SECTION 1. Identification of the substance/preparation and of the company/undertaking

1.1 Product identifier

Name	**REPOSOL Component A**

1.2. Identified relevant uses of the substance or mixture and non-recommended uses

Description/Use	**Epoxy primer**
UFI	**KWYS-G58M-K243-EJYU**

1.3. Supplier information of the safety data sheet

Company Name	**VOLTECO Spa**
Address	**Via delle Industrie, 47**
District and Country	**31050 Ponzano Veneto (TV) – IT**
Telephone	**+39 0422 9663**
Fax	**+39 0422 966401**
e-mail address of the person in charge of the safety data sheet	**volteco@volteco.it**

1.4. Emergency telephone number

For urgent enquiries, please contact	**+39 0422 9663**

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Product definition	Mixture

The product is classified as dangerous pursuant to the provisions stipulated in EC Regulation No. 1272/2008 (CLP) as amended.
The product requires a safety data sheet that complies with the provisions of EC Regulation No. 1907/2006 and subsequent amendments.
Any additional information concerning the risks for health and/or the environment are given in Sections 11 and 12 of this data sheet.

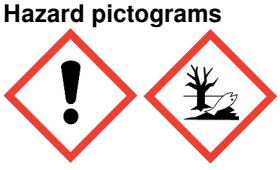
2.1.1 EC Regulation No. 1272/2008 as amended
Classification and hazard statements

Eye Irrit. 2	**H319**	Causes serious eye irritation.
Skin Irrit. 2	**H315**	Causes skin irritation.
Skin Sens. 1	**H317**	May cause an allergic skin reaction.
Aquatic Chronic 2	**H411**	Toxic to aquatic organisms with long-term effects

2.2 Label elements

Hazard labelling pursuant to EC Regulation No. 1272/2008 (CLP) as amended.

Hazard pictograms



Warnings	Irritant - Hazardous for the environment

Hazard statements

H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic organisms with long-term effects
EUH205	Contains epoxy constituents. May cause an allergic reaction.

Precautionary tips

P264	Wash hands before breaks and at the end of the work shift.
P273	Do not release into the environment.
P280	Wear protective gloves/clothing, protect eyes/face.
P302+P352	IN CASE OF SKIN CONTACT: wash with plenty of water and soap.
P333+P313	In case of irritation or a rash, seek medical attention.
Contains	Reaction product: bisphenol A-epichlorohydrin and epoxy resin (molecular weight < = 700)

	Reaction product: bisphenol F-epichlorohydrin and epoxy resin (molecular weight < = 700) oxirane, mono C12-14 alkyloxy methyl derivatives.
Special provisions according to Annex XVII of the REACH Regulation and subsequent amendments	None

2.3 Other hazards
vPvB substances: none - PBT substances: none

SECTION 3. Composition/information on ingredients

3.1 Substance/Mixture

Mixture	Epoxy resin

Name **Hazardous component**	**CAS**	**EC**	**%**	**Classification**
Reaction product bisphenol-A-epichlorohydrin and epoxy resin (molecular weight <=700) *REACH Reg. n.:* *01-2119456619-26*	25068-38-6	500-033-5	50 < = C < 75	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 2, H411
Reaction product bisphenol-F-epichlorohydrin and epoxy resin (molecular weight <=700) *REACH Reg. n.:* *01-2119454392-40*	9003-36-5	500-006-8	25 < = C < 35	Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chron. 2,H411
Oxirane C12 - C14 alkyl glycidyl ether *REACH Reg. No.:* *01-21194852289-22*	68609-97-2	271-846-8	10 < = C < 20	Skin Irrit. 2, H315 Skin Sens. 1, H317

Declaration of the ingredients in accordance with EC Regulation No. 1272/2008 (CLP)

SECTION 4. First aid measures

4.1 Description of the first aid measures

Contact with skin	Wash thoroughly with soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Seek medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Contact with eyes	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Verify whether contact lenses are worn and if so, remove them. Continue to rinse for at least 10 minutes. Seek medical attention.
Swallowing	Rinse mouth with water. Remove dentures, if present. Move the victim to fresh air and keep at rest in a comfortable position for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Seek medical attention if the adverse health effects persist or are severe. Never administer anything by mouth to an unconscious person. If unconscious, place in the recovery position and seek medical attention immediately. Make sure there is good air circulation. Loosen tight-fitting clothing such as a collar, tie, belt or waistband.
Inhalation	Move the victim to fresh air and keep at rest in a comfortable position for breathing. In case of shortness of breath, irregular breathing or respiratory arrest, have trained personnel apply artificial respiration or administer oxygen. Performing mouth-to-mouth resuscitation can be dangerous for the person providing assistance. Seek medical attention if the adverse health effects persist or are severe. If unconscious, place in the recovery position and seek medical attention immediately. Make sure there is good air circulation. Loosen tight-fitting clothing such as a collar, tie, belt or waistband.

4.2 Main symptoms and effects, both acute and delayed
Potentially acute effects on health

Contact with skin	Causes skin irritation. May cause a skin reaction.
Contact with eyes	Causes serious eye irritation.

Swallowing	Irritant for the mouth, throat and stomach.
Inhalation	No known significant effects or critical hazards.

Signs/Symptoms of overexposure

Contact with skin	Adverse symptoms may include the following: irritation and reddening.
Contact with eyes	Adverse symptoms can include the following: irritation or pain, tearing, reddening.
Swallowing	No specific data.
Inhalation	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
If large quantities have been swallowed or inhaled, contact a poison control centre immediately.
There are no specific treatments.

