediment	33.54 mg/Kg dw (freshwater) 3.354 mg/Kg dw (marine water)
PNEC / soil	11.4 mg/Kg dw
PNEC / STP	100 mg/l (sewage treatment plant)

· **Additional information:** The lists valid during the making were used as basis.

· 8.2 Exposure controls

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Do not eat or drink while working.

Keep away from tobacco products.

Avoid close or long term contact with the skin.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Do not inhale gases / fumes / aerosols.

Ensure that washing facilities are available at the work place.

· **Respiratory protection:**



Use suitable respiratory protective device in case of insufficient ventilation.

Filter A/P2

· **Hand protection**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Butyl rubber, BR

Nitrile rubber, NBR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

For the mixture of chemicals mentioned below the penetration time has to be at least 480 minutes (Permeation according to EN 16523-1:2015: Level 6).

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye/face protection**



Tightly sealed goggles

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· **Body protection:** Light weight protective clothing

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Physical state	Liquid
· Colour:	Different according to colouring
· Odour:	Odourless
· Odour threshold:	Not determined.
· Melting point/freezing point:	0 °C
· Boiling point or initial boiling point and boiling range	>200 °C
· Flammability	Non-flammable mixture
· Lower and upper explosion limit	
· Lower:	Not applicable.
	Non-flammable mixture
· Upper:	Not applicable.
	Non-flammable mixture
· Flash point:	Not applicable.
	No flash point up to 100 °C
· Auto-ignition temperature:	Not applicable.
	Non-flammable mixture
· Decomposition temperature:	Not applicable.
	Mixture is not self-reactive, does not contain organic peroxide and does not decompose under foreseen conditions of use
· pH	Not applicable.
	Mixture is non-soluble (in water).
· Viscosity:	
· Kinematic viscosity	Reopexic behavior
· Solubility	
· water:	Insoluble.
· Partition coefficient n-octanol/water (log value)	Not applicable.
	The product is a mixture
· Vapour pressure:	Not applicable.
· Density and/or relative density	
· Density at 20 °C:	1.55-1.65 g/cm ³
· Relative gas density	Heavier than air

· 9.2 Other information

· Appearance:	
· Form:	Pasty
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· VOC (EC)	0 %
· Change in condition	
· Evaporation rate	Not determined.

· **Information with regard to physical hazard classes** Void

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.

· 10.2 Chemical stability

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· **10.3 Possibility of hazardous reactions** Reacts with strong acids and oxidising agents.

· **10.4 Conditions to avoid** To avoid thermal decomposition do not overheat.

· **10.5 Incompatible materials:** No further relevant information available.

· **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

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Trade name: MorcemColor Epoxi (comp A)

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SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

· **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values relevant for classification:**

CAS: 1675-54-3 bis[4-(2,3-epoxypropoxy)phenyl]propane

Oral LD50 >15,000 mg/kg (rat)

Dermal LD50 >2,000 mg/kg (rat)

formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol

Oral LD50 >5,000 mg/kg (rat) (OECD TG 401: Acute Oral Toxicity)

Dermal LD50 >2,000 mg/kg (rat) (OECD TG 402: Acute Dermal Toxicity)

CAS: 3101-60-8 p-tert-butylphenyl 1-(2,3-epoxy)propyl ether

Oral LD50 >2,000 mg/kg (rat) (OECD TG 425: Acute Oral Toxicity: Up-and-Down Procedure)

Dermal LD50 >2,000 mg/kg (rat) (OECD TG 402: Acute Dermal Toxicity)

· **Primary irritant effect:**

· **Skin corrosion/irritation**

Causes skin irritation.

· **Serious eye damage/irritation**

Causes serious eye irritation.

· **Respiratory or skin sensitisation**

May cause an allergic skin reaction.

· **Germ cell mutagenicity** Based on available data, the classification criteria are not met.

· **Carcinogenicity** Based on available data, the classification criteria are not met.

· **Reproductive toxicity** Based on available data, the classification criteria are not met.

· **STOT-single exposure** Based on available data, the classification criteria are not met.

· **STOT-repeated exposure** Based on available data, the classification criteria are not met.

· **Aspiration hazard** Based on available data, the classification criteria are not met.

