

BETOLIT EP 0-1 DC, W, FR, TH, NF, IP, flex component A

Creation date	24. March 2015	Revision no.	
Date of revision		Version	1

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

- 1.1. Product identifier**
substance / mixture
Number
Other names of the mixture
- BETOLIT EP 0-1 DC, W, FR, TH, NF, IP, flex component A
mixture
7-3, 7-12, 7-13, 7-17, 7-21, 9-9, 7-16
- 1.2. Relevant identified uses of the substance or mixture and uses advised against**
Intended use of the mixture
Not recommended use of the mixture
- epoxy resin
The product should not be used in ways other than those referred in Section 1.
- 1.3. Details of the supplier of the safety data sheet**
Manufacturer
Name or trade name
Place of business or residency
Telephone
Fax
E-mail
Web address
Emergency telephone number
- BETOSAN s.r.o.
Na Dolinách 28, Praha 4, 147 00
Czech Republic
241 431 212
241 431 212
praha@betosan.cz
www.betosan.cz
241 431 212, 8,00-16,00
- Competent person responsible for the safety data sheet**
Name
E-mail
- BETOSAN s.r.o.
praha@betosan.cz
- 1.4. Emergency telephone number**
Toxicological Information Centre, Na Bojišti 1, Praha, Tel.: non-stop 224 919 293 or 224 915 402, Information on health risks only - acute poisoning of humans and animals

SECTION 2: Hazards identification

- 2.1. Classification of the substance or mixture**
Classification of the mixture in accordance with Regulation (EC) No 1272/2008
A mixture is classified as dangerous.

Skin Irrit. 2, H315
Skin Sens. 1, H317
Eye Irrit. 2, H319
Aquatic Chronic 2, H411

The classification of the mixture according to Directive 1999/45/EC
A mixture is classified as dangerous.

Harmful: Xn; R 22
Irritant: Xi; R 36/38
sensitising: R 43
Dangerous for the environment: N; R 51/53

Full text of all classifications, H-phrases and R-phrases is given in the section 16.

The most serious adverse physicochemical effects

Unknown

The most serious adverse effects on human health and the environment

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Toxic to aquatic life with long lasting effects.

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2.2. Label elements
Warning symbol

Signal word

Warning

Hazardous substances

 epoxy resin (number average molecular weight ≤ 700)
 bisfenol F, epoxidová pryskyřice
 alkyl (C12-14) (2,3-epoxypropyl)ether

Hazard statements

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.

Instructions for safe handling

P261	Avoid breathing dust
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves.
P302+P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	Specific treatment (see Supplemental first aid instructions. on this label).
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P501	Dispose of contents/container to local\regional\national\international regulations.

2.3. Other hazards

not available

SECTION 3: Composition/information on ingredients
3.2. Mixtures
Chemical characterization

Mixture of substances specified below and additives.

Mixture contents these hazardous substances and substances with the highest permissible concentration in the working environment

Identification numbers	Name of the substance	Content in % weight of the mixture	Classification according to Directive 67/548/EEC	Classification according to Regulation (EC) No 1272/2008	Note
Index: 603-074-00-8 CAS: 25068-38-6 ES: 500-033-5	epoxy resin (number average molecular weight ≤ 700)	65-75	Xi; R 36/38 R 43 N; R 51/53	Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Irrit. 2, H319 Aquatic Chronic 2, H411	1, 2
CAS: 28064-14-4 ES: 28064-14-4	bisfenol F, epoxidová pryskyřice	15-25	Xn; R 22 Xi; R 36/38 R 43 N; R 51/53	Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Irrit. 2, H319 Aquatic Chronic 2, H411	

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Identification numbers	Name of the substance	Content in % weight of the mixture	Classification according to Directive 67/548/EEC	Classification according to Regulation (EC) No 1272/2008	Note
Index: 603-103-00-4 CAS: 68609-97-2 ES: 271-846-8	alkyl (C12-14) (2,3-epoxypropyl)ether	10-20	Xn; R 21 R 43	Skin Irrit. 2, H315 Skin Sens. 1, H317	

Notes

- 1 Substances for which there are exposure limits Community for working environment.
- 2 The substance with a specific concentration limit

The full text of all standard phrases and guidelines is specified in Section 16.