SECTION 5. Fire-fighting measures

5.1 Extinguishing agents

Suitable extinguishing agents	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing agents	None known.

5.2 Risks from combustion

Hazards arising from the substance or mixture	In the event of a fire or overheating, the pressure increases and the container may burst. This material is toxic to aquatic life with long-term effects. The extinguishing water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	The decomposition products can include the following materials: carbon dioxide, carbon monoxide, halogenated compounds.

5.3 Recommendations for those in charge of putting out fires

Special protective actions	In case of fire, promptly isolate the area by removing all persons from the vicinity of the incident. No action shall be taken involving any personal risk or without suitable training.
Protective clothing	Emergency teams must wear protective equipment and a positive pressure full face-piece self-contained breathing apparatus (SCBA). The clothing for staff appointed to extinguishing fires (including helmets, protective boots and gloves), compliant with European standard EN 469, ensures a basic protection level for chemical accidents.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For whoever is not working on it directly	No action shall be taken involving any personal risk or without suitable training. Evacuate the surrounding areas. Prevent unauthorised and unprotected personnel from entering. Do not touch or walk on spilled material. Do not touch or walk on spilled material. Avoid inhaling vapours or mists. Provide adequate ventilation. Wear an appropriate respirator if ventilation is inadequate. Wear due personal protective equipment.
For whoever works on it directly	If any spillage needs to be managed with the use of special clothing, take into account all of the information of Section 8 relative to suitable and unsuitable materials. Also see the information contained in "For non emergency service operators".

6.2 Environmental precautions

Prevent the spilled material from dispersing, flowing into or coming in contact with the soil, waterways, drains and sewers.
Inform the relevant authorities if the product has caused environmental pollution (drains, waterways, soil or air).
Water polluting material.
May be harmful to the environment if released in large quantities.
Prevent the spilled material from dispersing, flowing into or coming in contact with the soil, waterways, drains and sewers.
Inform the relevant authorities if the product has caused environmental pollution (drains, waterways, soil or air).
Water polluting material.
May be harmful to the environment if released in large quantities.
Collect the spilled material.

6.3 Methods and materials for containment and cleaning up

Small spill	Stop the leak if there is no risk. Move containers away from spill area. Dilute with water and absorb if water-soluble. Alternatively, or if not water-soluble, absorb with dry inert material and dispose of in appropriate waste container. Dispose of via an authorised waste disposal contractor.
Large spill	Stop the leak if there is no risk. Move containers away from spill area. Approach the leak from upwind.

Prevent the leak from reaching drains, waterways, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material, such as sand, soil, vermiculite or diatomaceous earth and place in a container for disposal according to regulations in force. Dispose of via an authorised waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

Refer to Chapter 7 for information on safe handling.
Refer to Chapter 8 for information on personal protective equipment.
Refer to Chapter 13 for information on disposal.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Protective measures	Wear appropriate protective equipment (refer to Section 8). Persons with a history of skin sensitisation must not be involved in any process in which this product must be used. Avoid contact with eyes, skin or clothing. Do not swallow. Avoid inhaling vapours or mists. Do not release into the environment. Store in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be dangerous. Do not reuse the container.
Warnings pertaining to general work hygiene protocols	It is forbidden to eat, drink or smoke in areas where the material is handled, stored or processed. People who use the product must wash their hands and face before eating, drinking and smoking. Take off the contaminated clothing and safety devices.

7.2 Conditions for safe storage, including any incompatibility

Store in accordance with applicable regulations.
Store in the original container away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink.
Keep the container closed tightly and sealed until it is to be used.
Open containers must be carefully resealed and kept upright to prevent the product from leaking.
Do not store in unlabelled containers.
Set up appropriate containment systems to avoid environmental contamination.

7.3 Specific end uses

No additional information for specific end uses (see Section 1.2).

SECTION 8. Exposure control/personal protection

8.1 Control parameters

DNEL exposure limit values: Not available.
PNEC exposure limit values: Not available.

Recommended monitoring procedures	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective devices. Refer to the monitoring standards, such as the following, for example: European standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) - European standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) - European standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents). It will also be necessary to refer to the national documents offering orientation on the methods used to determine hazardous substances.

Name of product/ingredient	Type	Exposure level	Effects on health	Effects	Value	Population
Reaction product: bis phenol-A-epichlorohydrin and epoxy resin (average molecular weight <=700)	DNEL	Dermal	Short term	Systemic	8.3 mg/kg bw/d	Workers
	DNEL	Inhalation	Short term	Systemic	12.3 mg/m^3	Workers
	DNEL	Dermal	Long term	Systemic	8.3 mg/kg bw/d	Workers
	DNEL	Inhalation	Long term	Systemic	12.3 mg/m^3	Workers
	DNEL	Dermal	Short term	Systemic	3.6 mg/kg bw/d	General

Name of product/ingredient	Type	Exposure level	Effects on health	Effects	Value	Population
	DNEL	Inhalation	Short term	Systemic	0.75 mg/m³	General
	DNEL	Oral	Short term	Systemic	0.75 mg/kg bw/d	General
	DNEL	Dermal	Long term	Systemic	3.6 mg/kg bw/d	General
	DNEL	Inhalation	Long term	Systemic	0.75 mg/m³	General
	DNEL	Oral	Long term	Systemic	0.75 mg/kg bw/d	General
Reaction product: bis phenol-F-epichlorohydrin and epoxy resin (average molecular weight <=700)	DNEL	Dermal	Short term	Local	8.3 µg/cm²	Workers
	DNEL	Dermal	Long term	Systemic	104.15 mg/kg bw/d	Workers
	DNEL	Inhalation	Long term	Systemic	29.39 mg/m³	Workers
	DNEL	Dermal	Long term	Systemic	62.5 mg/kg bw/d	General
	DNEL	Inhalation	Long term	Systemic	8.7 mg/m³	General
	DNEL	Oral	Long term	Systemic	6.25 mg/kg bw/d	General

DNEL/DMEL summary	Not available.