11.2 Information on other hazards

· **Endocrine disrupting properties**

None of the ingredients is listed.

SECTION 12: Ecological information

12.1 Toxicity

· **Aquatic toxicity:**

CAS: 1675-54-3 bis[4-(2,3-epoxypropoxy)phenyl]propane

EC50 / 48h 1.8 mg/l (crustacea - Daphnia magna)

LC50 / 96h 2 mg/l (fish - Oncorhynchus mykiss)

ErC50 / 72h 11 mg/l (algae - Scenedesmus capricornutum)

NOEC / 72h 4.2 mg/l (algae - Scenedesmus capricornutum)

NOEC / 21d 0.3 mg/l (crustacea - Daphnia magna) (OECD TG 211: Daphnia magna Reproduction Test)

formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol

EC50 / 48h 2.55 mg/l (crustacea - Daphnia magna)

LC50 / 96h 2.54 mg/l (fish - Leuciscus idus melanotus)

EC50 / 72h 1.8 mg/l (algae - Selenastrum capricornutum) (OECD TG 201: Alga, Growth Inhibition Test)

CAS: 41638-13-5 Dipropylene glycol diglycidyl ether

EC50 / 48h 90 mg/l (crustacea - Daphnia magna)

LC50 / 96h 67 mg/l (fish)

CAS: 3101-60-8 p-tert-butylphenyl 1-(2,3-epoxy)propyl ether

EC50 / 48h 67.9 mg/l (crustacea - Daphnia magna) (OECD TG 202: Daphnia sp. Acute Immobilisation Test)

LC50 / 96h 7.5 mg/l (fish - Oncorhynchus mykiss) (OECD TG 203: Fish, Acute Toxicity Test)

EC50 / 72h 9 mg/l (algae - Pseudokirchneriella subcapitata) (OECD TG 201: Alga, Growth Inhibition Test)

12.2 Persistence and degradability

CAS: 1675-54-3 bis[4-(2,3-epoxypropoxy)phenyl]propane

Ready Biodegradability / 28d 6-12 % (OECD TG 301 B: CO₂ Evolution Test)

CAS: 3101-60-8 p-tert-butylphenyl 1-(2,3-epoxy)propyl ether

Ready Biodegradability / 28d 1.1 % (OECD TG 301 D: Closed Bottle)

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Trade name: MorcemColor Epoxi (comp A)

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- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
 - **Remark:** Harmful to fish
 - **Additional ecological information:**
 - **General notes:**
 - Harmful to aquatic organisms
 - Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
 - Do not allow product to reach ground water, water course or sewage system.
 - Danger to drinking water if even small quantities leak into the ground.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
 - **Recommendation**
 - Disposal must be made according to official regulations.
 - Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
 - **Recommendation:**
 - Disposal must be made according to official regulations.
 - Packagings that may not be cleansed are to be disposed of in the same manner as the product.

SECTION 14: Transport information

· 14.1 UN number or ID number	
· ADR/RID/ADN, ADN, IMDG, IATA	Void
· 14.2 UN proper shipping name	
· ADR/RID/ADN, ADN, IMDG, IATA	Void
· 14.3 Transport hazard class(es)	
· ADR/RID/ADN, ADN, IMDG, IATA	
· Class	Void
· 14.4 Packing group	
· ADR/RID/ADN, IMDG, IATA	Void
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· UN "Model Regulation":	Void

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
 - Regulation (EC) No 1907/2006 (REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals)
 - Regulation (EC) No 1272/2008 (CLP - Classification, Labelling and Packaging of substances and mixtures)
 - Compilation of Safety Data Sheet: Reg.UE n. 878/2020 (amending Reg.EC n.1907/2006, Annex II)

- **REACH**
 - **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3
- **Directive 2012/18/EU**
 - **Named dangerous substances - ANNEX I** None of the ingredients is listed.

- **REGULATION (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

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Trade name: MorcemColor Epoxi (comp A)

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· **REGULATION (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H411 Toxic to aquatic life with long lasting effects.

H412 Harmful to aquatic life with long lasting effects.

