Safety Data Sheet

According to Annex II to UK REACH

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

1.1 Product identifier

Item code	XEPOXG3000 Gel componente A XEPOX Gel componente A XEPOX70 componente A
UFI	JW50-809W-000A-QUTC

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

Identified uses
TWO-COMPONENT EPOXY ADHESIVE – Industrial uses
Chemical Product Category (PC)
Adhesives, sealants [1]
Environmental Release Categories (ERC / SPERC)
Widespread use leading to inclusion into/onto article (indoor) [8c]
Widespread use leading to inclusion into/onto article (outdoor) [8f]
Widespread use of non- reactive processing aid (no inclusion into or onto article, indoor) [8a]
Widespread use of non- reactive processing aid (no inclusion into or onto article, outdoor) [8d]
Widespread use of reactive processing aid (no inclusion into or onto article, indoor) [8b]
Process categories (PROC)
Mixing or blending in batch processes [5]
Roller application or brushing [10]
TWO-COMPONENT EPOXY ADHESIVE – Professional uses
Chemical Product Category (PC)
Adhesives, sealants [1]
Environmental Release Categories (ERC / SPERC)
Use of functional fluid at industrial site [7]
Widespread use leading to inclusion into/onto article (indoor) [8c]
Widespread use leading to inclusion into/onto article (outdoor) [8f]
Widespread use of non- reactive processing aid (no inclusion into or onto article, indoor) [8a]
Widespread use of non- reactive processing aid (no inclusion into or onto article, outdoor) [8d]
Widespread use of reactive processing aid (no inclusion into or onto article, indoor) [8b]
Process categories (PROC)
Mixing or blending in batch processes [5]
Roller application or brushing [10]

1.3 Details of the supplier of the safety data sheet

Business name	Rotho Blaas Srl
Full address	Via dell'Adige 2/1
Town	Cortaccia (BZ)
Postal code	39040
Province	BZ
Country	Italy
Phone number	+39-0471 81 84 00

Via dell'Adige N.2/1 | I-39040, Cortaccia (BZ) | N. REA: BZ - 120599 | C.F e P.IVA IT 01433490214 | Cap. Soc.: EUR 52.000,00.
Tel. +39 0471 81 84 00 | E-mail info@rothoblaas.com | Pec: rothoblaas@pec.it | www.rothoblaas.it

Fax	
e-mail address of the competent person responsible for the Safety Data Sheet	reach@rothoblaas.com

1.4 Emergency telephone number

For urgent inquiries refer to	NHS England and Scotland: 111 NHS Wales: 111 or 0845 4647 NPIC Ireland: 01 809 2166 NPIS UK: 0344 892 0111

2. Hazards identification

2.1 Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in Regulation GB CLP (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of Annex II-UK REACH.
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		
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 Regulation GB CLP and subsequent amendments and supplements.

Hazard pictograms

Signal words
Warning

Hazard statements	
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements	
P391	Collect spillage.
P273	Avoid release to the environment.
P261	Avoid breathing.
P280	Wear protective gloves.

Supplementary hazard statements	
EUH205	Contains epoxy constituents. May produce an allergic reaction.

Contains
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane
Oxirane, mono [(C12-14-alkyloxy) methyl] derivatives

2.3 Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage ≥ than 0,1%.
The product does not contain substances with endocrine disrupting properties in concentration ≥ 0.1%.

3. Composition/information on ingredients

3.2 Mixtures

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

Concentration	28.4 ≤ x < 31.4 %
CAS number	9003-36-5
EC number	500-006-8
Hazard classification and indication	❖ Skin Irrit. 2; H315 ❖ Skin Sens. 1; H317 ❖ Aquatic Chronic 2; H411

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Concentration	7.2 ≤ x < 7.9 %
CAS number	1675-54-3
EC number	216-823-5
INDEX number	603-073-00-2
Hazard classification and indication	❖ Skin Irrit. 2; H315 ❖ Skin Sens. 1; H317 ❖ Eye Irrit. 2; H319 ❖ Aquatic Chronic 2; H411

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

Concentration	2.51 ≤ x < 2.78 %
CAS number	68609-97-2
EC number	271-846-8
INDEX number	603-103-00-4
Hazard classification and indication	❖ Skin Irrit. 2; H315 ❖ Skin Sens. 1; H317

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

4. First aid measures

4.1 Description of first aid measures

In case of doubt or in the presence of symptoms contact a doctor and show him this document.
In case of more severe symptoms, ask for immediate medical aid.
EYES: Remove, if present, contact lenses if the situation allows you to do so easily. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. Get medical advice/attention.
SKIN: Take off immediately all contaminated clothing. Wash immediately and thoroughly with running water (and soap if possible). Get medical advice/attention. Avoid further contact with contaminated clothing.
INGESTION: Do not induce vomiting unless explicitly authorised by a doctor. Do not give anything by mouth to an unconscious person. Get medical advice/attention.

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INHALATION: Remove victim to fresh air, away from the accident scene. In the event of respiratory symptoms (coughing, wheezing, breathing difficulty, asthma) keep the victim in a comfortable position for breathing. If necessary administer oxygen. If the subject stops breathing, administer artificial respiration. Get medical advice/attention.

Rescuers protection

It is good practice for rescuers lending support to a person who has been exposed to a chemical substance or to a mixture to wear personal protective equipment. The nature of such protection depends on the hazard level of the substance or mixture, on the type of exposure and on the extent of the contamination. In the absence of other more specific indications, use of disposable gloves in the event of possible contact with body fluids is recommended. For the type of PPE suitable for the characteristics of the substance or mixture, see section 8.

4.2 Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product are unknown.
DELAYED EFFECTS: Based on the information currently available, there are no known cases of delayed effects following exposure to this product.

4.3 Indication of any immediate medical attention and special treatment needed

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

Means to have available in the workplace for specific and immediate treatment

Running water for skin and eye wash.

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).

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.

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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.

7. Handling and storage

7.1 Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2 Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

7.3 Specific end use(s)

Information not available.

8. Exposure controls/personal protection

8.1 Control parameters

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

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Consumers, short-term, dermal		No hazard identified
Consumers, short-term, inhalation		No hazard identified
Consumers, short-term, oral		No hazard identified
Consumers, long-term, dermal		0.5 mg/kg bw/d
Consumers, long-term, inhalation		0.87 mg/m³
Consumers, long-term, oral		0.5 mg/kg bw/d
Workers, short-term, dermal		No hazard identified
Workers, short-term, inhalation		No hazard identified
Workers, long-term, dermal		1 mg/kg bw/d
Workers, long-term, inhalation		3.6 mg/m³

Predicted no-effect concentration - PNEC	
Normal value of STP microorganisms	10 mg/l
Normal value in fresh water	
Normal value for fresh water sediment	307.16 mg/kg
Normal value in marine water	

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Predicted no-effect concentration - PNEC	
Normal value for marine water sediment	30.72 mg/kg
Normal value for the atmosphere	No hazard identified
Normal value for water, intermittent release	

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Consumers, long-term, dermal		0.0893 mg/kg bw/d
Consumers, long-term, inhalation		0.87 mg/m³
Consumers, long-term, oral		0.5 mg/kg bw/d
Workers, long-term, dermal		0.75 mg/kg bw/d
Workers, long-term, inhalation		4.93 mg/m³
Workers, long-term, oral		0.5 mg/kg bw/d