SECTION 4: First aid measures**4.1. Description of first aid measures**

If any health problems are manifested or if in doubt, inform a doctor and show him information from this Safety Data Sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that respiratory pathways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

Inhalation

Terminate the exposure immediately; move the affected person to fresh air. Protect the person against growing cold. Provide medical treatment, especially if cough, dyspnoea or other symptoms persist.

Skin contact

Remove contaminated clothes. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment, especially if skin irritation persists.

Eye contact

Immediately flush eyes with running water, open eyelids (even violently); if a victim has contact lenses, remove them immediately. Rinse for at least 10 minutes. Ensure medical, preferably professional treatment.

Ingestion

DO NOT INDUCE VOMITING - even the inducing of vomiting by itself may cause complications (inhalation of the substance in respiratory pathways and lungs; mechanical damage to the mucous membrane of the pharynx; may pose a higher threat than the ingested substance in this case). If possible, give activated carbon in the amount of 5 crushed tablets. Provide medical treatment.

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

Possible irritation of respiratory pathways, cough, headache.

Skin contact

Not expected.

Eye contact

Not expected.

Ingestion

Irritation, nausea.

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

Léčba symptomatická.

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SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Speciální pěna, prášky A-B-C-D-E nebo B-C-E.

Unsuitable extinguishing media

water - full jet

5.2. Special hazards arising from the substance or mixture

Heavy, black smoke is produced in a fire, with potential development of carbon monoxide and dioxide and other toxic gases. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

5.3. Advice for firefighters

Use a self-contained breathing apparatus and full-body protective clothing. Closed containers with the mixture near the fire should be cooled with water. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

The mixture is nonflammable. Provide sufficient ventilation. Use gloves in case of prolonged contact. Follow the instructions in Sections 7 and 8.

6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water. Do not allow to enter drains.

6.3. Methods and material for containment and cleaning up

Spilled mixture should be covered with suitable (nonflammable) absorbing material (sand, kieselguhr, earth and other suitable absorption materials); to be contained in well closed containers and removed as per Section 13. Collected material should be disposed of in accordance with locally valid regulations. Upon an escape of large quantities of the mixture, inform the Fire Department and the Environmental Department of the Municipal Authority with extended scope of competencies. After removal of the mixture, wash the contaminated site with plenty of water or another suitable cleaning material. Do not use solvents.

6.4. Reference to other sections

7, 8 and 13.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Prevent formation of gases and vapours in flammable or explosive concentrations and concentrations exceeding the highest permissible concentration in the occupational environment. The mixture should be used only in areas where it is not in contact with open fire and other ignition sources. No smoking. Protect against direct sunlight. Electrostatic charge may form during use; use only earthed piping (tubing) when repumping. Use of antistatic clothes and footwear is recommended. Use non-sparking tools. Do not inhale gases and vapours. Prevent contact with skin and eyes. Use personal protective equipment as per Section 8. Observe valid legal regulations laying down safety and health protection.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Do not expose to sunlight.

Storage class

12 - Other non-combustible liquids

Type of packaging

bucket

Material of package

FE (40), Steel (Metals)



FE

The specific requirements or rules relating to the substance/mixture

Solvent vapours are heavier than air and accumulate especially near the floor where they may form an explosive mixture with the air.

7.3. Specific end use(s)

not available

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

European Union

Name of the substance (component)	CAS number	Limit values				Note
		8 hours		Short-term		
		mg/m ³	ppm	mg/m ³	ppm	
dust epoxy resins	25068-38-6	2				

8.2. Exposure controls

Follow usual measures for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. If exposure limits cannot be observed in this mode, suitable protection of respiratory pathways must be used. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

Eye and face protection

Protective goggles or face shield (based on the nature of the work performed).

Skin protection

Hand protection: Protective gloves resistant against the product. Observe recommendations of the particular manufacturer of the gloves in the choice of their appropriate thickness, material and permeability. Use barrier creams to protect of the skin, they should however not be applied once exposure has occurred. Observe other recommendations of the manufacturer. Other protection: Protective antistatic clothing made of natural fibres (cotton) or synthetic fibres resistant against elevated temperatures. Contaminated skin should be washed thoroughly.

Respiratory protection

Mask with a filter against organic vapours or a self-contained breathing apparatus as appropriate if exposure limit values of toxic substances are exceeded or in a poorly ventilated environment.