Name of product/ingredient	Type	Environmental detail	Value	Method detail
Reaction product: bisphenol-A-epichlorohydrin and epoxy resin (average molecular weight <=700)	PNEC	Fresh water	3 µg/l	-
	PNEC	Marine	0.3 µg/l	-
	PNEC	Wastewater treatment plant.	10 mg/l	-
	PNEC	Running water sediment	0.5 mg/kg dwt	-
	PNEC	Sediments in salt water	0.5 mg/kg dwt	-
	PNEC	Sediment	0.05 mg/kg dwt	-
	PNEC	Intermittent release	0.013 mg/l	-
Reaction product: bisphenol-F-epichlorohydrin and epoxy resin (average molecular weight <=700)	PNEC	Fresh water	0.003 mg/l	-
	PNEC	Marine	0.0003 mg/l	-
	PNEC	Wastewater treatment plant.	10 mg/l	-
	PNEC	Running water sediment	0.294 mg/kg dw	-
	PNEC	Sediments in salt water	0.0294 mg/kg d	-
	PNEC	Soil	0.237 mg/kg dw	-
	PNEC	Intermittent release	0.0254 mg/l	-

PNEC summary	Not available.

Derived No Effect Level (DNEL) and Predicted No Effect Concentration (PNEC)

Explanatory note

REACH requires manufacturers and importers to determine and indicate Derived No-Effect Levels (DNELs) and the Predicted No Effect Concentrations (PNECs) for environmental exposure.
DNEL and PNEC are determined by the person who makes the recording without an official consultation, and are not intended to be used directly to set the occupational exposure limits or generally for the population.
They are primarily used as input values when completing the quantitative risk assessment models (such as the ECETOC-TRA model).
Due to differences in the contact methodology, the DNEL will tend to be lower (sometimes much lower) than other OEL on a health basis for chemicals.
mixture, it is not freely available during use.

8.2 Exposure controls

Suitable technical controls	Does not require any special ventilation. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, implement the process in containment conditions, use local ventilation exhaust or other control devices to keep worker exposure below any recommended or legally-imposed limits.

Personal protective measures

Hygiene measures	Wash your hands, arms and face thoroughly after handling chemical products and before eating, smoking, using the bathroom and at the end of the work shift. Appropriate techniques must be used to remove potentially contaminated clothing. Contaminated work clothing should not be taken out of the workplace. Wash contaminated clothing before reuse. Make sure that the emergency eyewash areas and shower are close to the place where the work is carried out.
Eyes/face protection	Safety goggles, compliant with the approved standards, must be used when this results necessary following the risk assessment in order to prevent exposure to liquid splashes, gases or dust. If contact is possible, use the following protective measures, unless the assessment indicates the need for a higher level of protection: chemical spray-resistant goggles.

Skin protection

Hand protection	Chemical-resistant and waterproof gloves that conform to the approved standards must always be worn when handling chemical products if this results as necessary following the risk assessment. Considering the parameters specified by the glove manufacturer, during use check that the gloves maintain their protective properties unchanged. Note that the permeation time for any material that the glove is made of can vary depending on the glove manufacturer. With mixtures, composed of several substances, it is not possible to specifically estimate the glove protection time.
Body protective equipment	Personal protective equipment for the body must be chosen based on the expected risks linked to the task and approved by qualified staff before its use for the manipulation of this product.
Other skin protection devices	Choose suitable footwear and any additional skin protection measures based on the activity being carried out and the inherent risks. These choices must be approved by a specialist before handling this product.
Respiratory protection	Use a personalised air-purifying respirator or one with an air intake system that complies with the approved standards if this results as necessary following the risk assessment. The respirator must be selected based on known or expected exposure levels, the hazards of the product and the safe operation limits of the selected respirator.
Environmental exposure controls	Emissions from ventilation equipment or work processes must be controlled to make sure they comply with the environmental protection requirements set forth by law. In some cases it will be necessary to wash the fumes, add filters or make technical changes to the process equipment to reduce the emissions to acceptable levels.

SECTION 9. Physical and chemical properties

9.1 Information on the basic physical and chemical properties

Description	Values
Physical state	Liquid
Colour	Red-brown
Odour	Not available.
Olfactory threshold	Not available.
pH	Not available.
Melting or freezing point	Not available.
Initial boiling point	Not available.
Initial boiling range	Not available.
Flash point	150 °C
Evaporation rate	Not available.
Lower flammability limit	Not available.
Upper flammability limit	Not available.
Lower explosivity limit	Not available.
Upper explosivity limit	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	Not available.
Density	1.120 kg/m^3 (ASTM D 4052)
Solubility	Not available.
Solubility in water	Not available.
Partition coefficient n-octanol/water	Not available.
Auto-ignition temperature	400°C (ASTM D 1929)

Description	Values
Decomposition temperature	Not available.
Viscosity	Dynamic 0.7 - 1.1 Pas 25°C Kinematic: Not available
Explosive properties	Not available.
Oxidising properties	Not available.

9.2 Other information
No information.

SECTION 10. Stability and reactivity

10.1 Reactivity
Stable under normal conditions.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions or instability may occur under certain conditions of storage or use.

