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:	**DRAP005d**
Product name	**AQUASTOP T 50 Comp. A**

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

Intended use	**Three-component waterproofing epoxy cementitious coating, component 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:

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:

SECTION 2. Hazards identification ... / >>

Signal words: Warning

Hazard statements:

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

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)
Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)		
CAS 9003-36-5	30 ≤ x < 50	**Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411**
EC 500-006-8		
INDEX		
Reg. no. 01-2119454392-40-XXXX		
Reaction product: bisphenol-A-epichlorohydrin and epoxy resins (average molecular weight <= 700)		
CAS 25068-38-6	9 ≤ x < 25	**Eye Irrit. 2 H319, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411**
EC 500-033-5		
INDEX 603-074-00-8		
Reg. no. 01-2119456619-26-XXXX		
1-methoxy-2-propanol		
CAS 107-98-2	1 ≤ x < 5	**Flam. Liq. 3 H226, STOT SE 3 H336**
EC 203-539-1		
INDEX 603-064-00-3		
Reg. no. 01-2119457435-35-XXXX		
C12-C16 Propoxylated ethoxylated alcohol		
CAS 68213-24-1	0,5 ≤ x < 1	**Aquatic Acute 1 H400 M=1**
EC		
INDEX		

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

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

SECTION 4. First aid measures ... / >>

person, unless authorised by a doctor.

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

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

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

Information not available

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.
UNSUITABLE EXTINGUISHING EQUIPMENT
None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Do not breathe combustion products.

5.3. Advice for firefighters

GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS
Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

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

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

SECTION 7. Handling and storage ... / >>

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store in a cool and well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory References:

ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
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

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

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic 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

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

Predicted no-effect concentration - PNEC

Normal value in fresh water	3	µg/l
Normal value in marine water	0,3	µg/l
Normal value for fresh water sediment	0,5	mg/kg/d
Normal value for marine water sediment	0,5	mg/kg/d
Normal value for water, intermittent release	0,013	mg/l
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	0,05	mg/kg/d

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral		0,75 mg/kg bw/d		0,75 mg/kg bw/d				
Inhalation		0,75 mg/m3		0,75 mg/m3		12,3 mg/m3		12,3 mg/m3
Skin		3,6 mg/kg bw/d		3,6 mg/kg bw/d	8,3	8,3 mg/kg bw/d		8,3 mg/kg bw/d

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

1-methoxy-2-propanol

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
VLEP	ITA	375	100	568	150	SKIN
OEL	EU	375	100	568	150	SKIN
TLV-ACGIH			50		100	

Predicted no-effect concentration - PNEC

Normal value in fresh water	10	mg/l
Normal value in marine water	1	mg/l
Normal value for fresh water sediment	52,3	mg/kg
Normal value for marine water sediment	5,2	mg/kg
Normal value for water, intermittent release	100	mg/l
Normal value of STP microorganisms	100	mg/l
Normal value for the terrestrial compartment	4,59	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral								33 mg/kg bw/d
Inhalation				43,9 mg/m3	553,5 mg/m3	553,5 mg/m3		369 mg/m3
Skin				78 mg/kg bw/d				183 mg/kg bw/d

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.

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

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties		Value	Information
Appearance		liquid	
Colour		straw yellow	
Odour		odourless	
Odour threshold		Not available	
pH		Not available	
Melting point / freezing point		Not available	
Initial boiling point	>	200 °C	
Boiling range		Not available	
Flash point		150 °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		1,1 g/cm3	
Solubility		soluble in organic solvents	
Partition coefficient: n-octanol/water		Not available	
Auto-ignition temperature		Not available	
Decomposition temperature		Not available	
Viscosity		800 mPa.s	
Explosive properties		Not available	
Oxidising properties		Not available	

9.2. Other information

VOC (Directive 2010/75/EC) : 3,00 % - 33,00 g/litre

SECTION 10. Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

The vapours may also form explosive mixtures with the air.