Predicted no-effect concentration - PNEC	
Normal value of STP microorganisms	10 mg/l
Normal value in fresh water	0.006 mg/l
Normal value for fresh water sediment	0.341 mg/kg
Normal value in marine water	0.001 mg/l
Normal value for marine water sediment	0.034 mg/kg
Normal value for the terrestrial compartment	0.065 mg/kg
Normal value for the food chain (secondary poisoning)	11 mg/kg
Normal value for water, intermittent release	0.18 mg/l
Normal value for fresh water, intermittent release	No hazard identified
Normal value for marine water, intermittent release	0.002 mg/l

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

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Consumers, short-term, dermal	No hazard identified	No hazard identified
Consumers, short-term, inhalation	No hazard identified	No hazard identified
Consumers, short-term, oral		No hazard identified
Consumers, long-term, dermal	No hazard identified	62.5 mg/kg bw/d
Consumers, long-term, inhalation	No hazard identified	8.7 mg/m³
Consumers, long-term, oral		6.25 mg/kg bw/d
Workers, short-term, dermal	No hazard identified	No hazard identified
Workers, short-term, inhalation	No hazard identified	No hazard identified
Workers, long-term, dermal	No hazard identified	104.15 mg/kg bw/d
Workers, long-term, inhalation	No hazard identified	29.39 mg/m³

Predicted no-effect concentration - PNEC	
Normal value of STP microorganisms	10 mg/l
Normal value in fresh water	0.003 mg/l
Normal value for fresh water sediment	0.294 mg/kg/d
Normal value in marine water	0.0003 mg/l
Normal value for marine water sediment	0.0294 mg/kg/d
Normal value for the terrestrial compartment	0.237 mg/kg

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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.
When choosing risk management measures and operating conditions, consult the exposure scenarios attached.
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.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	viscous liquid	
Colour	yellow	
Odour	characteristic	
Melting point / freezing point	Not available	
Boiling point	> 100 °C (> 212 °F)	
Flammability	Not available	
Lower explosive limit	Not available	
Upper explosive limit	Not available	
Flash point	> 100 °C (> 212 °F)	
Auto-ignition temperature	Not available	
Decomposition temperature	Not available	
pH	substance/mixture is non-soluble (in water)	
Kinematic viscosity (40 °C)	> 20.5 mm^2/s	

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Dynamic viscosity	450,000 Pl	Temperature: 25 °C (77 °F)
Solubility	soluble in organic solvents	
Partition coefficient: n-octanol/water	Not available	
Vapour pressure	Not available	
Density and/or relative density	2 g/cm³	Temperature: 25 °C (77 °F)
Relative vapour density	Not available	

Particle characteristics

Information not available.

9.2 Other information

9.2.1 Information with regard to physical hazards

Information not available.

9.2.2 Other safety characteristics

Total solids 250°	100 %	

10. Stability and reactivity

10.1 Reactivity

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

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Reacts with: amines, aliphatic amines, amides, organic anhydrides
Avoid contact with: strong oxidising agents, sodium hydroxide

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

Stable in normal conditions of use and storage

10.2 Chemical stability

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

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Stable in normal conditions of use and storage

10.3 Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

10.4 Conditions to avoid

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

10.5 Incompatible materials

Information not available.

10.6 Hazardous decomposition products

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

In decomposition develops: carbon monoxide, halogenated compounds

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11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.
It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1 Information on toxicological effects

11.1.1 Metabolism, toxicokinetics, mechanism of action and other information

Information not available.

11.1.2 Information on likely routes of exposure

Information not available.

11.1.3 Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available.

11.1.4 Interactive effects

Information not available.

11.1.5 ACUTE TOXICITY

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

LD50 (Oral):	26,800 mg/kg	
LD50 (Dermal):	> 4,000 mg/kg	
LC50 (Inhalation vapours):	> 0.15 mg/l	Exposure duration: 4h Species/guidelines: Tempo di esposizione: 7 h

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

LD50 (Oral):	15,000 mg/kg	Species/guidelines: Rat
LD50 (Dermal):	23,000 mg/kg	Species/guidelines: Rabbit

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

LD50 (Oral):	> 2,000 mg/kg	Species/guidelines: Rat
LD50 (Dermal):	> 2,000 mg/kg	Species/guidelines: Rabbit

11.1.6 SKIN CORROSION / IRRITATION

Causes skin irritation.

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

Species: Rabbit
Exposure time: 24 h
Method: Acute dermal toxicity
Result: Irritating to skin.

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

This product must be considered: Causes skin irritation. Information given is based on data obtained from similar substances. CAS: 9003-36-5 - Formaldehyde, polymer with (chloromethyl) oxirane and phenol Causes skin irritation. The tests were carried out on rabbits. Reference: Registration dossier - ECHA Chem CAS: 25068-38-6 - Epoxy resin (number average molecular weight ≤ 700) Reaction product: bisphenol-A- (epichlorhydrin) Pursuant to Annex VI of EC regulation 1272/2008: Causes skin irritation.

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11.1.7 SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

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

Species: Rabbit
Assessment: No eye irritation
Method: OECD Test Guideline 405
Result: mild irritation.

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Species: Rabbit
Assessment: Mild eye irritant
Method: OECD Test Guideline 405
Result: Irritating to eyes.

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

This product must be considered: Causes serious eye irritation. Information given is based on data obtained from similar substances. CAS: 25068-38-6 - Epoxy resin (number average molecular weight ≤ 700) Reaction product: bisphenol-A- (epichlorhydrin) According to annex VI of EC regulation 1272/2008: Causes serious eye irritation.

11.1.8 RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

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

This product must be considered: May cause an allergic skin reaction. Information given is based on data obtained from similar substances. CAS: 9003-36-5 - Formaldehyde, polymer with (chloromethyl) oxirane and phenol Skin sensitization test on guinea pigs - local lymph node test (LLNA): positive Reference: Registration dossier - ECHA Chem CAS: 25068-38-6 - Epoxy resin (number average molecular weight ≤ 700) Reaction product: bisphenol-A- (epichlorhydrin) According to annex VI of EC regulation 1272/2008: May cause an allergic skin reaction.

Skin sensitization

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

Test type: Buehler Test
Route of exposure: Skin
Species: Guinea pig
Method: OPPTS 870.2600
Result: May cause sensitization by skin contact.

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

In a study with LLNA assay on mice conducted according to OECD standard no. 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 study of maximization on guinea pig according to OECD standard no. 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 under the conditions of this study. BADGE was also positive for skin sensitization in a study with the Buehler method on guinea pigs conducted according to OECD standard no. 406.

11.1.9 GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

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

Test type: Ames test
Test System: Salmonella typhimurium
Metabolic activation: with or without metabolic activation
Method: OECD Test Guideline 471
Result: positive
Test type: In vitro mammalian cell gene mutation test

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Test System: Chinese Hamster Ovary Cells
Concentration: 0.5 - 5,000 µg / mL
Metabolic activation: with or without metabolic activation
Method: OECD Test Guideline 476
Result: negative.
Test type: In vivo micronucleus test
Species Essay: Mouse (male and female)
Cell type: Bone marrow
Method of application: Intraperitoneal injection
Exposure time: 24 hr, 48 hr, and 72 hr
Method: OECD Test Guideline 474
Result: negative.