10.4 Conditions to be avoided
The product is stable under normal conditions of use and storage.

10.5 Incompatible materials
No specific data.

10.6 Hazardous decomposition products
Under normal conditions of storage and use, no hazardous decomposition products should be generated.

SECTION 11. Toxicological information

11.1 Information on toxicological effects
Acute toxicity:

Name of product/ingredient	Result	Species	Dose	Exposure
Reaction product: bisphenol-A-epichlorohydrin and epoxy resin (average molecular weight <=700)	LD50 Oral	Rat	11.400 mg/kg	-
	LD50 Cutaneous	Rat	2000 mg/kg	-
Observations - Oral	It is devoid of acute toxicity in several studies carried out on the mouse and rat, LD50> 2000 mg/kg in body weight.			
Observations - Inhalation	Due to the very low vapour pressure (saturated atmosphere = 0.008 ppb), it has not been possible to perform significant studies on the effects of acute inhalation.			
Observations - Skin	In a study conducted on rat according to OECD Standard No. 402 the skin LD50 was found to be > 2000 mg/kg. in several acute dermal toxicity studies carried out on a rabbit, LD50 was > 2000 mg/kg. In a study carried out on a rabbit, the LD50 value was 23 g/kg.			

Name of product/ingredient	Result	Species	Dose	Exposure
Reaction product: bisphenol-F-epichlorohydrin and epoxy resin (average molecular weight <=700)	LD50 Oral	Rat	> 2.000 mg/kg	-
	LD50 Cutaneous	Rabbit	> 2.000 mg/kg	-
Observations - Oral	The mean acute oral lethal dose (LD50) in rats, Fischer 344 strain, is greater than 2000 mg/kg of body weight.			
Observations - Inhalation	In compliance with Annex VII of the REACH regulation, it is not necessary to conduct the study on acute toxicity due to absorption through inhalation, since there are studies on oral and cutaneous absorption for this substance.			

Name of product/ingredient	Result	Species	Dose	Exposure
Reaction product: oxirane, mono[(C12-14-alchilossi)metil] derivatives	LD50 Oral	Rat	17.100 mg/kg	-

Name of product/ingredient	Result	Species	Dose	Exposure
Observations - Oral	Independent studies conducted on the basis of standard methods have shown that the LD50 value per female rat is > 2.0 g/kg and the LD50 value per male rat is 26.8 g/kg.			
Observations - Inhalation	No case of mortality was observed in rats exposed for 7 hours to the saturated value (150 mg/m^3).			
Conclusion/Summary	Not available.			

Acute toxicity estimations

Not available.

Irritation/Corrosion

Name of product/ingredient	Result	Species	Points	Exposure	Observations
Reaction product: bisphenol-A-epichlorohydrin and epoxy resin (average molecular weight <=700)	Skin - Erythema/Eschar 404 Acute Dermal Irritation/Corrosion	Rabbit	1,5 - 2	-	-
	Skin - Erythema/Eschar 404 Acute Dermal Irritation/Corrosion	Rabbit	1,0 - 1,5	-	-
	Eyes - 405 Acute Eye Irritation/Corrosion	Rabbit	0	-	-
	Eyes - Reddening of the conjunctival membranes	Rabbit	0,7	-	-
	Skin - Moderately irritating	Rabbit	-	24 h	-
	Skin - Highly irritating	Rabbit	-	24 h	-
	Eyes - Slightly irritating	Rabbit	-	-	-
Name of product/ingredient	**Result**	**Species**	**Points**	**Exposure**	**Observations**
Reaction product: bisphenol-F-epichlorohydrin and epoxy resin (average molecular weight <=700)	Skin - Erythema/Eschar 404 Acute Dermal Irritation/Corrosion	Rabbit	0,7	4 h	72 h
	Skin - Erythema/Eschar 404 Acute Dermal Irritation/Corrosion	Rabbit	0	4 h	4 - 504 h
	Eyes - Corneal opacity 405 Acute Eye Irritation/Corrosion	Rabbit	0	-	1 - 168 h
	Eyes - Lesion of the iris 405 Acute Eye Irritation/Corrosion	Rabbit	0	-	1 - 168 h
	Eyes - Reddening of the conjunctival membranes 405 Acute Eye Irritation/Corrosion	Rabbit	0	-	1 - 168 h
	Eyes - Oedema of the conjunctival membranes 405 Acute Eye Irritation/Corrosion	Rabbit	0	-	1 - 168 h
	Skin - Slightly irritating	Rabbit	-	24 h	-
Name of product/ingredient	**Result**	**Species**	**Points**	**Exposure**	**Observations**
Reaction product: oxirane, mono[(C12-14-alchilossi)metil] derivatives	Skin - Primary skin irritation index (PDII) OTS 798.4470 Acute Dermal Irritation/Corrosion	Rabbit	4.1	24 h	72 h
	Skin - Primary skin irritation index (PDII)	Rabbit	5.75	24 h	72 h

Name of product/ingredient	Result	Species	Points	Exposure	Observations
	404 Acute Dermal Irritation/Corrosion				
	Eyes - Corneal opacity 405 Acute Eye Irritation/Corrosion	Rabbit	2	-	1 - 24 h
	Skin - Moderately irritating	Rabbit	-	24 h	-

Conclusion/Summary

Skin	Not available.
Eyes	Not available.
Respiratory tract	Not available.