Thermal hazard

not available

Restriction of the environment exposure

Observe usual measures for protection of the environment, see Section 6.2.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	liquid
physical state	liquid in 20°C
colour	pale yellow
Odour	no
Odour threshold	data not available
pH	data not available
Melting point/freezing point	data not available
Initial boiling point and boiling range	data not available
Flash point	data not available
Evaporation rate	data not available
Flammability (solid, gas)	data not available
Upper/lower flammability or explosive limits	
flammability limits	data not available
explosive limits	
bottom	0,9 %
upper	7,1 %
Vapour pressure	data not available
Vapour density	data not available
Relative density	data not available
Solubility(ies)	
solubility in water	<1%
solubility in fats	data not available
Partition coefficient: n-octanol/water	data not available
Auto-ignition temperature	data not available

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Decomposition temperature	data not available
Viscosity	data not available
Explosive properties	data not available
Oxidising properties	data not available

9.2. Other information

Density	1,11 g/cm ³
auto-ignition temperature	data not available

SECTION 10: Stability and reactivity

10.1. Reactivity

The mixture is nonflammable

10.2. Chemical stability

Under normal conditions, the mixture is stable.

10.3. Possibility of hazardous reactions

The mixture is stable under normal conditions.

10.4. Conditions to avoid

The mixture is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

10.5. Incompatible materials

Protect against strong acids, bases and oxidizing agents. Thereby a dangerous exothermic reaction will be prevented.

10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous products are formed at high temperature and in fire, such as carbon monoxide and carbon dioxide, heavy smoke and nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

No toxicological data is available for the mixture.

Acute toxicity

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Route of exposure	Parameter	Method	Value	Time of exposure	Species	Sex	Determining the value of	Source
oral	LC 50		2000 mg/kg	72 hour	rat (Rattus norvegicus)			

Based on available data, the classification criteria are not accomplished.

Corrosion/skin irritation

Causes skin irritation.

Serious eye damage / eye irritation

Causes serious eye irritation.

Respiratory / skin sensitization

May cause an allergic skin reaction.

Germ cells mutagenicity

Based on available data, the classification criteria are not accomplished.

Carcinogenicity

Based on available data, the classification criteria are not accomplished.

Reproductive toxicity

Based on available data, the classification criteria are not accomplished.

Toxicity for specific target organ - single exposure

Based on available data, the classification criteria are not accomplished.

Toxicity for specific target organ - repeated exposure

Based on available data, the classification criteria are not accomplished.

Aspiration hazard

Based on available data, the classification criteria are not accomplished.

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SECTION 12: Ecological information

12.1. Toxicity

Acute toxicity

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Parameter	Method	Value	Time of exposure	Species	Environment	Determining the value of	Source
LC 50		7,5 mg/kg	72 hour	fishes (Oncorhynchus mykiss)			
EC 50		3,3 mg/kg	48 hour	daphnia (Daphnia magna)			

Toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

The mixture is biodegradable.

12.3. Bioaccumulative potential

Insignificant.

12.4. Mobility in soil

The product is soluble and mobile in water and soil. Contamination of water courses may occur in case of rain.

12.5. Results of PBT and vPvB assessment

The mixture is not classified as PBT or vPvB.

12.6. Other adverse effects

not available

SECTION 13: Disposal considerations

Hazard of environmental contamination; remove waste in accordance with local and/or national regulations.

13.1. Waste treatment methods

Proceed in accordance with valid regulations laying down the disposal of waste. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to an authorised person for waste removal (specialized company) authorised for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

Legislation of waste

Council Directive 75/442/EEC on waste, at last amended. Council Directive 91/689/EEC on hazardous waste, as last amended. Decision 94/3/EC establishing a list of wastes, as last amended.

Code of type of waste

080410	waste adhesives and sealants other than those mentioned in 08 04 09
Type of waste	wastes from MFSU of adhesives and sealants (including waterproofing products)
Subgroup of waste	
Waste group	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS

Code of type of waste packaging

150110	packaging containing residues of or contaminated by dangerous substances
Type of waste	packaging (including separately collected municipal packaging waste)
Subgroup of waste	
Waste group	WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED