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

In several studies, BADGE was found to induce gene mutation in experimental Ames / Salmonella TA1535 and TA100 strains. In general, mutagenic activity was greater without liver S9 metabolic activation. Induced gene mutation in L5178Y mouse lymphoma cells. Induced gene mutation and chromosomal damage in Chinese hamster V79 cells. Induced cell transformation into Syrian hamster BHK cells based on clonal growth in soft agar.
It induced no evidence of chromosomal damage in an oral probe study in a mouse dominant lethal test conducted up to a high dose level of 10 grams / kg and in a mouse micronuclear test conducted up to a high dose of 5000 mg / kg. Negative in a male mouse spermatocytic cytogenetic assay with treatment for 5 days by oral tube up to a high dose of 3000 mg / kg. It did not induce an increase in the frequency of chromosomal damage in an oral Chinese hamster bone marrow cell cytogenetic assay up to a high dose of 3300 mg / kg. It did not induce an increase in DNA strand breaks in rat liver cells following oral gavage treatment with 500 mg / kg, measured by alkaline elution.

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

This product must NOT be considered: Mutagenic Information given is based on data obtained from similar substances. CAS: 9003-36-5 - Formaldehyde, polymer with (chloromethyl) oxirane and phenol The in vitro tests revealed mutagenic effects, when the in vivo tests did not reveal them. Reference: Registration dossier - ECHA Chem.

11.1.10 CARCINOGENICITY

Does not meet the classification criteria for this hazard class

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

In a rat study with oral probe according to OECD standard no. 453 there was no evidence of carcinogenicity up to the high dose level of 100 mg / kg / day. Skin exposure studies were conducted on male and female rats according to OECD standard no. 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.

11.1.11 REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

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

This product must NOT be considered: Toxic for reproduction. Information given is based on data obtained from similar substances. CAS: 9003-36-5 - Formaldehyde, polymer with (chloromethyl) oxirane and phenol Animal experiments in the laboratory did not show toxic effects on reproduction. Reference: Registration dossier - ECHA Chem.

Adverse effects on sexual function and fertility

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

Species: Rat, male and female
Method of application: Dermal
Duration of the single treatment: 13 Weeks
Treatment frequency: 5 days / week
General toxicity parents: No observed harmful level: 100 mg / kg body weight
Method: OECD Test Guideline 411.

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2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Test type: Two-generation study
Species: Rat, male and female
Application method: Oral
Dose:> 750 Milligrams per kilo
General toxicity parents: Level within which no effects are observed: 540 mg / kg body weight
General toxicity F1: Level within which no effects are observed: 540 mg / kg body weight
Symptoms: No side effects.
Method: OECD Test Guideline 416
Result: There was no effect on fertility and early embryonic development.

Adverse effects on development of the offspring

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

Species: Rat, female
Method of application: Dermal
Duration of the single treatment: 6 h
General toxicity in mothers: No observed harmful level: 200 mg / kg body weight
Developmental Toxicity: No observed harmful level: 200 mg / kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

BADGE did not induce any evidence of developmental toxicity in rats and rabbits exposed by oral tube, or in rabbits treated by the dermal route, in GLP studies according to OECD standard No. 414. Oral tube studies were conducted up to a high dose level of 180 mg / kg / day which produced maternal toxicity based on decreased 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 decreased body weight gain.
Species: Rabbit, female
Method of application: Dermal
General toxicity in mothers: No harmful level observed: 30 mg / kg body weight
Method: Other reference guides
Result: No teratogenic effects.
Species: Rabbit, female
Application method: Oral
General toxicity in mothers: No observed harmful level: 60 mg / kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.
Species: Rat, female
Application method: Oral
General toxicity in mothers: No observed harmful level: 180 mg / kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects.

11.1.12 STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

11.1.13 STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

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

Species: Rat, male and female
NOEL: 1 mg / kg
LOAEL: 10 mg / kg
Method of application: Skin contact
Exposure time: 13 Weeks Number of exposures: 5 days / week for 13 weeks
Method: OECD Test Guideline 411.

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2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Species: Rat, male and female
NOAEL: 50 mg / kg
Application method: Ingestion
Exposure time: 14 WeeksNumber of exposures: 7 d
Method: Subchronic toxicity
Species: Rat, male and female
NOEL: 10 mg / kg
Method of application: Skin contact
Exposure time: 13 WeeksNumber of exposures: 5 d
Method: Subchronic toxicity
Species: Mouse, male
NOAEL: 100 mg / kg
Method of application: Skin contact
Exposure time: 13 WeeksNumber of exposures: 3 d
Method: Subchronic toxicity
Repeated Dose Toxicity - Evaluation
:
No adverse effects were observed in chronic toxicity tests.

11.1.14 ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class
Viscosity:

12. Ecological information

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

12.1 Toxicity

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

Chronic NOEC for Fish	100 mg/l	Species/guidelines: 96 h Rainbow Trout
Chronic NOEC for Algae / Aquatic Plants	500 mg/l	Species/guidelines: 72 h Selenastrum capricornutum

NOEL (48 h) 1.8 mg / l
Daphnia magna
OECD TG 202

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

EC50 - for Crustacea	2.7 mg/l	Exposure duration: 48h
LC50 - for Fish	1.41 mg/l	Exposure duration: 96h Species/guidelines: Tipo di test: Prova statica

12.2 Persistence and degradability

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

Degradability	NOT rapidly degradable

Test type: aerobic
Inoculum: activated sludge
Concentration: 100 mg / l
Result: Readily biodegradable.
Biodegradation: 87%
Exposure time: 28 d
Method: OECD Test Guideline 301F.

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2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

The level of biodegradation in an "improved" OECD 301F study was 5% within the 28-day contact period. Biodegradation reached 6 - 12% after 28 days of contact in a study conducted according to OECD standard No. 301B. Therefore BADGE is not readily biodegradable under the conditions of the studies.
Stability in water:
Half-life to degradation (TD50): 4.83 d (25 ° C)
pH: 4
Method: OECD TG 111
Observations: Fresh water
Half-life to degradation (TD50): 7.1 d (25 ° C)
pH: 9
Method: OECD TG 111
Observations: Fresh water
Half-life to degradation (TD50): 3.58 d (25 ° C)
pH: 7
Method: OECD TG 111
Observations: Fresh water.

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

Degradability	NOT rapidly degradable

This product should NOT be considered: It is rapidly biodegradable. Information given is based on data obtained from similar substances. CAS: 9003-36-5 - Formaldehyde, polymer with (chloromethyl) oxirane and phenol Not readily biodegradable (0% / 28 days). Reference: Registration dossier - ECHA Chem CAS: 25068-38-6 - Epoxy resin (number average molecular weight ≤ 700) Reaction product: bisphenol-A- (epichlorhydrin) According to annex VI of EC regulation 1272/2008: Not immediately biodegradable.

12.3 Bioaccumulative potential

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

log Pow: 3.77 (20 ° C)
Method: OECD Test Guideline 107.

2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane

Bioconcentration factor	< 6.8
Partition coefficient n-octanol/water	2.281 LogKow

LogPow 2.64 - 3.78
BCF 3 - 31 31.00
Low potential.

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

Bioconcentration factor	150

12.4 Mobility in soil

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

Moderately high mobility in soil. Information given is based on data obtained from similar substances. CAS: 9003-36-5 - Formaldehyde, polymer with (chloromethyl) oxirane and phenol Reference: Registration dossier - ECHA Chem.

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.

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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.