Sensitisation

Name of product/ingredient	Exposure level	Species	Result
Reaction product: bisphenol-A-epichlorohydrin and epoxy resin (average molecular weight <=700)	Skin	-	-
Observations	In an OECD No. 429 mouse LLNA study the estimated EC3 was a concentration of 5.7% suggesting that BADGE is a moderate skin sensitiser in this test system. In a guinea-pig maximization study according to the OECD Standard No. 406, BADGE resulted in a positive skin reaction in 100% of the test animals at a stimulus dose with 50% concentration. Therefore, BADGE is an "extreme" skin sensitizer in the conditions of this study. BADGE tested positive for skin sensitization even in a Buehler guinea pig study method carried out according to the OECD Standard No. 406.		

Name of product/ingredient	Exposure level	Species	Result
Reaction product: bisphenol-F-epichlorohydrin and epoxy resin (average molecular weight <=700)	Skin	-	-
Observations	The Buehler method was used to assess the skin sensitisation potential of the liquid epoxy resin BPFDGE. 0.4 ml of the substance in question was topically administered to ten male guinea pigs once a week for three weeks. A positive control of the liquid epoxy resin BPFDGE was used on ten additional animals. The stimulation phase began two weeks after the addition of 5 animals exposed to 0.4 ml of liquid in liquid epoxy resin BPFDGE. The negative control had 0 positive reactions, the liquid epoxy resin BPFDGE led to positive reactions in 4 out of 10 guinea pigs and the positive control led to 8 out of ten positive reactions. In the conditions of this study, the test material caused delayed hypersensitivity in the guinea pigs.		

Name of product/ingredient	Exposure level	Species	Result
Reaction product: oxirane, mono[(C12-14-alchilossi)metil] derivatives	Skin	-	-
Observations	In a sensitisation study using the Buehler method conducted according to OTS test rule 870.2600 of the American EPA, positive skin reactions were observed in 20/20 guinea pigs. An extreme sensitiser in one study with maximisation test on guinea pig conducted according to OECD test rule No. 406.		

Conclusion/Summary

Skin	Not available.
Respiratory tract	Not available.

Mutagenicity

Name of product/ingredient	Test	Experiment	Result
Reaction product: bisphenol-A-epichlorohydrin and epoxy resin (average molecular weight <=700)	-	-	-
Observations	Various studies have shown that BADGE induces genic mutation in experimental strains Ames/Salmonella TA1535 and TA100. In general, the mutagenic activity was greater without S9 liver metabolic activation. Induced gene mutation in mouse lymphoma L5178Y cells. Induced gene mutation and chromosomal damage in Chinese hamster V7 cells9. Induced cell transformation in Syrian hamster BHK cells on the basis of clonal growth in soft agar. No chromosomal damage evidence was induced in a study with an oral probe carried out in a dominant lethal test on mice up to a high dose level of 10 g/kg and in a micronucleus test carried out on mice up to a high dose of 5000 mg/kg. Negative in a male mouse spermatocyte cytogenetic assay with treatment for 5 days in an oral		

	high dose of up to 3000 mg/kg. Did not induce an increase in the frequency of chromosome damage in a cytogenetic test of bone marrow cells of Chinese hamster in an oral high dose of up to 3300 mg/kg. Did not induce an increase of DNA strand breaks in cells of rat liver after treatment with oral gavage with 500 mg/kg, as measured by alkaline elution.

Name of product/ingredient	Test	Experiment	Result
Reaction product: bisphenol-F-epichlorohydrin and epoxy resin (average molecular weight <=700)	-	-	-

Observations	Bisphenol F diglycidyl ether induced a genic mutation in the Ames/Salmonella mutation test and chromosome aberrations in human lymphocytes in several independent BPL studies conducted according to testing rules. Also, the structurally analogous bisphenol A diglycidyl ether (BPADGE) induced a significant increase in the frequency of mutations in L5178Y mice lymphoma cella in culture, supporting the other conclusions. Accordingly, BPFDGE is genotoxic in vitro. When the genotoxicity potential of bisphenol F diglycidyl ether was assessed in multiple tests in vivo in compliance with the BPLs, including testing on mice micronucleus, UDS in vivo/in vitro and MutaMouse tests on rats, no evidence of genotoxicity was found. Also the results of other in vivo genotoxicity tests support these negative results for BPFDGE. In conclusion, bisphenol F diglycidyl ether is not genotoxic in vivo.

Name of product/ingredient	Test	Experiment	Result
Reaction product: oxirane, mono[(C12-14-alchilossi)metil] derivatives	-	-	-

Observations	Positive in a bacterial mutation test conducted according to OECD test rule No. 471 in experimental strain Salmonella TA1535 with and without metabolic activation with S9. Negative in a gene mutation test on the ovary cells of Chinese hamster (CHO) HGPRT conducted according to OECD test rule No. 476 up to cytotoxic levels with and without metabolic activation S9. Negative in a gene mutation sample on the lymphoma cells of L5178Y/TK mouse tested up to cytotoxic dose levels. Negative for micronucleus induction (chromosome damage) in a study on mice conducted according to OECD rule No. 474 up to a high intraperitoneal injection dose of 4.0 g/kg. Negative in a study of chromosome aberrations on rat bone marrow conducted similarly to OECD test rule No. 475 through intraperitoneal injection, up to a high dose of approximately 700 mg/kg.
Conclusion/Summary	Not available.

Carcinogenicity

Name of product/ingredient	Result	Species	Dose	Exposure
Reaction product: bisphenol-A-epichlorohydrin and epoxy resin (average molecular weight <=700)	-	-	-	-

Observations	In a study with an oral probe in rats, according to the OECD Standard No. 453, there was no evidence of carcinogenicity up to the high dose of 100 mg/kg/day. Studies have been conducted of dermal exposure of male mice and rats according to the OECD Standard No. 453. .No evidence of carcinogenicity was noted in male mice treated up to the high dose of 100 mg/kg/day and female rats exposed to the high dose of 1000 mg/kg/day.