10.4. Conditions to avoid

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

10.5. Incompatible materials

Information not available

10.6. Hazardous decomposition products

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

SECTION 11. Toxicological information

11.1. Information on toxicological effects

1-methoxy-2-propanol
Low toxicity in case of ingestion. Small amounts ingested incidentally during normal operations should not cause harm; however the ingestion of larger quantities may cause damage.

Prolonged skin contact is unlikely to produce harmful absorption of the substance.

A brief exposure (a few minutes) is unlikely to cause harmful effects. The smell is unpleasant at 100 p.p.m.; higher levels produce irritation to the eye, nose and throat and are intolerable to 1000 p.p.m .. Anesthetic effects have been observed at / or above 1000 p.p.m .. LC50, Rat, 6 h, steam,> 25.8 mg / l

Subacute skin toxicity
Parameter: NOAEL (C)
Route of exposure: Dermal
Species: Rabbit
Effective dose:> 1000 mg / kg bw / day
Method: OECD 410

Subacute inhalative toxicity
Parameter: NOAEL (C
Route of exposure: Inhalation
Species: Rabbit
Effective dose: 1000 ppm
Method: OECD 413

Metabolism, toxicokinetics, mechanism of action and other information

1-methoxy-2-propanol
Methyl ether propylene glycol is easily absorbed orally and by inhalation. A 100% absorption rate can be taken into account for these routes. Human data have shown that dermal absorption of vapor through the skin is limited. When exposed the whole body (normal clothing), the steam provided a contribution of about 4-8% to the total body load. An in vitro absorption rate of 1.17 mg / cm2 / h was estimated for propyleneglycol methyl ether on human skin. If the dermal absorption of liquid methyl ether propylene glycol is compared with other glycolethers, available data show that propylene glycol methyl ether is less absorbed than ethylene glycol butyl ether (it is estimated that methyl ether propylene glycol is twice less absorbed by butyl ether ethylene glycol). According to these data, a 30% cutaneous absorption factor for liquid propyleneglycol methyl ether should be considered as the worst value for risk assessment.

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-A-epichlorohydrin and epoxy resins (average molecular weight <= 700)

LD50 (Oral)	> 11400 mg/kg Rat

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

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1-methoxy-2-propanol

LD50 (Oral)	4016 mg/kg Rat
LD50 (Dermal)	> 2000 mg/kg Rabbit
LC50 (Inhalation)	> 25,8 mg/l/6h Rat

C12-C16 Propoxylated ethoxylated alcohol

LD50 (Oral)	> 2000 mg/kg Rat, range 2000 - 5000 mg/kg

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.

Reaction product: bisphenol-A-epichlorohydrin and epoxy resins (average molecular weight <= 700)
Acute toxicity - inhalation: Due to the very low vapor pressure (saturated atmosphere = 0.008 ppb), significant studies on the effects of acute inhalation could not be performed.

Acute toxicity - dermal: 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.

1-methoxy-2-propanol
Acute oral toxicity
Low toxicity in case of ingestion. Small amounts ingested incidentally during normal operations should not cause harm; however the ingestion of larger quantities may cause damage.

Acute dermal toxicity
Prolonged skin contact is unlikely to produce harmful absorption of the substance.

Acute toxicity by inhalation
A brief exposure (a few minutes) is unlikely to cause harmful effects. The smell is unpleasant at 100 ppm .; higher levels produce eye, nose and throat irritations and are intolerable at 1000 ppm. Anesthetic effects have been observed at / or above 1000 ppm.