Hazardous waste classification - Reg. (UE) 1357/2014
HP 4 – Irritant — skin irritation and eye damage
HP 13 – Sensitising
HP 14 – Ecotoxic

14. Transport information

14.1 UN number

ADR / RID	IMDG	IATA
3082	3082	3082

❖ 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.
❖ 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.
❖ 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. (Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol – 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane)
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol – 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane)
IATA	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol – 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane)

14.3 Transport hazard class(es)

	Class:	Label	
ADR / RID	9	9	
IMDG	9	9	

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	Class:	Label	
IATA	9	9	

14.4 Packing group

ADR / RID	IMDG	IATA
III	III	III

14.5 Environmental hazards

ADR / RID	Environmentally Hazardous	
IMDG	Marine Pollutant	
IATA	Environmentally Hazardous	

14.6 Special precautions for user

ADR / RID			
HIN - Kemler	90	Limited Quantities	5 L
Tunnel restriction code	(-)	Special packing provisions	274, 335, 375, 601
IMDG			
EMS	F-A, S-F	Limited Quantities	5 L
IATA			
Maximum quantity (Cargo)	450 L	Packaging instructions (Cargo)	964
Maximum quantity (Passengers)	450 L	Packaging instructions (Passengers)	964
Special packing provisions	A97, A158, A197, A215		

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

15. Regulatory information

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

Seveso Category - Directive 2012/18/EU:
E2

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006		
	Restrictions	Registration Number UK
Product restrictions	3	
Contained substance		
None		

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors
Not applicable

Substances in Candidate List (Art. 59 REACH)	Registration Number UK
On the basis of available data, the product does not contain any SVHC in percentage ≥ than 0,1%.	

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Substances subject to authorisation (Annex XIV REACH)	Authorization Number	Sunset date	Registration Number UK
None			

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:
None

Substances subject to the Rotterdam Convention:
None

Substances subject to the Stockholm Convention:
None

15.2 Chemical safety assessment

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

Oxirane, mono [(C12-14-alkyloxy) methyl] derivatives
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol

16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:	
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
Skin Sens. 1	Skin sensitization, category 1
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.

Legend

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EC50: Effective concentration (required to induce a 50% effect)
- EC: Identifier in ESIS (European archive of existing substances)
- 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: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent, bioaccumulative and toxic
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PMT: Persistent, mobile and toxic

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Legend

- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 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: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds - vPvB: Very persistent and very bioaccumulative
- vPvM: Very persistent and very mobile
- WGK: Water hazard classes (German).

General Bibliography

GENERAL BIBLIOGRAPHY
1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
16. Regulation (EU) 2019/521 (XII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Regulation (EU) 2020/217 (XIV Atp. CLP)
19. Regulation (EU) 2020/1182 (XV Atp. CLP)
20. Regulation (EU) 2021/643 (XVI Atp. CLP)
21. The GB MCL List

- 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

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Chemical and physical hazards:
Product classification derives from criteria established by the GB 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 GB CLP, Part 3, unless determined otherwise in Section 11.
Environmental hazards:
Product classification is based on calculation methods as per Annex I of GB CLP, Part 4, unless determined otherwise in Section 12.

Changes from the previous revision

2. Hazards identification

2.2. Label elements

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Safety Data Sheet

According to Annex II to UK REACH

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

1.1 Product identifier

Item code	XEPOXG3000 Gel componente B XEPOX Gel componente B XEPOX70 componente B
UFI	4U50-R0MG-P00U-1H79

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

Identified uses
TWO-COMPONENT EPOXY ADHESIVE – Industrial uses
Chemical Product Category (PC)
Adhesives, sealants [1]
Environmental Release Categories (ERC / SPERC)
Widespread use leading to inclusion into/onto article (indoor) [8c]
Widespread use leading to inclusion into/onto article (outdoor) [8f]
Widespread use of non- reactive processing aid (no inclusion into or onto article, indoor) [8a]
Widespread use of non- reactive processing aid (no inclusion into or onto article, outdoor) [8d]
Widespread use of reactive processing aid (no inclusion into or onto article, indoor) [8b]
Process categories (PROC)
Mixing or blending in batch processes [5]
Roller application or brushing [10]
TWO-COMPONENT EPOXY ADHESIVE – Professional uses
Chemical Product Category (PC)
Adhesives, sealants [1]
Environmental Release Categories (ERC / SPERC)
Use of functional fluid at industrial site [7]
Widespread use leading to inclusion into/onto article (indoor) [8c]
Widespread use leading to inclusion into/onto article (outdoor) [8f]
Widespread use of non- reactive processing aid (no inclusion into or onto article, indoor) [8a]
Widespread use of non- reactive processing aid (no inclusion into or onto article, outdoor) [8d]
Widespread use of reactive processing aid (no inclusion into or onto article, indoor) [8b]
Process categories (PROC)
Mixing or blending in batch processes [5]
Roller application or brushing [10]

1.3 Details of the supplier of the safety data sheet

Business name	Rotho Blaas Srl
Full address	Via dell'Adige 2/1
Town	Cortaccia (BZ)
Postal code	39040
Province	BZ
Country	Italy
Phone number	+39-0471 81 84 00

Fax	-
e-mail address of the competent person responsible for the Safety Data Sheet	reach@rothoblaas.com

1.4 Emergency telephone number

For urgent inquiries refer to	NHS England and Scotland: 111 NHS Wales: 111 or 0845 4647 NPIC Ireland: 01 809 2166 NPIS UK: 0344 892 0111

2. Hazards identification

2.1 Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in Regulation GB CLP (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of Annex II-UK REACH.
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		
Acute toxicity, category 4	H302	Harmful if swallowed.
Skin corrosion, category 1A	H314	Causes severe skin burns and eye damage.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.
Serious eye damage, category 1	H318	Causes serious eye damage.
Specific target organ toxicity - single exposure, category 3	H335	May cause respiratory irritation.
Hazardous to the aquatic environment, chronic toxicity, category 3	H412	Harmful to aquatic life with long lasting effects.

2.2 Label elements

Hazard labelling pursuant to Regulation GB CLP and subsequent amendments and supplements.

Hazard pictograms

Signal words
Danger

Hazard statements	
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements	
P260	Do not breathe spray, vapours.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Precautionary statements	
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P280	Wear protective gloves / protective clothing / eye protection / face protection.

Contains
4,4'-methylbis(cyclohexanamine)
Oligomerisation and alkylation reaction products of 2-phenylpropene and phenol
Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia
3-Azapentane-1,5-diamine
4,4'-ISOPROPYLIDENEDIPHENOL

2.3 Other hazards

Endocrine disrupting properties
4,4'-ISOPROPYLIDENEDIPHENOL

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

3. Composition/information on ingredients

3.2 Mixtures

4,4'-methylbis(cyclohexanamine)

Concentration	19.4 ≤ x < 21.5 %
CAS number	1761-71-3
EC number	217-168-8
Hazard classification and indication	❖ Acute Tox. 4; H302 ❖ Skin Corr. 1A; H314 ❖ Skin Sens. 1; H317 ❖ Eye Dam. 1; H318 ❖ STOT SE 3; H335 ❖ Aquatic Chronic 4; H413
LD50 (Oral):	380 mg/kg

Oligomerisation and alkylation reaction products of 2-phenylpropene and phenol

Concentration	10.7 ≤ x < 11.8 %
CAS number	68512-30-1
EC number	270-966-8
Hazard classification and indication	❖ Skin Irrit. 2; H315 ❖ Skin Sens. 1B; H317 ❖ Aquatic Chronic 3; H412

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Concentration	2.65 ≤ x < 2.93 %
CAS number	9046-10-0
EC number	618-561-0
Hazard classification and indication	❖ Skin Corr. 1C; H314 ❖ Eye Dam. 1; H318 ❖ Aquatic Chronic 3; H412