Name of product/ingredient	Result	Species	Dose	Exposure
Reaction product: bisphenol-F-epichlorohydrin and epoxy resin (average molecular weight <=700)	-	-	-	-

Observations	The capacity of Bisphenol F diglycidyl ether (BPFDGE) to induce local and systemic tumours was assessed in a 24-month study with "skin painting" on mice. The skin treatment was carried out on the mice twice a week with a solution of up to 10% Bisphenol F diglycidyl ether (BPFDGE) without inducing any negative result of incidence of tumours or local skin effects. Accordingly, BPFDGE is not considered carcinogenic on mice in the conditions of this study. The NOAEL was estimated to be approximately 800 mg/kg/day.
Conclusion/Summary	Not available.

Toxic for reproduction

Conclusion/Summary	Not available.

Teratogenicity

Name of product/ingredient	Result	Species	Dose	Exposure
Reaction product: bisphenol-A-epichlorohydrin and epoxy	-	-	-	-

Name of product/ingredient	Result	Species	Dose	Exposure
resin (average molecular weight <=700)				

Observations	BADGE did not induce any evidence of development toxicity in rats and rabbits exposed by oral dosing or in rabbits following dermal treatment, in studies carried out in accordance with the OECD standard No. 414. The studies with an oral dosing probe have been carried out up to a high dose of 180 mg/kg/day, which produced maternal toxicity based on the reduction of the increase in body weight. The study of skin toxicity on rabbit was carried out up to a high dose of 300 mg/kg/day, which induced maternal toxicity on the basis of the reduction of the increase in body weight.

Name of product/ingredient	Result	Species	Dose	Exposure
Reaction product: bisphenol-F--epichlorohydrin and epoxy resin (average molecular weight <=700)	-	-	-	-

Observations	Bisphenol A diglycidyl ether (DGEBPA) was tested for its embryo/fetal toxicity and teratogenicity in pregnant rabbits. DGEBPA was applied daily to the back (shaved) of white New Zealand rabbits at doses of 0 (polyethylenglycols, carrier control), 30, 100 or 300 mg/kg of body weight/day at a volumetric dose of 1 ml/kg of body weight/day from day 6 to 18 of gestation. Twenty-six inseminated rabbits were used for dosage group, obtaining a minimum of 20 pregnant rabbits for each level of exposure. An occlusive absorbent gauze dressing and non-absorbent cotton was placed on the dosage area on the back of each rabbit. The dressing was held in place for a minimum of 6 hours/day with a protective lycra/spandex cover. Following the period of occlusion, the dressing and protective cover were removed. Effects of maternal toxicity were observed in the pregnant rabbits in the 300 mg/kg dosage group, as demonstrated by the moderate to serious erythemas, fissures, haemorrhages and slight bruising on the exposure site. Similar, but less serious, skin lesions were observed on the pregnant rabbits in the 100 mg/kg/day exposure group. The effects on the skin (slight erythemas) observed on the pregnant rabbits in the 30 mg/kg/day group were not considered toxicologically significant. No proof of embryo/fetotoxicity or teratogenicity was observed at any dose, meaning that the no effect level (NOEL) on the embryo/fetus is 300 mg/kg of body weight/day.

Name of product/ingredient	Result	Species	Dose	Exposure
Reaction product: oxirane, mono[(C12-14-alchilossi)metil] derivatives	-	-	-	-

Observations	In a toxicological study conducted cutaneously on rats according to the US EPA OTS 798.4420 method and according to OECD test rule No. 414, the NOAEL for adverse effects in both the mother and development was greater than the high dosage level of 200 mg/kg/day.
Conclusion/Summary	Not available.

Specific toxicity for target organs (STOT) - Single exposure

Not available.

Specific toxicity for target organs (STOT) - Repeated exposure

Not available.

Inhalation hazard

Not available.

Information of the most probable means of exposure

Not available.

Potentially acute effects on health

Contact with eyes	Causes serious eye irritation.
Inhalation	Irritant for the mouth, throat and stomach.
Contact with skin	Causes skin irritation.
	May cause an allergic skin reaction.
Swallowing	No known significant effects or critical hazards.

Symptoms connected to physical, chemical and toxicological characteristics

Contact with eyes	Adverse symptoms may include the following: irritation or pain.
	Tearing.
	Reddening.
Inhalation	No specific data.
Contact with skin	Adverse symptoms may include the following: irritation.
Swallowing	No specific data.

Immediate, delayed and chronic effects deriving from long and short term exposure

Short-time exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Long-term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Potentially chronic effects on health

Conclusion/Summary	Not available.
General	Once an individual is sensitised, a serious allergic reaction may occur following later exposure to very low levels.
Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity:	No known significant effects or critical hazards.
Effects on development	No known significant effects or critical hazards.
Effects on fertility	No known significant effects or critical hazards.