SKIN CORROSION / IRRITATION

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 Acete 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

SECTION 11. Toxicological information ... / >>

Score: 0Observation: 1 - 168 h

Result: Skin - Slight irritation
Species: rabbit
Exposure: 24 h

Reaction product: bisphenol-A-epichlorohydrin and epoxy resins (average molecular weight <= 700)
Result: skin - erythema / eschar 404 Acute Dermal Irritation / Corrosion
Species: rabbit
Score 1.5 -2

Result: Skin - Edema 404 Acute Dermal Irritation / Corrosion
Species: Rabbit
Score: 1.0 - 1.5

Result: eyes - 405 Acute Eye Irritation / Corrosion
Species: Rabbit
Score: 0

Result: Conjunctive redness
Species: Rabbit
Score: 0.7

Result: Skin - Moderately irritating
Species: Rabbit
Exposure: 24 h

Result: Skin - Strongly irritating
Species: rabbit
Exposure: 24 h

Result: eyes - mild irritant
Species: rabbit

1-methoxy-2-propanol
Species: Rabbit
Method: Directive 67/548 / EEC, Annex V, B.4.
Result: No skin irritation
BPL: yes

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation

1-methoxy-2-propanol
Species: Rabbit
Method: Directive 67/548 / EEC, Annex V, B.5.
Result: No eye irritation
BPL: yes

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

1-methoxy-2-propanol
Type of test: Maximization Test
Route of exposure: Dermal
Species: Guinea pig
Method: Directive 67/548 / EEC, Annex V, B.6.
Result: Does not cause skin sensitization.
BPL: yes

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C12-C16 Propoxylated ethoxylated alcohol
Species: Guinea pig
Result: negative
Method: Guideline 406 for the OECD Test

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 BPFDGE. Ten male guinea pigs were given 0.4 ml of the test substance topically once a week for three weeks. A positive control of BPFDGE 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 BPFDGE liquid epoxy resin. The negative control had 0 positive reactions; BPFDGE 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

Reaction product: bisphenol-A-epichlorohydrin and epoxy resins (average molecular weight <= 700)
In a study with an LLNA assay on mice conducted according to the OECD standard n. 429, the estimated EC3 corresponded to a concentration of 5.7%; this result suggests that BADGE is a moderate skin sensitizer in this test system. In a guinea pig maximization study according to the OECD standard n. 406, BADGE induced a positive skin reaction in 100% of the experimental animals at a stimulus dose with a concentration of 50%. Therefore, BADGE is an "extreme" skin sensitizer in the conditions of this study. BADGE was positive for skin sensitization also in a study with the Buehler method on guinea pig conducted according to OCSE standard n. 406

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

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, BPFDGE 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 tests, and MutaMouse on rat, no evidence of genotoxicity was observed. Results from other in vivo genotoxicity tests also support these negative results for BPFDGE. 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

Reaction product: bisphenol-A-epichlorohydrin and epoxy resins (average molecular weight <= 700)
In several studies it was found that BADGE induces gene mutation in experimental strains Ames / Salmonella TA1535 and TA100. In general, mutagenic activity was greater without S9 metabolic activation of the liver. Induced gene mutation in L5178Y mouse lymphoma cells. Induced gene mutation and chromosomal damage in V79 Chinese hamster cells. Induced cell transformation in Syrian hamster BHK cells based on clonal growth in soft agar. It did not induce evidence of chromosomal damage in a study with an

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oral probe in a test of the dominant lethal on mice conducted up to a high dosage level of 10 grams / kg and in a micronuclear test on mice conducted up to a high dose of 5000 mg / kg. Negative in a spermatocytic cytogenetic assay on male mice with treatment for 5 days by oral probe up to a high dose of 3000 mg / kg. It did not induce an increase in the frequency of chromosomal damage in a cytogenetic assay on bone marrow cells on a Chinese hamster using an oral probe up to a high dose of 3300 mg / kg. It did not induce an increase in DNA strand breaks in rat liver cells after treatment with oral gavage with 500 mg / kg, measured by alkaline elution.