· Classification according to Regulation (EC) No 1272/2008

Skin corrosion/irritation

Serious eye damage/irritation

Skin sensitisation

Hazardous to the aquatic environment - long-term (chronic) aquatic hazard

The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

· Version number of previous version: 5

· Abbreviations and acronyms:

REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals

CLP: Classification, Labelling and Packaging

TLV: Threshold Limit Value

TLV-TWA: Threshold Limit Value - Time Weighted Average

TLV-STEL: Threshold Limit Value - Short Term Exposure Limit

PEL: Permissible Exposure Limits (Limiti di esposizione consentiti)

REL: Recommended Exposure Limits (Limiti di esposizione raccomandati)

IOELV: Indicative Occupational Exposure Limit Value

WEELS: Workplace Environmental Exposure Limits (Limiti di esposizione ambientale sul posto di lavoro)

BEI: Biological Exposure Indices

LC50: Lethal Concentration, 50 percent

EC50: Effective Concentration, 50 percent

ErC50: Effective Concentration, 50 percent, reduction of growth rate

NOEC: No-Observed Effect Concentration

NOELR: No-Observed Effect Loading Rate

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Skin Sens. 1: Skin sensitisation – Category 1

Skin Sens. 1A: Skin sensitisation – Category 1A

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

· *** Data compared to the previous version altered.**

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: MorcemColor Epoxi (comp B)

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

Use for consumption and by professional operators.

Application of the substance / the mixture *Hardener*

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

GRUPO PUMA ESPAÑA S.L.
AVDA. AGRUPACIÓN CÓRDOBA, NUM. 17
14014 CÓRDOBA - CÓRDOBA - ESPAÑA
Tfno.: +34 957 102 210 - Fax: +34 957 44 19 92
fds@grupopuma.com
<http://www.grupopuma.com>

1.4 Emergency telephone number:

957 102 210 (Horario de atención: 08:30 – 13:30 y de 16:00 – 19:00)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

Skin Sens. 1 H317 May cause an allergic skin reaction.

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS05 GHS07 GHS09

Signal word *Danger*

Hazard-determining components of labelling:

Fatty acids C18 unsat, reaction products with tetraethylenepentamine

Amines, polyethylenepoly-, triethylenetetramine fraction

Reaction mass of trientine and trientine, mono- and di-propoxylated

Hazard statements

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.

Trade name: MorcemColor Epoxi (comp B)

(Contd. of page 1)

- P102 Keep out of reach of children.
P260 Do not breathe mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information:

EUH071 Corrosive to the respiratory tract.

2.3 Other hazards

Results of PBT and vPvB assessment

- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Determination of endocrine-disrupting properties** Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 1226892-45-0 EC number: 629-725-6 Reg.nr.: 01-2119487006-38-XXXX	Fatty acids C18 unsat, reaction products with tetraethylenepentamine ⚠ Skin Corr. 1C, H314; Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400 (M=1); Aquatic Chronic 1, H410 (M=1); ⚠ Skin Sens. 1A, H317	≥75-≤100%
CAS: 26950-63-0 EC number: 942-835-1 Reg.nr.: 01-2120098765-38-XXXX	Reaction mass of trientine and trientine, mono- and di-propoxylated ⚠ Aquatic Chronic 2, H411; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1B, H317	≥15-≤20%
CAS: 90640-67-8 EINECS: 292-588-2 Reg.nr.: 01-2119487919-13-XXXX	Amines, polyethylenepoly-, triethylenetetramine fraction ⚠ Skin Corr. 1B, H314; Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; Acute Tox. 3, H312; Skin Sens. 1, H317; Aquatic Chronic 3, H412, EUH071	5-10%

Additional information:

For the wording of the listed hazard phrases refer to section 16.

If no ATE values are present, refer to LD/LC50 values in section 11.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information: Immediately remove any clothing soiled by the product.

After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

After eye contact:

Rinse opened eye for several minutes under running water. Then consult a doctor.

Protect unharmed eye.

After swallowing:

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; call for medical help immediately.