3-Azapentane-1,5-diamine

Concentration	0.37 ≤ x < 0.41 %
CAS number	111-40-0
EC number	203-865-4

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INDEX number	612-058-00-X
Hazard classification and indication	❖ Acute Tox. 4; H302 ❖ Acute Tox. 4; H312 ❖ Skin Corr. 1B; H314 ❖ Skin Sens. 1; H317 ❖ Eye Dam. 1; H318 ❖ Acute Tox. 2; H330 ❖ STOT SE 3; H335
LC50 (Inhalation vapours):	1.8 mg/l (4h)

4,4'-ISOPROPYLIDENEDIPHENOL

Concentration	0.189 ≤ x < 0.209 %
CAS number	80-05-7
EC number	201-245-8
INDEX number	604-030-00-0
Hazard classification and indication	❖ Skin Sens. 1; H317 ❖ Eye Dam. 1; H318 ❖ STOT SE 3; H335 ❖ Repr. 1B; H360F ❖ Aquatic Acute 1; H400 ❖ Aquatic Chronic 1; H410
M Factor (acute)	1
M Factor (chronic)	1

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

4. First aid measures

4.1 Description of first aid measures

In case of doubt or in the presence of symptoms contact a doctor and show him this document.
In case of more severe symptoms, ask for immediate medical aid.
EYES: Remove, if present, contact lenses if the situation allows you to do so easily. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. Get medical advice/attention.
SKIN: Take off immediately all contaminated clothing. Wash immediately and thoroughly with running water (and soap if possible). Get medical advice/attention. Avoid further contact with contaminated clothing.
INGESTION: Do not induce vomiting unless explicitly authorised by a doctor. Rinse your mouth with running water. Do not give anything by mouth to an unconscious person. Get medical advice/attention.
INHALATION: Remove victim to fresh air, away from the accident scene. In the event of respiratory symptoms (coughing, wheezing, breathing difficulty, asthma) keep the victim in a comfortable position for breathing. If necessary administer oxygen. If the subject stops breathing, administer artificial respiration. Get medical advice/attention.

Rescuers protection

It is good practice for rescuers lending support to a person who has been exposed to a chemical substance or to a mixture to wear personal protective equipment. The nature of such protection depends on the hazard level of the substance or mixture, on the type of exposure and on the extent of the contamination. In the absence of other more specific indications, use of disposable gloves in the event of possible contact with body fluids is recommended. For the type of PPE suitable for the characteristics of the substance or mixture, see section 8.

4.2 Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product are unknown.
DELAYED EFFECTS: Poisoning symptoms can appear even hours after exposure: it is therefore appropriate to keep the injured person under observation in the hours following the accident.

4.3 Indication of any immediate medical attention and special treatment needed

Immediately call a poison center/doctor.

Means to have available in the workplace for specific and immediate treatment

Running water for skin and eye wash.

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).

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.

7. Handling and storage

7.1 Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2 Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

7.3 Specific end use(s)

Information not available.

8. Exposure controls/personal protection

8.1 Control parameters

Regulatory references	
ACGIH	ACGIH 2023
United Kingdom-WEL	EH40/2005 Workplace exposure limits (Fourth Edition 2020)

Oligomerisation and alkylation reaction products of 2-phenylpropene and phenol

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Consumers, short-term, dermal		No hazard identified
Consumers, short-term, oral		No hazard identified
Consumers, long-term, dermal	Not available	1.67 mg/kg bw/d
Consumers, long-term, inhalation	Not available	0.348 mg/m³
Consumers, long-term, oral	Not available	0.2 mg/kg bw/d
Workers, short-term, dermal		No hazard identified
Workers, long-term, dermal	Not available	3.5 mg/kg/d
Workers, long-term, inhalation	Not available	1.41 mg/m³

Predicted no-effect concentration - PNEC	
Normal value in fresh water	
Normal value for fresh water sediment	1,064 mg/kg
Normal value in marine water	
Normal value for marine water sediment	106.4 mg/kg
Normal value for the terrestrial compartment	212.2 mg/kg
Normal value for the food chain (secondary poisoning)	8.89 mg/kg
Normal value for the atmosphere	No hazard identified
Normal value for water, intermittent release	0.14 mg/l

4,4'-ISOPROPYLIDENEDIPHENOL

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Consumers, short-term, dermal		0.0019 mg/kg bw/d
Consumers, short-term, inhalation	1 mg/m³	1 mg/m³
Consumers, short-term, oral		0.004 mg/kg bw/d
Consumers, long-term, dermal	Not available	0.0019 mg/kg bw/d
Consumers, long-term, inhalation	1 mg/m³	1 mg/m³
Consumers, long-term, oral		0.004 mg/kg bw/d

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Workers, short-term, dermal		0.031 mg/kg bw/d
Workers, short-term, inhalation	2 mg/m³	2 mg/m³
Workers, long-term, dermal		0.031 mg/kg bw/d
Workers, long-term, inhalation	2 mg/m³	2 mg/m³

Predicted no-effect concentration - PNEC	
Normal value of STP microorganisms	320 mg/l
Normal value in fresh water	0.018 mg/l
Normal value for fresh water sediment	1.2 mg/kg
Normal value in marine water	0.018 mg/l
Normal value for marine water sediment	0.24 mg/kg
Normal value for the terrestrial compartment	3.7 mg/kg
Normal value for water, intermittent release	0.011 mg/l

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Workers, long-term, dermal		2.5 mg/kg bw/d
Workers, long-term, inhalation		10.58 mg/m³

Predicted no-effect concentration - PNEC	
Normal value of STP microorganisms	7.5 mg/l
Normal value in fresh water	0.015 mg/l
Normal value for fresh water sediment	0.132 mg/kg
Normal value in marine water	0.0143 mg/l
Normal value for marine water sediment	0.125 mg/kg
Normal value for the terrestrial compartment	0.0176 mg/kg
Normal value for the food chain (secondary poisoning)	6.93 mg/kg
Normal value for water, intermittent release	0.15 mg/l

4,4'-methylbis(cyclohexanamine)

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Consumers, short-term, oral	Not available	0.125 mg/kg bw/d
Consumers, long-term, dermal	Not available	0.125 mg/kg bw/d
Workers, short-term, dermal	Not available	0.63 mg/kg bw/d
Workers, short-term, inhalation	Not available	1.5 mg/m³
Workers, long-term, dermal	Not available	0.21 mg/kg bw/d
Workers, long-term, inhalation	Not available	0.5 mg/m³

Predicted no-effect concentration - PNEC	
Normal value of STP microorganisms	3.2 mg/l
Normal value in fresh water	0.008 mg/l
Normal value for fresh water sediment	137 mg/kg
Normal value in marine water	0.0008 mg/l
Normal value for marine water sediment	13.7 mg/kg/d
Normal value for the terrestrial compartment	27.2 mg/kg/d
Normal value for the food chain (secondary poisoning)	0.556 mg/kg
Normal value for water, intermittent release	0.08 mg/l

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Tel. +39 0471 81 84 00 | E-mail info@rothoblaas.com | Pec: rothoblaas@pec.it | www.rothoblaas.it

3-Azapentane-1,5-diamine

	TWA		STEL		CEILING		Remarks	
	mg/m³	ppm	mg/m³	ppm	mg/m³	ppm		
ACGIH	4.2	1					Skin	
United Kingdom-WEL	4.3	1					Skin	