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)
È stata valutata la capacità del Bisfenolo F diglicidiletere (BPFDGE) 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 diglicidiletere bisfenolo F (BPFDGE) non ha indotto alcun risultato negativo di incidenza di tumori o effetti cutanei locali. Pertanto, il BPFDGE 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 diesposizione: 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

Reaction product: bisphenol-A-epichlorohydrin and epoxy resins (average molecular weight <= 700)
In a study with an oral rat probe according to the OECD standard n. 453 there was no evidence of carcinogenicity up to the high dose level of 100 mg / kg / day. Dermal exposure studies were performed in male mice and female rats according to OECD regulation n. 453. No evidence of carcinogenicity was observed in male mice treated up to the high dose of 100 mg / kg / day and female rats exposed up to the high dose of 1000 mg / kg / day.

1-methoxy-2-propanol
Parameter: NOAEC
Route of exposure: Mouse
Effective dose: 3000 ppm

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)
The bisphenol A diglycidylether (DGEBPA) has been tested for its embryo / fetal toxicity and teratogenicity in pregnant rabbits. The DGEBPA 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

SECTION 11. Toxicological information ... / >>

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.

Reaction product: bisphenol-A-epichlorohydrin and epoxy resins (average molecular weight <= 700)
BADGE did not induce any evidence of developmental toxicity in rats and rabbits exposed by oral probe, or in cutaneously treated rabbits, in BPL studies according to the OECD standard n. 414. Studies with an oral probe were conducted up to a high dose level of 180 mg / kg / day which produced maternal toxicity based on the reduction in body weight gain. The rabbit skin toxicity study was conducted up to a high dose of 300 mg / kg / day which induced maternal toxicity based on the reduction in body weight gain.

1-methoxy-2-propanol
It was toxic to the fetus in laboratory animals at doses toxic to the mother. It did not cause birth defects in laboratory animals.

In studies on laboratory animals, effects on reproduction were found only at doses that produced significant toxicity in the parents.

Adverse effects on sexual function and fertility
Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)
Species: rat, male and female
Method of application: oral
Method: OECD 416
Result: There was no effect on fertility and early embryonic development.

1-methoxy-2-propanol
Parameter: NOAEL (Fetal development)
Route of exposure: Rat
Effective dose: 1500 ppm
Method: OECD 414

Adverse effects on development of the offspring
Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 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

1-methoxy-2-propanol
Parameter: NOAEL (C)
Route of exposure: Rat
Effective dose: 300 ppm

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

1-methoxy-2-propanol
May cause drowsiness or dizziness.
Route of exposure: Inhalation
Target organs: Central nervous system

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

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

1-methoxy-2-propanol
Excessive exposure symptoms can be anesthetic or narcotic effects: dizziness and lightheadedness may occur.
In animals, effects have been reported on the following organs: Kidney, Liver.

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.

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

CI50 (activated sludge)> 100 mg / l
Exposure time: 3 h
Static test

1-methoxy-2-propanol
Acute toxicity for algae / aquatic plants
CE50r, Pseudokirchneriella subcapitata (chlorophytic algae), Static test, 7 d, Growth inhibition,> 1,000 mg / l, OECD test method guideline 201 or equivalent

Bacterial toxicity
Parameter: IC10
Species: Activated sludge
Effective dose:> 1000 mg / l
Exposure time: 3 h

C12-C16 Propoxylated ethoxylated alcohol
Very toxic to aquatic organisms.

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

LC50 - for Fish	1,3 mg/l/96h 203 Fish, Acute Toxicity Test
EC50 - for Crustacea	2,1 mg/l/48h 202 Daphnia sp. Acute Immobilization Test and Reproduction Test
EC50 - for Algae / Aquatic Plants	> 11 mg/l/72h Algae
Chronic NOEC for Crustacea	0,3 mg/l 11 Daphnia Magna Reproduction Test (21 d)

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

1-methoxy-2-propanol

LC50 - for Fish	6812 mg/l/96h Leuciscus idus, Prova statica, DIN 38412
EC50 - for Crustacea	21100 mg/l/48h Daphnia magna. OECD 202