4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

5.2 Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

(Contd. on page 3)

Trade name: MorcemColor Epoxi (comp B)

(Contd. of page 2)

- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear fully protective suit.
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
- **Additional information**
Cool endangered receptacles with water spray.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
- **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Pick up mechanically.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Use only in well ventilated areas.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage:**
 - **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Store only in the original receptacle.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:**
Store receptacle in a well ventilated area.
Keep container tightly sealed.
Protect from heat and direct sunlight.
Protect from frost.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
 - **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· DNELs

CAS: 1226892-45-0 Fatty acids C18 unsat, reaction products with tetraethylenepentamine

Oral	DNEL / Long term exposure - Systemic effects	0.5 mg/Kg bw/d (general population)
Dermal	DNEL / Long term exposure - Systemic effects	0.5 mg/Kg bw/d (general population) 1.4 mg/Kg bw/d (workers)
Inhalative	DNEL / Long term exposure - Systemic effects	1.74 mg/m ³ (general population) 9.87 mg/m ³ (workers)

CAS: 26950-63-0 Reaction mass of trientine and trientine, mono- and di-propoxylated

Dermal	DNEL / Long term exposure - Systemic effects	2 mg/Kg bw/d (workers)
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Trade name: MorcemColor Epoxi (comp B)

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Inhalative	DNEL / Long term exposure - Systemic effects	3.51 mg/m ³ (workers)
CAS: 90640-67-8 Amines, polyethylenepoly-, triethylenetetramine fraction		
Oral	DNEL / Long term exposure - Systemic effects	0.14 mg/Kg bw/d (general population)
Inhalative	DNEL / Long term exposure - Systemic effects	0.096 mg/m ³ (general population) 0.54 mg/m ³ (workers)
· PNECs		
CAS: 1226892-45-0 Fatty acids C18 unsat, reaction products with tetraethylenepentamine		
PNEC / water	0.0307 mg/l (freshwater) 0.00612 mg/l (intermittent releases) 0.00307 mg/l (marine water)	
PNEC / sediment	119.8 mg/Kg dw (freshwater) 11.98 mg/Kg dw (marine water)	
PNEC / soil	9.44 mg/Kg dw	
PNEC / STP	2.3 mg/l (sewage treatment plant)	
CAS: 26950-63-0 Reaction mass of trientine and trientine, mono- and di-propoxylated		
PNEC / water	0.0041 mg/l (freshwater) 0.041 mg/l (intermittent releases) 0.00041 mg/l (marine water)	
PNEC / sediment	0.171 mg/Kg dw (freshwater) 0.0171 mg/Kg dw (marine water)	
PNEC / soil	0.00317 mg/Kg dw	
PNEC / STP	4.3 mg/l (sewage treatment plant)	
CAS: 90640-67-8 Amines, polyethylenepoly-, triethylenetetramine fraction		
PNEC / water	0.0268 mg/l (freshwater) 0.2 mg/l (intermittent releases) 0.00268 mg/l (marine water)	
PNEC / sediment	8.572 mg/Kg dw (freshwater) 0.8572 mg/Kg dw (marine water)	
PNEC / soil	1.25 mg/Kg dw	
PNEC / STP	0.13 mg/l (sewage treatment plant)	

· **Additional information:** The lists valid during the making were used as basis.

· 8.2 Exposure controls

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Do not eat or drink while working.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

Ensure that washing facilities are available at the work place.

· **Respiratory protection:**



Use suitable respiratory protective device in case of insufficient ventilation.

Short term filter device:

Filter A

· **Hand protection**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

(Contd. on page 5)

Trade name: MorcemColor Epoxi (comp B)

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· **Material of gloves**

Butyl rubber, BR

Nitrile rubber, NBR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye/face protection**



Tightly sealed goggles

· **Body protection:** Use protective suit.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· **Physical state**

Liquid

· **Colour:**

Amber coloured

· **Odour:**

Amine-like

· **Odour threshold:**

Not determined.

· **Melting point/freezing point:**

0 °C

· **Boiling point or initial boiling point and boiling range**

200 °C

· **Flammability**

Non-flammable mixture

· **Lower and upper explosion limit**

· **Lower:**

Not applicable.

Non-flammable mixture

· **Upper:**

Not applicable.

Non-flammable mixture

· **Flash point:**

130 °C

· **Auto-ignition temperature:**

Non-flammable mixture

· **Decomposition temperature:**

Not applicable.