Health - Derived no-effect level - DNEL / DMEL	Local effect	Systemic effect
Consumers, short-term, inhalation	Not available	
Consumers, long-term, inhalation		
Workers, short-term, inhalation	Not available	

Predicted no-effect concentration - PNEC	
Normal value in fresh water	0.56 mg/l
Normal value for fresh water sediment	1,072 mg/kg
Normal value in marine water	0.056 mg/l
Normal value for marine water sediment	107.2 mg/kg
Normal value for the terrestrial compartment	214 mg/kg

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.
When choosing risk management measures and operating conditions, consult the exposure scenarios attached.
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 III 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 a hood visor or protective visor combined with airtight goggles (see standard EN 166).
In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

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.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	viscous liquid	
Colour	white	
Odour	characteristic	
Melting point / freezing point	Not available	
Boiling point	> 100 °C (> 212 °F)	
Flammability	not flammable	
Lower explosive limit	Not available	
Upper explosive limit	Not available	
Flash point	> 100 °C (> 212 °F)	
Auto-ignition temperature	Not available	
Decomposition temperature	Not available	
pH	11	Solution concentration: 100 % Temperature: 25 °C (77 °F)
Kinematic viscosity (40 °C)	> 20.5 mm^2/s	
Dynamic viscosity	13,000 Pl	Temperature: 25 °C (77 °F)
Solubility	soluble in organic solvents	
Partition coefficient: n-octanol/water	Not available	
Vapour pressure	Not available	
Density and/or relative density	1.85 g/cm^3	Temperature: 25 °C (77 °F)
Relative vapour density	Not available	

Particle characteristics

Information not available.

9.2 Other information

9.2.1 Information with regard to physical hazards

Information not available.

9.2.2 Other safety characteristics

Total solids 250°	100 %	
VOC (Directive 2010/75/EU)	11.7 % – 216 g/l	
Volatile carbon	0.1861 % – 3 g/l	

10. Stability and reactivity

10.1 Reactivity

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

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Avoid contact with: acids
Polymerises developing heat on contact with: epoxy compounds
Possible formation of corrosive vapours
May attack: aluminium
May react dangerously if exposed to: isocyanates
Reacts violently developing heat on contact with: acids

Stable in normal conditions of use and storage

3-Azapentane-1,5-diamine

Avoid contact with: acids, oxidising agents

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

No hazardous reactions are foreseeable in normal conditions of use and storage.

3-Azapentane-1,5-diamine

Polymerises developing heat on contact with: epoxy compounds

10.4 Conditions to avoid

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

10.5 Incompatible materials

3-Azapentane-1,5-diamine

Corrodes: mild steel, aluminium, iron
Avoid contact with: alcohols, acids, halogenated compounds, nitrites

10.6 Hazardous decomposition products

Information not available.

11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.
It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1 Information on toxicological effects

11.1.1 Metabolism, toxicokinetics, mechanism of action and other information

Information not available.

11.1.2 Information on likely routes of exposure

Information not available.

11.1.3 Delayed and immediate effects as well as chronic effects from short and long-term exposure

4,4'-methylbis(cyclohexanamine)

A liver injury can occur. Ingestion can cause nausea, vomiting, sore throat, stomach pain and may eventually lead to bowel perforation.

11.1.4 Interactive effects

Information not available.

11.1.5 ACUTE TOXICITY

ATE (Inhalation - vapours) of the mixture	450 mg/l

ATE (Oral) of the mixture	1,853.659 mg/kg
ATE (Dermal) of the mixture	Not classified (no significant component)

Oligomerisation and alkylation reaction products of 2-phenylpropene and phenol

LD50 (Oral):	> 2,000 mg/kg	Species/guidelines: Rat
LD50 (Dermal):	> 2,000 mg/kg	
LC50 (Inhalation mists/powders):	> 4.92 mg/l	Exposure duration: 4h Species/guidelines: Rat

4,4'-ISOPROPYLIDENEDIPHENOL

LD50 (Oral):	> 2,000 mg/kg	
LD50 (Dermal):	3,000 mg/kg	Species/guidelines: Rabbit

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

LD50 (Oral):	2,885 mg/kg	Species/guidelines: rat oecd tg 401
LD50 (Dermal):	2,980 mg/kg	Species/guidelines: rabbit OECD TG 402
LC50 (Inhalation vapours):	> 0.74 mg/l	Exposure duration: 4h Species/guidelines: Rat OECD TG 403

4,4'-methylbis(cyclohexanamine)

LD50 (Oral):	380 mg/kg	Species/guidelines: rat ECHA Chem

3-Azapentane-1,5-diamine

LD50 (Oral):	1,140 mg/kg	Species/guidelines: Rat
LD50 (Dermal):	1,045 mg/kg	Species/guidelines: Rabbit
LC50 (Inhalation vapours):	1.8 mg/l	Exposure duration: 4h Species/guidelines: Rat

Inhalation: Fatal if inhaled. It can irritate the respiratory tract. Exposure to the products of decomposition can be dangerous to health. Following the exposure yes may experience serious delayed effects.
Ingestion: Harmful if swallowed. It can cause heartburn in the mouth, throat and stomach.
Skin contact: Causes severe burns. Harmful in contact with skin. It can cause a allergic skin reaction.
Eye contact: Causes serious eye damage.

11.1.6 SKIN CORROSION / IRRITATION

Corrosive for the skin

4,4'-ISOPROPYLIDENEDIPHENOL

Essentially non-irritating to the skin in case of short contact.
Prolonged contact can cause skin irritation with local redness.
Repeated contact may cause skin irritation with redness.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Species: Rabbit
Method: OECD TG 404
Result: Corrosive, category 1C (when reactions occur from exposures between 1 hour and 4 hours and observation times up to 14 days).

4,4'-methylbis(cyclohexanamine)

This product must be considered: Causes severe skin burns and eye damage. Based on published data. The tests were carried out on rabbits. Causes severe burns. Reference: Registration dossier - ECHA Chem (4,4'-methylenebis (cyclohexylamine)).

3-Azapentane-1,5-diamine

No official guidelines Rabbit - Corrosive.

11.1.7 SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage.

4,4'-ISOPROPYLIDENEDIPHENOL

May cause moderate eye irritation.
It can cause a minor corneal injury.
It can cause permanent deterioration of vision.
Dust can irritate the eyes.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Species: Rabbit
Rating: Corrosive
Method: OECD Test Guideline 405
Result: Risk of serious eye damage.

4,4'-methylbis(cyclohexanamine)

This product must be considered: Causes severe skin burns and eye damage. Based on published data. The tests were carried out on rabbits. Causes serious eye damage. Reference: Registration dossier - ECHA Chem (4,4'-methylenebis (cyclohexylamine)).

3-Azapentane-1,5-diamine

No official guidelines Rabbit - Corrosive.

11.1.8 RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

4,4'-ISOPROPYLIDENEDIPHENOL

Contact with the skin can cause an allergic skin reaction.
For respiratory sensitization:
No significant data found.

4,4'-methylbis(cyclohexanamine)

This product must be considered: May cause an allergic skin reaction. Based on published data. It causes awareness about the guinea pig. (OECD Guideline 406) Reference: Registration dossier - ECHA Chem (4,4'-methylenebis (cyclohexylamine)).

3-Azapentane-1,5-diamine

OECD 406 Skin Sensitization
Sensitizing guinea pig skin
No official guidelines
Respiratory system Mouse Does not cause sensitization.

Skin sensitization

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Route of exposure: Skin
Species: Guinea pig
Result: Does not cause skin sensitization.