SECTION 12. Ecological information

12.1 Ecotoxicity

Name of product/ingredient	Result	Species	Exposure
Reaction product: bisphenol-A-epichlorohydrin and epoxy resin (average molecular weight <=700)	Acute CL50 1.3 mg/l - 203 Fish, Acute Toxicity Test	Fish - Fish	96 h
	Acute EC50 2.1 mg/l - 202 Daphnia sp. Acute Immobilization Test and Reproduction Test	Aquatic invertebrates - Daphnia	48 h
	Acute NOEC 0.3 mg/l - 211 Daphnia Magna Reproduction Test	Aquatic invertebrates - Daphnia	21 d
	Acute CL50 > 11 mg/l	Aquatic plants - Algae	72 h
Name of product/ingredient	**Result**	**Species**	**Exposure**
Reaction product: bisphenol-F-epichlorohydrin and epoxy resin (average molecular weight <=700)	Acute CL50 2.54 mg/l	Fish - Fish	96 h
	Acute EC50 2.55 mg/l - 202 Daphnia sp. Acute Immobilization Test and Reproduction Test	Aquatic invertebrates - Daphnia	48 h
	Acute EC50 > 1.000 mg/l - 201 Alga, Growth Inhibition Test	Aquatic plants - Algae	72 h
Name of product/ingredient	**Result**	**Species**	**Exposure**
Reaction product: oxirane, mono[(C12-14-alchilossi)metil] derivatives	Acute CL50 > 1.8 g/l - 203 Fish, Acute Toxicity Test	Fish - Rainbow trout, Donaldson trout	96 h
	Acute CL50 > 5.0 g/l - 203 Fish, Acute Toxicity Test	Fish - Lepomis	96 h
	Acute EC50 7.2 mg/l - 202 Daphnia sp. Acute Immobilization Test and Reproduction Test	Aquatic invertebrates - Daphnia	48 h
	Acute EC50 844 mg/l - 201 Alga, Growth Inhibition Test	Aquatic plants - Algae	72 h
Contains	Not available.		

12.2 Persistence and degradability

Name of product/ingredient	Test	Result	Dose	Inoculant
Reaction product: bisphenol-A--epichlorohydrin and epoxy resin (average molecular		-	-	-

Name of product/ingredient	Test	Result	Dose	Inoculant
weight <=700)				

Observations	The level of biodegradation in an "improved" OECD 301 F study was 5% within the contact period of 28 days. Biodegradation reached 6-12% after 28 days of contact in a study conducted according to OECD No. 301 B.Therefore, BADGE is not easily biodegradable in the conditions of the study.

Name of product/ingredient	Test	Result	Dose	Inoculant
Reaction product: bisphenol-F-epichlorohydrin and epoxy resin (average molecular weight <=700)	-	-	-	-

Observations	Bisphenol F diglycidyl ether was not found to be easily biodegradable in the screening study conditions according to OECD testing rules No. 301 B and 301 D. The maximum percentage of biodegradation observed in one of the OECD 301 B studies was 16% for 10 mg/l at 28 days of contact.

Name of product/ingredient	Test	Result	Dose	Inoculant
Reaction product: oxirane, mono[(C12-14-alchilossi)metil] derivatives	-	-	-	-

Observations	In a study conducted according to OECD test rule No. 301 F biodegradation was 57-655 after 7 days. Nevertheless, in a study conducted according to OECD test rule No. 301 D (closed bottle) biodegradation was 34.7% after 28 days.
Contains	Not available.

12.3 Bioaccumulative potential

Name of product/ingredient	LogPow	BCF	Potential
Reaction product: bisphenol-A-epichlorohydrin and epoxy resin (average molecular weight <=700)	2,64 - 3,78	3 - 31 31,00	Low
Reaction product: bisphenol-F-epichlorohydrin and epoxy resin (average molecular weight <=700)	3,3	150 150,00	Low
Oxirane, mono[(C12-14-alchilossi)metil] derivatives	3,77	160 - 263 160,00	Low

12.4 Mobility in the soil

Soil/Water partition coefficient (KOC)	Not available.
Mobility	Not available.

12.5 Results of the PBT and vPvB evaluation

Based on available data, the product does not contain PBT or vPvB substances in percentages exceeding 0.1%.

12.6 Other adverse effects

Information not available.

SECTION 13. Disposal considerations

13.1 Waste processing methods

Product

Disposal methods	The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products must always comply with the provisions of law concerning environmental protection and waste disposal and the requirements of any relative local authority. Dispose of surplus and non-recyclable products via an authorised waste disposal contractor. Untreated waste must be disposed of in the sewer system unless it is not fully compliant with the requirements of every agency and regulation.
Hazardous waste	Product classification may meet the criteria set forth for hazardous waste.

Packaging

Disposal methods	The generation of waste should be avoided or minimised wherever possible. Waste packaging must be recycled. Incineration or dumping must only be taken into consideration when recycling is not possible.
Special precautions	Dispose of the product and container with proper precaution. It is necessary to be careful when handling emptied containers that have not been cleaned or rinsed.

Empty containers or liners may retain some product residue.
Prevent the spilled material from dispersing, flowing into or coming in contact with the soil, waterways, drains and sewers.

SECTION 14. Transport information

ADR/RID - ADN/RID IMDG IATA

-	ADR/RID - ADN/RID	IMDG	IATA
14.1 UN number	3082	3082	3082
14.2 UN Shipping name	Hazardous liquid product n.o.s. (epoxy resins)	Hazardous liquid product n.o.s. (epoxy resins)	Hazardous liquid product n.o.s. (epoxy resins)
14.3 Hazard classes	9	9	9
14.4 Packaging groups	III	III	III
14.5 Hazardous for the environment Marine Pollutant	Yes	Yes	Yes
14.6 Special precautions	Transportation inside the user's property: always perform transportation with the containers closed, stored vertically and secured to the vehicle. Make sure that the people performing transport are qualified to effectively intervene in case of accident and/or spillage	Transportation inside the user's property: always perform transportation with the containers closed, stored vertically and secured to the vehicle. Make sure that the people performing transport are qualified to effectively intervene in case of accident and/or spillage	Transportation inside the user's property: always perform transportation with the containers closed, stored vertically and secured to the vehicle. Make sure that the people performing transport are qualified to effectively intervene in case of accident and/or spillage
Further information	Tunnel code: E	Emergency plan: F-A/S-F	Emergency plan: F-A/S-F
14.7 Bulk transport according to Annex II of MARPOL 73/78 and the IBC Code	N.A.	N.A.	N.A.