SECTION 14: Transport information

14.1. UN number

UN 3082

14.2. UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

14.3. Transport hazard class(es)

9 Miscellaneous dangerous substances and articles

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14.4 Packing group

III - Less hazardous substances

14.5. Environmental hazards

not available

14.6. Special precautions for user

not available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not available

Additional information

The hazard identification number

90	(Kemler Code)
3082	

UN number

M6

Classification code

9

Safety signs



Road transport ADR

Special provision 274, 335, 601

Limited amount 5 L

Extracted amounts E1

Packaging

Packaging instruction P001, IBC03, LP01, R001

Special provision for packaging PP1,

Packing provisions MP19

Portable tanks and containers for open stored materials

Guidelines T4

Special provision TP1, TP29

Tanks ADR

Code of the tank LGBV

Vehicles for the transport in tanks AT

Transport category 3

Tunnel restriction code E

Special provision for

transport of pieces V12

loading, unloading and manipulation CV13

Railway transport - RID

Special provision 274, 335, 601

Packaging

Packaging instruction P001, IBC03, LP01, R001

Special provision for packaging PP1,

Packing provisions MP19

Portable tanks and containers for open stored materials

Guidelines T4

Special provision TP1, TP29

Tanks RID

Code of the tank LGBV

Transport category 3

Special provision for

transport of pieces W 12

loading, unloading and manipulation CW 13

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Air transport - ICAO/IATA

Packing instructions for limited amount of	Y964
Packing instruction passenger	964
Packing instruction cargo	964

Marine transport - IMDG

EMS (emergency plan)	F-A, S-F
Marine pollution	No

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006, as amended. Directives 67/548/EEC, as amended, and 1999/45/EC, as amended.

15.2. Chemical safety assessment

not available

16. SECTION 16: Other information**A list of standard risk phrases used in the safety data sheet**

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.

Guidelines for safe handling used in the safety data sheet

P261	Avoid breathing dust
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves.
P302+P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	Specific treatment (see Supplemental first aid instructions. on this label).
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P501	Dispose of contents/container to local\regional\national\international regulations.

A list of additional standard phrases used in the safety data sheet

EUH 205	Contains epoxy constituents. May produce an allergic reaction.
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List of R-phrases used in the safety data sheet

R 21	Harmful in contact with skin.
R 22	Harmful if swallowed.
R 36/38	Irritating to eyes and skin.
R 43	May cause sensitisation by skin contact.
R 51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Other important information about safety of human health

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per Section 1. The user is responsible for adherence to all related health protection regulations.

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Key to the abbreviations and the acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Unique Numeric Identifier used in chemistry for chemical substances
CLP	Classification, Labelling and Packaging
CSN	Czech Technical Standard
DNEL	Derived no-effect level
EC50	Concentration of a substance when it is affected 50% of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
Ems	Emergency plan
ErC50	Environmental Release category
ES	Identification code for each substance listed in EINECS
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
IC50	Concentration causing 50 % blockade
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Transport
LC50	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD50	Lethal dose of a substance in which it can be expected death of 50% of the population
LOAEC	Lowest observed adverse effect concentration
LOAEL	Lowest observed adverse effect level
Log Kow	Octanol-water partition coefficient
MARPOL	International Convention for the Prevention of Pollution From Ships
MFAG	First Aid Manual
NOAEC	No observed adverse effect concentration
NOAEL	No observed adverse effect level
NOEC	No observed effect concentration
NOEL	No observed effect level
NPK	The maximum permissible concentration
PBT	Persistent ,Bioaccumulative and Toxic
PEL	Permissible Exposure Limit
PNEC	Predicted no-effect concentration
REACH	Registration, Evaluation and Restriction of chemicals (EP and Council Regulation (EC) No.1907/2006)
RID	Agreement on the transport of dangerous goods by rail
UN	Four-digit code reflecting the characteristics of substances or mixtures in transport
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very Persistent and very Bioaccumulative
Aquatic Chronic	Hazardous to the aquatic environment
Eye Irrit.	Eye irritation
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitization

Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the mixture.

Recommended restrictions of use

not available

Information about the sources of data used to compile the data sheet

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REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended, REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended, COMMISSION REGULATION (EU) No 453/2010, COUNCIL DIRECTIVE 67/548/EEC as amended and 1999/45/EC, COMMISSION REGULATION (EU) No 286/2011 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures.

The changes (which information has been added, deleted or modified)

Reworked the classification according to Regulation 1272/2008 (CLP).

Statement

The Safety Data Sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.