11.1.9 GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

4,4'-ISOPROPYLIDENEDIPHENOL

In vitro genetic toxicity studies yielded mostly negative results. The results of genetic toxicity tests conducted on animals gave negative results.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Concentration: 0 - 10000 ug / plate
Metabolic activation: with or without metabolic activation
Method: OECD TG 471
Result: negative.

Metabolic activation: with or without metabolic activation
Method: OECD TG 476
Result: negative

Genotoxicity in vivo:
Application method: Oral
Dose: 500 mg / kg
Method: OECD TG 474
Result: negative

4,4'-methylbis(cyclohexanamine)

This product should NOT be considered: Mutagenic Based on published data. Mutagenicity (reverse mutation test on "Ames test" bacteria, in vitro): negative Mutagenicity (mammals: in vitro cytogenetic assay) negative In vivo micronucleus test negative Reference: Registration dossier - ECHA Chem (4,4'-methylenebis (cyclohexylamine)).

3-Azapentane-1,5-diamine

EPA CFR Negative
OECD 474 Mammalian Erythrocyte
Micronucleus Test
Negative.

11.1.10 CARCINOGENICITY

Does not meet the classification criteria for this hazard class

4,4'-ISOPROPYLIDENEDIPHENOL

In long-term animal studies no convincing evidence was seen for the carcinogenicity of bisphenol A.

3-Azapentane-1,5-diamine

No official guidelines Mouse 3 days a week Negative Cutaneous.

11.1.11 REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

4,4'-methylbis(cyclohexanamine)

This product must NOT be considered: Toxic for reproduction. Based on published data. Animal experiments in the laboratory did not show toxic effects on reproduction. The tests were performed on rats. Reference: Registration dossier - ECHA Chem (4,4'-methylenebis (cyclohexylamine)).

3-Azapentane-1,5-diamine

OECD 421 Reproduction / Developmental Toxicity Screening
Rat Oral Test: 100 mg / kg NOAE.

Adverse effects on sexual function and fertility

4,4'-ISOPROPYLIDENEDIPHENOL

Bisphenol A reproduced in affected rats and mice, but only at high levels of exposure that exceeded the body's ability to metabolize and deactivate the chemical. Maintaining exposures below appropriate workplace exposure limits should avoid these and other effects.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Species: Rat, male and female
Method of application: Dermal
Method: OECD TG 421
Result: Animal testing did not result in any effects on fertility.

Adverse effects on development of the offspring

4,4'-ISOPROPYLIDENEDIPHENOL

It was toxic to the fetus in laboratory animals at doses toxic to the mother. It did not cause birth defects in laboratory animals.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Test type: Prenatal
Species: Rabbit, female
Application method: Oral
Dose: 15/50/115 Milligram per kilo
Duration of the single treatment: 23 d
General toxicity in mothers: No observed harmful level: 50 mg / kg body weight
Developmental Toxicity: No observed harmful level: 115 mg / kg body weight
Method: OECD TG 414

11.1.12 STOT - SINGLE EXPOSURE

May cause respiratory irritation.

4,4'-ISOPROPYLIDENEDIPHENOL

It can irritate the respiratory tract.
Route of exposure: Inhalation
Target organs: Respiratory tract.

3-Azapentane-1,5-diamine

Category 3 Not applicable. Respiratory tract irritation.

11.1.13 STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

4,4'-ISOPROPYLIDENEDIPHENOL

Effects on the liver and dubious effects on the kidneys and bladder were observed on animals he had been to administered bisphenol A.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Species: Rat, male and female
NOAEL:> 250 mg / kg
Method of application: Dermal
Exposure time: 90 DaysNumber of exposures: 5d
Subsequent observation period: 28 days
Method: Subchronic toxicity
Species: Rat, male and female
NOAEL:> 239 mg / kg
Method of application: oral (food)
Exposure time: 31 Days Method: Subacute toxicity.

4,4'-methylbis(cyclohexanamine)

This product must be considered: May cause damage to organs through prolonged or repeated exposure. Based on published data. The tests were performed on rats. (OECD Guideline 422) NOAEL: No Observed Adverse Effect Level NOAEL (oral, rats) = 15 mg / kg bw / day Target organ: Skeletal muscles. Liver. Reference: Registration dossier - ECHA Chem (4,4'-methylenebis (cyclohexylamine)).

3-Azapentane-1,5-diamine

OECD NOEL - 70 to 80 mg / kg / d kidney, liver
No official guidelines NOAEL 114 mg / kg / d
No official guidelines NOEC Vapors 550 mg / m^3 -

11.1.14 ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class
Viscosity:

12. Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach

waterways or contaminate soil or vegetation.

12.1 Toxicity

Oligomerisation and alkylation reaction products of 2-phenylpropene and phenol

EC50 - for Crustacea	37 mg/l	Exposure duration: 48h
LC50 - for Fish	25.8 mg/l	Exposure duration: 96h
EC50 - for Algae / Aquatic Plants	15 mg/l	Exposure duration: 72h

4,4'-ISOPROPYLIDENEDIPHENOL

EC50 - for Crustacea	10.2 mg/l	Exposure duration: 48h Species/guidelines: Daphnia magna
LC50 - for Fish	4.6 mg/l	Exposure duration: 96h Species/guidelines: Menidia menidia
EC50 - for Algae / Aquatic Plants	1.1 mg/l	Exposure duration: 72h
Chronic NOEC for Crustacea	0.17 mg/l	

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

EC50 - for Crustacea	80 mg/l	Exposure duration: 48h Species/guidelines: OECD 202 Daphnia sp.

Toxicity to fish:
EC50 (Oncorhynchus mykiss (rainbow trout)):> 15 mg / l
End point: mortality
Exposure time: 96 h
Test type: Semi-static test
Test substance: Fresh water
Method: OECD TG 203

Toxicity to algae / aquatic plants:
EC50r (Selenastrum capricornutum (green alga)): 15 mg / l
Exposure time: 72 h
Test type: Static test
Test substance: Fresh water
Method: OECD Tg 201

Toxicity for micro-organisms:
EC50 (activated sludge): 750 mg / l
Exposure time: 3 h
Test type: Static test
Method: OECD Test Guideline 209

4,4'-methylbis(cyclohexanamine)

EC50 - for Crustacea	6.84 mg/l	Exposure duration: 48h Species/guidelines: Specie : Daphnia magna
LC50 - for Fish	< 100 mg/l	Exposure duration: 96h Species/guidelines: Specie : Ido dorato (Leuciscus idus)
EC50 - for Algae / Aquatic Plants	141.2 mg/l	Exposure duration: 72h

3-Azapentane-1,5-diamine

EC50 - for Crustacea	65 mg/l	Exposure duration: 48h Species/guidelines: Daphnia magna
LC50 - for Fish	430 mg/l	Exposure duration: 96h Species/guidelines: Poecilia reticulata
EC50 - for Algae / Aquatic Plants	187 mg/l	Exposure duration: 72h Species/guidelines: Selenastrum capricornutum

OECD 201 Alga, Chronic Growth Inhibition Test NOEC 72 hours

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Tel. +39 0471 81 84 00 | E-mail info@rothoblaas.com | Pec: rothoblaas@pec.it | www.rothoblaas.it

Static Algae 10 mg / l
No official guidelines Chronic NOEC 3 hours
Static Bacteria 6 mg / l
EU Chronic NOEC 21 days
Semistatic Daphnia 5.6 mg / l
OECD OECD 210 - Fish,
Early-Life Stage Toxicity Test Chronic NOEC 28 days Semistatic Fish 10 mg / l.