Mixture is not self-reactive, does not contain organic peroxide and does not decompose under foreseen conditions of use

10-11

· **pH**

· **Viscosity:**

· **Kinematic viscosity at 40 °C**

500-800 mm²/s

· **Dynamic at 25 °C:**

1.000 mPas

· **Solubility**

· **water:**

Slightly soluble.

· **Partition coefficient n-octanol/water (log value)**

Not applicable.

The product is a mixture

Not determined.

· **Vapour pressure:**

· **Density and/or relative density**

· **Density at 20 °C:**

0.98 g/cm³

· **Vapour density**

Not determined.

· **Relative gas density**

Heavier than air

· **Particle characteristics**

Fluid

· 9.2 Other information

· **Appearance:**

· **Form:**

Liquid

· **Important information on protection of health and environment, and on safety.**

· **Ignition temperature:**

Product is not selfigniting.

· **Explosive properties:**

Product does not present an explosion hazard.

· **Solvent content:**

· **VOC (EC)**

0.00 %

· **Change in condition**

· **Evaporation rate**

Not determined.

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Trade name: MorcemColor Epoxi (comp B)

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· **Information with regard to physical hazard classes** Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
 - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values relevant for classification:**

ATE (Acute Toxicity Estimates)

Oral	LD50	28,600-34,320 mg/kg (rat)
Dermal	LD50	24,417-29,300 mg/kg

CAS: 1226892-45-0 Fatty acids C18 unsat, reaction products with tetraethylenepentamine

Oral	LD50	>2,000 mg/kg (rat) (OECD TG 423: Acute Oral toxicity - Acute Toxic Class Method)
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CAS: 26950-63-0 Reaction mass of trientine and trientine, mono- and di-propoxylated

Oral	LD50	4,500 mg/kg (rat) (OECD TG 401: Acute Oral Toxicity)
Dermal	LD50	2,150 mg/kg (rat) (OECD TG 402: Acute Dermal Toxicity)

CAS: 90640-67-8 Amines, polyethylenepoly-, triethylenetetramine fraction

Oral	LD50	1,716 mg/kg (rat) (OECD TG 401: Acute Oral Toxicity)
Dermal	LD50	1,465 mg/kg (rabbit) (OECD TG 402: Acute Dermal Toxicity)

- **Primary irritant effect:**
 - **Skin corrosion/irritation**
Causes severe skin burns and eye damage.
 - **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

11.2 Information on other hazards

· **Endocrine disrupting properties**

None of the ingredients is listed.

SECTION 12: Ecological information

- **12.1 Toxicity**
 - **Aquatic toxicity:**
No further relevant information available.

CAS: 1226892-45-0 Fatty acids C18 unsat, reaction products with tetraethylenepentamine

EC50 / 48h	0.18 mg/l (crustacea - Daphnia magna) (OECD TG 202: Daphnia sp. Acute Immobilisation Test)
LC50 / 96h	0.19 mg/l (fish - Brachydanio rerio) (OECD TG 203: Fish, Acute Toxicity Test)
EC50 / 72h	0.638 mg/l (algae - Pseudokirchneriella subcapitata) (OECD TG 201: Alga, Growth Inhibition Test)

CAS: 26950-63-0 Reaction mass of trientine and trientine, mono- and di-propoxylated

EC50 / 48h	48 mg/l (crustacea - Daphnia magna) (OECD TG 202: Daphnia sp. Acute Immobilisation Test)
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LC50 / 96h	4.1 mg/l (fish - <i>Oncorhynchus mykiss</i>) (OECD TG 203: Fish, Acute Toxicity Test)
ErC50 / 72h	4.1 mg/l (algae - <i>Pseudokirchneriella subcapitata</i>) (OECD TG 201: Alga, Growth Inhibition Test)
CAS: 90640-67-8 Amines, polyethylenepoly-, triethylenetetramine fraction	
EC50 / 48h	31.1 mg/l (crustacea - <i>Daphnia magna</i>)
LC50 / 96h	330 mg/l (fish - <i>Pimephales promelas</i>)
EC50 / 72h	20 mg/l (algae - <i>Pseudokirchneriella subcapitata</i>) (OECD TG 201: Alga, Growth Inhibition Test)

- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
 - **Additional ecological information:**
 - **General notes:**

Must not reach sewage water or drainage ditch undiluted or unneutralised.
Also poisonous for fish and plankton in water bodies.
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
 - **Recommendation**