SECTION 15. Regulatory information

15.1 Specific standards and regulations on health, safety and environment for the substance or mixture

EC Regulation No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation - Substances of very high concern

Very concerning substances

Carcinogenic	Not in the list.
Mutagenicity	Not in the list.
Toxic for reproduction	Not in the list.
PBT	Not in the list.
vPvB	Not in the list.

Other EU standards

REACH status	Substances in this product have been pre-registered and/or registered or are exempt from compulsory registration in accordance with EC Regulation No. 1907/2006 (REACH).
Aerosol generators	Not applicable.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles	Not applicable.
EU - with Informed Consent. List of chemical products subject to the PIC international procedure (Annex I - Part 1)	Not in the list.
EU - with Informed Consent. List of chemical products subject to the PIC international procedure (Annex I - Part 2)	Not in the list.
EU - with Informed Consent. List of products of the PIC international procedure (Annex I - Part 3)	Not in the list.
AOX	The product contains halides linked to organic compounds that could contribute to the AOX value (adsorbable organic halides) of the waste water.

Seveso Directive II

This product is controlled according to directive Seveso II.

Hazard criteria

Category
E2: Hazardous to the aquatic environment - Category of chronic toxicity 2 C9II: Toxic to the environment
C9II: Toxic to the environment

National standards

Decree on hazardous accidents	Applicable. Category: Hazardous for the environment.
Risk class for water	WGK 2, Annex No. 4
Technical instructions on air quality control	Nr. 5.2.5.

International regulations

International lists	Australian inventory (AICS, List of chemicals for Australia): All components are listed or exempt. Canadian inventory: All components are listed or exempt. Japanese inventory: All components are listed or exempt. Chinese inventory (Inventory of chemicals for China): All components are listed or exempt. Korean inventory (KECI, list of all chemicals for Korea): All components are listed or exempt. New Zealand inventory (NZI or C list of all chemicals for New Zealand): All components are listed or exempt. Philippines inventory (PICCS list of all chemicals for the Philippines): All components are listed or exempt. Inventory of the United States (TSCA Toxic Substances Control Act, Sec. B): All components are listed or exempt. Taiwan inventory (CSNN): All components are listed or exempt.
List of the Convention on the prohibition of chemical weapons Table I Chemical Compounds	Not in the list.
List of the Convention on the prohibition of chemical weapons Table II Chemical Compounds	Not in the list.
List of the Convention on the prohibition of chemical weapons Table III Chemical Compounds	Not in the list.

15.2 Chemical safety assessment

This product contains substances that still require chemical safety Assessments.

SECTION 16. Other information

Procedure used to derive classification according to EC Regulation No. 1272/2008 (CLP/GHS)

Classification	Justification
Skin Corr./Irrit. 2, H315	Calculation method
Eye Dam./Irrit. 2, H319	Calculation method
Skin Sens. 1, H317	Calculation method
Aquatic Chronic 2, H411	Calculation method

Integral texts of the abbreviated hazard statements

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H411	Toxic to aquatic organisms with long-term effects

Integral texts of the classifications [CLP/GHS]

Skin Corr./Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
Aquatic Chronic 2, H411	LONG-TERM HAZARD FOR THE AQUATIC ENVIRONMENT - Category 2
Skin Sens. 1, H317	SKIN SENSITISATION - Category 1
Eye Dam./Irrit. 2, H319	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2

Abbreviations and acronyms

- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- CAS NUMBER: Chemical Abstract Service NUMBER

- CLP: Classification, Labelling, Packaging (EC Regulation No. 1272/2008)
- DNEL: Derived no effect level
- EINECS: European Inventory of existing Commercial Chemical substances
- GefStoffVO: Ordinance on hazardous substances in Germany
- GHS: Global harmonised system to classify and label Chemical products
- IATA: International Air transport Association
- IATA DGR: Regulations to transport Dangerous Goods of the International Air transport Association
- ICAO: International Civil Aviation Organization
- ICAO-TI: Technical Instructions of the "International Civil Aviation Organization"
- IMDG: International maritime code for transport of Dangerous Goods
- LC50: Lethal concentration for 50% of the test population
- LD50: Lethal dose for 50% of the test population
- LTE: Long-term exposure
- PNEC: Predicted no-effect concentration
- RID: Regulations concerning the International Carriage of Dangerous Goods by Rail
- STE: Short-time exposure
- STEL: Short-time exposure limit
- STOT: specific organ Toxicity
- TLV: occupational exposure threshold limit value
- TWA: 8-hour time-weighted average exposure limit
- OEL: EU occupational exposure limit value
- VLE: occupational exposure limit value
- WGK: water hazard class in Germany
- N.A.: Not applicable.
- N.D.: Not available
- PNEC: Predicted no-effect concentration
- RNN: REACH Registration NUMBER
- PBT: Persistent bioaccumulative and toxic according to REACH
- vPvB: Very Persistent and Very bioaccumulative according to REACH

This safety data sheet was developed in compliance with Annex II - Guide to the compilation of Safety Data Sheets of EC Regulation No. 1907/2006 - EC Regulation No. 453/2010.
The information contained herein is based on our knowledge at the above date.
These refer solely to the indicated product and do not constitute a guarantee of particular quality.
The user is required to ensure the suitability and completeness of this information in relation to the specific intended use.