C12-C16 Propoxylated ethoxylated alcohol

LC50 - for Fish	> 0,1 mg/l/96h Oncorhynchus mykiss
EC50 - for Crustacea	> 1 mg/l/48h Daphnia magna

12.2. Persistence and degradability

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

SECTION 12. Ecological information ... / >>

Reaction product: bisphenol-A-epichlorohydrin and epoxy resins (average molecular weight <= 700)
The level of biodegradation in an "improved" OECD 301F study was 5% within the 28-day contact period. Biodegradation has reached 6 - 12% after 28 days of contact in a study conducted according to the OECD standard n. 301B. Therefore BADGE is not readily biodegradable under the conditions of the studies.

1-methoxy-2-propanol
Biodegradability: The material is easily biodegradable. Pass the (I) OECD test for the immediate biodegradability.
10 day window period: OK
Biodegradation: 96%
Exposure time: 28 d
Method: OECD 301E test method guideline or equivalent

Photodegradation
Type of test: Half-life (indirect photolysis)
Sensitizing: OH radicals
Atmospheric half-life: 7.8 h
Method: estimated

C12-C16 Propoxylated ethoxylated alcohol
Result: rapidly biodegradable.
Method: 301D OECD Test Guideline

1-methoxy-2-propanol
Rapidly degradable

C12-C16 Propoxylated ethoxylated alcohol
Rapidly degradable

12.3. Bioaccumulative potential

Reaction product: bisphenol-F-epichlorohydrin and epoxy resins (average molecular weight <= 700)
BCF: 150 150.00
Potential: low

Reaction product: bisphenol-A-epichlorohydrin and epoxy resins (average molecular weight <= 700)
LogPOW: 2.64 - 3.78
BCF: 3 - 31 31.00
Potential: low

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

Partition coefficient: n-octanol/water	2,7 Log Kow
BCF	150

1-methoxy-2-propanol

Partition coefficient: n-octanol/water	0,37 Log Kow Sperimentale
BCF	< 2

12.4. Mobility in soil

1-methoxy-2-propanol
The mobility potential in the soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 0.2 - 1.0 estimated

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

Partition coefficient: soil/water	4460 OECD 121

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.

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 ≤ 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 ≤ 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 ≤ 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. (Prodotto di reazione: bisfenolo-F-epicloridrina; resine epossidiche (peso molecolare medio ≤ 700); Prodotto di reazione: bisfenolo-A-epicloridrina e resine epossidiche (peso molecolare medio ≤ 700))
IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Prodotto di reazione: bisfenolo-F-epicloridrina; resine epossidiche (peso molecolare medio ≤ 700); Prodotto di reazione: bisfenolo-A-epicloridrina e resine epossidiche (peso molecolare medio ≤ 700))
IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Prodotto di reazione: bisfenolo-F-epicloridrina; resine epossidiche (peso molecolare medio ≤ 700); Prodotto di reazione: bisfenolo-A-epicloridrina e resine epossidiche (peso molecolare medio ≤ 700))

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

SECTION 14. Transport information ... / >>

14.5. Environmental hazards

ADR / RID: Environmentally Hazardous

IMDG: Marine Pollutant

IATA: Environmentally Hazardous

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 90 Special provision: 274	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	

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: E2

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

Product

Point	3 - 40	

Contained substance

Point	75	Reaction product: bisphenol-A-epichlorohydrin and epoxy resins (average molecular weight <= 700) Reg. no.: 01-2119456619-26-XXXX
Point	75	2-methoxypropanol

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 ≥ 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.

SECTION 15. Regulatory information ... / >>

15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

SECTION 16. Other information

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

Flam. Liq. 3	Flammable liquid, category 3
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
Skin Sens. 1	Skin sensitization, category 1
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
H226	Flammable liquid and vapour.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
EUH205	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

SECTION 16. Other information ... / >>

11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament12. 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 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.