Disposal must be made according to official regulations.
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
 - **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- **14.1 UN number or ID number**
 - **ADR/RID/ADN, IMDG, IATA** UN2735
- **14.2 UN proper shipping name**
 - **ADR/RID/ADN** AMINES, LIQUID, CORROSIVE, N.O.S. (Fatty acids C18 unsat, reaction products with tetraethylenepentamine), ENVIRONMENTALLY HAZARDOUS
 - **IMDG** AMINES, LIQUID, CORROSIVE, N.O.S. (Fatty acids C18 unsat, reaction products with tetraethylenepentamine), MARINE POLLUTANT
 - **IATA** AMINES, LIQUID, CORROSIVE, N.O.S. (Fatty acids C18 unsat, reaction products with tetraethylenepentamine)
- **14.3 Transport hazard class(es)**
 - **ADR/RID/ADN, IMDG**




 - **Class** 8 Corrosive substances.
 - **Label** 8

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Trade name: MorcemColor Epoxi (comp B)

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· **IATA**



· **Class** 8 Corrosive substances.
· **Label** 8

· **14.4 Packing group**

· **ADR/RID/ADN, IMDG, IATA** II

· **14.5 Environmental hazards:**

· **Marine pollutant:** Symbol (fish and tree)
· **Special marking (ADR/RID/ADN):** Symbol (fish and tree)

· **14.6 Special precautions for user**

· **Hazard identification number (Kemler code):** 80
· **EMS Number:** F-A, S-B
· **Segregation groups** (SGG18) Alkalis

· **14.7 Maritime transport in bulk according to IMO instruments**

Not applicable.

· **Transport/Additional information:**

· **ADR/RID/ADN**
· **Limited quantities (LQ)** 1L
· **Transport category** 2
· **Tunnel restriction code** E

· **IMDG**
· **Limited quantities (LQ)** 1L

· **UN "Model Regulation":** UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (FATTY ACIDS C18 UNSAT, REACTION PRODUCTS WITH TETRAETHYLENEPENTAMINE), 8, II, ENVIRONMENTALLY HAZARDOUS

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
Regulation (EC) No 1907/2006 (REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals)
Regulation (EC) No 1272/2008 (CLP - Classification, Labelling and Packaging of substances and mixtures)
Compilation of Safety Data Sheet: Reg.UE n. 878/2020 (amending Reg.EC n.1907/2006, Annex II)

· **REACH**

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.
· **Seveso category E1** Hazardous to the Aquatic Environment
· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t
· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t

· **REGULATION (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

· **REGULATION (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

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Trade name: MorcemColor Epoxi (comp B)

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· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.
EUH071 Corrosive to the respiratory tract.

· Classification according to Regulation (EC) No 1272/2008

Skin corrosion/irritation
Serious eye damage/irritation
Skin sensitisation
Hazardous to the aquatic environment - short-term (acute) aquatic hazard
Hazardous to the aquatic environment - long-term (chronic) aquatic hazard

The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

· Version number of previous version: 6

· Abbreviations and acronyms:

REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
CLP: Classification, Labelling and Packaging
TLV: Threshold Limit Value
TLV-TWA: Threshold Limit Value - Time Weighted Average
TLV-STEL: Threshold Limit Value - Short Term Exposure Limit
PEL: Permissible Exposure Limits (Limiti di esposizione consentiti)
REL: Recommended Exposure Limits (Limiti di esposizione raccomandati)
IOELV: Indicative Occupational Exposure Limit Value
WEELS: Workplace Environmental Exposure Limits (Limiti di esposizione ambientale sul posto di lavoro)
BEI: Biological Exposure Indices
LC50: Lethal Concentration, 50 percent
EC50: Effective Concentration, 50 percent
ErC50: Effective Concentration, 50 percent, reduction of growth rate
NOEC: No-Observed Effect Concentration
NOELR: No-Observed Effect Loading Rate
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
ATE: Acute toxicity estimate values
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Corr. 1C: Skin corrosion/irritation – Category 1C
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1A: Skin sensitisation – Category 1A
Skin Sens. 1B: Skin sensitisation – Category 1B
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

· * Data compared to the previous version altered.