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

- 1.1. Product identifier**
substance / mixture
Number
Other names of the mixture
- BETOLIT EP 0-1 DC, W, FR, TH, NF, IP, flex component B
mixture
7-3, 7-12, 7-13, 7-17, 7-21, 9-9, 7-16
- 1.2. Relevant identified uses of the substance or mixture and uses advised against**
Intended use of the mixture
Not recommended use of the mixture
- epoxy resin
The product should not be used in ways other than those referred in Section 1.
- 1.3. Details of the supplier of the safety data sheet**
Manufacturer
Name or trade name
Place of business or residency
Telephone
Fax
E-mail
Web address
Emergency telephone number
- BETOSAN s.r.o.
Na Dolinách 28, Praha 4, 147 00
Czech Republic
241 431 212
241 431 212
praha@betosan.cz
www.betosan.cz
241 431 212, 8,00-16,00
- Competent person responsible for the safety data sheet**
Name
E-mail
- BETOSAN s.r.o.
praha@betosan.cz
- 1.4. Emergency telephone number**
Toxicological Information Centre, Na Bojišti 1, Praha, Tel.: non-stop 224 919 293 or 224 915 402, Information on health risks only - acute poisoning of humans and animals

SECTION 2: Hazards identification

- 2.1. Classification of the substance or mixture**
Classification of the mixture in accordance with Regulation (EC) No 1272/2008
A mixture is classified as dangerous.

Acute Tox. 3, H301, H311, H331
Skin Corr. 1B, H314
Skin Sens. 1, H317
Aquatic Chronic 2, H411

The classification of the mixture according to Directive 1999/45/EC
A mixture is classified as dangerous.

Harmful: Xn; R 20/21/22
corrosive: C; R 34
Toxic: T; R 39/23
Dangerous for the environment: N; R 51/53

Full text of all classifications, H-phrases and R-phrases is given in the section 16.

The most serious adverse physicochemical effects

Unknown

The most serious adverse effects on human health and the environment

Causes severe skin burns and eye damage. May cause an allergic skin reaction. Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled. Toxic to aquatic life with long lasting effects.

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2.2. Label elements**Warning symbol****Signal word**

Danger

Hazardous substances

benzyl alcohol
3-(aminimethyl)-3,5,5-trimethylcyklohexan-1-amin
m-fenylenbis(metylamin)

Hazard statements

H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H331	Toxic if inhaled.
H411	Toxic to aquatic life with long lasting effects.

Instructions for safe handling

P260	Do not breathe dust.
P261	Avoid breathing dust
P264	Wash hands and exposed parts of the body thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of water.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P311	Call a POISON CENTER.
P312	Call a POISON CENTER if you feel unwell.
P321	Specific treatment (see Supplemental first aid instructions. on this label).
P322	Specific measures (see additional instructions on this label).
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container to local\regional\national\international regulations.

Requirements for child-resistant fastenings and tactile warning of danger

Container has to be fitted with a tactile warning of danger. Packaging should be equipped with child-resistant top.

2.3. Other hazards

not available

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SECTION 3: Composition/information on ingredients**3.2. Mixtures****Chemical characterization**

Mixture of substances specified below and additives.

Mixture contents these hazardous substances and substances with the highest permissible concentration in the working environment

Identification numbers	Name of the substance	Content in % weight of the mixture	Classification according to Directive 67/548/EEC	Classification according to Regulation (EC) No 1272/2008	Note
Index: 603-057-00-5 CAS: 100-51-6 ES: 202-859-9	benzyl alcohol	>25	Xn; R 20/22	Acute Tox. 4, H302, H332	1
Index: 612-067-00-9 CAS: 2855-13-2 ES: 220-666-8	3-(aminimethyl)-3,5,5-trimethylcyklohexan-1-amin	>15	C; R 34 T; R 39/23 R 52	Acute Tox. 4, H302, H312 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412	
CAS: 1477-55-0 ES: 216-032-5	m-fenylenbis(metylamin)	>10	Xn; R 21/22 C; R 34 N; R 51/53	Acute Tox. 4, H302 Skin Corr. 1B, H314 Skin Sens. 1, H317 Acute Tox. 3, H331 Aquatic Chronic 3, H412	

Notes

1 Substances for which there are exposure limits Community for working environment.

The full text of all standard phrases and guidelines is specified in Section 16.

SECTION 4: First aid measures**4.1. Description of first aid measures**

If any health problems are manifested or if in doubt, inform a doctor and show him information from this Safety Data Sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that respiratory pathways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

Inhalation

Terminate the exposure immediately; move the affected person to fresh air. Protect the person against growing cold. Provide medical treatment if irritation, dyspnoea or other symptoms persist.