12.2 Persistence and degradability

4,4'-ISOPROPYLIDENEDIPHENOL

Solubility in water	301 mg/l
Degradability	Rapidly degradable

Biodegradability: The material is readily biodegradable. Pass the (I) OECD tests for the immediate biodegradability.
10-day window period: OK
Biodegradation: 93.1%
Exposure time: 28 d
Method: OECD 301F test method guideline or equivalent
10-day window period: Not applicable
Biodegradation: 87 - 95%
Exposure time: 28 d
Method: OECD 302A test method guideline or equivalent.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Solubility in water	100,000 mg/l
Degradability	NOT rapidly degradable

Inoculum: Mixture
Result: Not biodegradable.
Biodegradation: 0%
Exposure time: 28 d
Method: OECD TG 301 B.

4,4'-methylbis(cyclohexanamine)

Degradability	NOT rapidly degradable

This product should NOT be considered: It is rapidly biodegradable. Based on published data. Not readily biodegradable (10% / 28 days). (OECD TG 302B).

3-Azapentane-1,5-diamine

Solubility in water	1,000 ≤ x ≤ 10,000 mg/l
Degradability	Rapidly degradable

OECD 301D Ready Biodegradability - Closed Bottle Test 21 days 87%

12.3 Bioaccumulative potential

Oligomerisation and alkylation reaction products of 2-phenylpropene and phenol

Partition coefficient n-octanol/water	3.627 LogKow

4,4'-ISOPROPYLIDENEDIPHENOL

Bioconcentration factor	< 13.3
Partition coefficient n-octanol/water	3.4 LogKow

Bioaccumulation: The potential for bioconcentration is low (BCF less than 100 or Log Pow higher than 7).
Partition coefficient: n-octanol / water (log Pow): 3.4 at 21.5 ° C
test method OECD 107 or equivalent
Bioconcentration factor (BCF): 5.1 - 13.3 Cyprinus carpio (Carp) 42 d.

Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia

Partition coefficient n-octanol/water	1.34 LogKow

4,4'-methylbis(cyclohexanamine)

The product is not considered to be bioaccumulative. Based on published data. log Pow = 2.03 (25 ° C) Reference: Registration dossier - ECHA Chem (4,4'-methylenebis (cyclohexylamine)).

3-Azapentane-1,5-diamine

Partition coefficient n-octanol/water	-5.58004 LogKow

LogPow -1.58
BCF Potential 0.3 to 6.3.

12.4 Mobility in soil

4,4'-ISOPROPYLIDENEDIPHENOL

Partition coefficient soil/water	0.46982 LogKoc

Potential for mobility in soil is low (Koc between 500 and 2000).
Partition coefficient (Koc): 636 - 931 Measured.

3-Azapentane-1,5-diamine

Partition coefficient soil/water	3.4 LogKoc

Soil / water partition coefficient (KOC): 19111.

12.5 Results of PBT and vPvB assessment

4,4'-ISOPROPYLIDENEDIPHENOL

This substance / mixture does not contain components considered to be persistent, bioaccumulative that toxic (PBT), or very persistent and very bioaccumulative (vPvB) at concentrations of 0.1% or higher.

4,4'-methylbis(cyclohexanamine)

Substance does not meet the criteria for PBT or vPvB substances. Reference: Registration dossier - ECHA Chem (4,4'-methylenebis (cyclohexylamine)).

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.

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.

Hazardous waste classification - Reg. (UE) 1357/2014
HP 5 – Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP 8 – Corrosive
HP 13 – Sensitising
HP 14 – Ecotoxic

14. Transport information

14.1 UN number

ADR / RID	IMDG	IATA
2735	2735	2735

14.2 UN proper shipping name

ADR / RID	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (4,4'-methylbis(cyclohexanamine) – Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia)
IMDG	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (4,4'-methylbis(cyclohexanamine) – Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia)
IATA	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (4,4'-methylbis(cyclohexanamine) – Reaction products of di-, tri- and tetra-propoxylated propane-1,2-diol with ammonia)

14.3 Transport hazard class(es)

	Class:	Label	
ADR / RID	8	8	
IMDG	8	8	
IATA	8	8	

14.4 Packing group

ADR / RID	IMDG	IATA
II	II	II

14.5 Environmental hazards

ADR / RID	No	
IMDG	Not marine pollutant	
IATA	No	

14.6 Special precautions for user

ADR / RID			
HIN - Kemler	80	Limited Quantities	1 L
Tunnel restriction code	(E)	Special packing provisions	274
IMDG			
EMS	F-A, S-B	Limited Quantities	1 L
IATA			
Maximum quantity (Cargo)	30 L	Packaging instructions (Cargo)	855
Maximum quantity (Passengers)	1 L	Packaging instructions (Passengers)	851
Special packing provisions	A3, A803		

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14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

15. Regulatory information

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

Seveso Category - Directive 2012/18/EU:
None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006		
	Restrictions	Registration Number UK
Product restrictions	3	
Contained substance		
4,4'-ISOPROPYLIDENEDIPHENOL	30, 66	

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors
Not applicable

Substances in Candidate List (Art. 59 REACH)	Registration Number UK
4,4'-ISOPROPYLIDENEDIPHENOL	

Substances subject to authorisation (Annex XIV REACH)	Authorization Number	Sunset date	Registration Number UK
None			

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:
None

Substances subject to the Rotterdam Convention:
None

Substances subject to the Stockholm Convention:
None

15.2 Chemical safety assessment

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

3-Azapentane-1,5-diamine

16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:	
Acute Tox. 2	Acute toxicity, category 2
Acute Tox. 4	Acute toxicity, category 4
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity, category 1
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
Aquatic Chronic 4	Hazardous to the aquatic environment, chronic toxicity, category 4
Eye Dam. 1	Serious eye damage, category 1
Repr. 1B	Reproductive toxicity, category 1B
Skin Corr. 1A	Skin corrosion, category 1A

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Text of hazard (H) indications mentioned in section 2-3 of the sheet:	
Skin Corr. 1B	Skin corrosion, category 1B
Skin Corr. 1C	Skin corrosion, category 1C
Skin Irrit. 2	Skin irritation, category 2
Skin Sens. 1	Skin sensitization, category 1
Skin Sens. 1B	Skin sensitization, category 1B
STOT SE 3	Specific target organ toxicity - single exposure, category 3
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H360F	May damage fertility.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Legend

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EC50: Effective concentration (required to induce a 50% effect)
- EC: Identifier in ESIS (European archive of existing substances)
- 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: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent, bioaccumulative and toxic
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PMT: Persistent, mobile and toxic
- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 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: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds - vPvB: Very persistent and very bioaccumulative
- vPvM: Very persistent and very mobile
- WGK: Water hazard classes (German).

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General Bibliography

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1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2018/1480 (XIII Atp. CLP)
16. Regulation (EU) 2019/521 (XII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Regulation (EU) 2020/217 (XIV Atp. CLP)
19. Regulation (EU) 2020/1182 (XV Atp. CLP)
20. Regulation (EU) 2021/643 (XVI Atp. CLP)
21. The GB MCL List

- 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 GB 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 GB CLP, Part 3, unless determined otherwise in Section 11.
Environmental hazards:
Product classification is based on calculation methods as per Annex I of GB CLP, Part 4, unless determined otherwise in Section 12.

Changes from the previous revision

2. Hazards identification

2.2. Label elements

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