Skin contact

Remove contaminated clothes. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists. Note: If the mixture sticks to the skin and cannot be removed with water and cleaning products or edible oil, do not use force and leave for specialized treatment.

Eye contact

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. Rinsing should continue at least for 10 minutes. Provide medical treatment, specialized if possible. Note: If the product sticks to the skin of the eyelids and cannot be removed using water, do not use force and leave for specialized treatment.

Ingestion

DO NOT INDUCE VOMITING - even the inducing of vomiting by itself may cause complications (inhalation of the substance in respiratory pathways and lungs, for example, in detergents and other substances that produce foam or causing mechanical damage to the mucous membrane of the pharynx). If possible, give a small amount of activated carbon (1-2 crushed tablets). For persons with no symptoms, call the Toxicological Information Centre to decide about the need of medical treatment; provide information about the substances or composition of the product from the original packaging or the Safety Data Sheet of the substance or mixture. Provide medical treatment if the person has any health problems.

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

Possible irritation of respiratory pathways, cough, headache.

Skin contact

Painful reddening, irritation.

Eye contact

Not expected.

Ingestion

Irritation, nausea.

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

Symptomatic treatment.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist

Unsuitable extinguishing media

water - full jet

5.2. Special hazards arising from the substance or mixture

Heavy, black smoke is produced in a fire, with potential development of carbon monoxide and dioxide and other toxic gases. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

5.3. Advice for firefighters

Use a self-contained breathing apparatus and full-body protective clothing. Closed containers with the mixture near the fire should be cooled with water. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

The mixture is flammable. Provide sufficient ventilation. Use gloves in case of prolonged contact. Follow the instructions in Sections 7 and 8.

6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water. Do not allow to enter drains.

6.3. Methods and material for containment and cleaning up

Spilled mixture should be covered with suitable (nonflammable) absorbing material (sand, kieselguhr, earth and other suitable absorption materials); to be contained in well closed containers and removed as per Section 13. Collected material should be disposed of in accordance with locally valid regulations. Upon an escape of large quantities of the mixture, inform the Fire Department and the Environmental Department of the Municipal Authority with extended scope of competencies. After removal of the mixture, wash the contaminated site with plenty of water or another suitable cleaning material. Do not use solvents.

6.4. Reference to other sections

7, 8 and 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Prevent formation of gases and vapours in flammable or explosive concentrations and concentrations exceeding the highest permissible concentration in the occupational environment. The mixture should be used only in areas where it is not in contact with open fire and other ignition sources. No smoking. Protect against direct sunlight. Electrostatic charge may form during use; use only earthed piping (tubing) when repumping. Use of antistatic clothes and footwear is recommended. Use non-sparking tools. Do not inhale gases and vapours. Prevent contact with skin and eyes. Use personal protective equipment as per Section 8. Observe valid legal regulations laying down safety and health protection.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Do not expose to sunlight.

Storage class

12 - Other non-combustible liquids

Type of packaging

bucket

Material of package

FE (40), Steel (Metals)



FE

The specific requirements or rules relating to the substance/mixture

Solvent vapours are heavier than air and accumulate especially near the floor where they may form an explosive mixture with the air.

7.3. Specific end use(s)

not available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

European Union

Name of the substance (component)	CAS number	Limit values				Note
		8 hours		Short-term		
		mg/m ³	ppm	mg/m ³	ppm	
benzyl alcohol	100-51-6	40	9	80	18	

8.2. Exposure controls

Follow usual measures for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. If exposure limits cannot be observed in this mode, suitable protection of respiratory pathways must be used. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

Eye and face protection

Protective goggles or face shield (based on the nature of the work performed).

Skin protection

Hand protection: Protective gloves resistant against the product. Observe recommendations of the particular manufacturer of the gloves in the choice of their appropriate thickness, material and permeability. Use barrier creams to protect of the skin, they should however not be applied once exposure has occurred. Observe other recommendations of the manufacturer. Other protection: Protective antistatic clothing made of natural fibres (cotton) or synthetic fibres resistant against elevated temperatures. Contaminated skin should be washed thoroughly.

Respiratory protection

Mask with a filter against organic vapours or a self-contained breathing apparatus as appropriate if exposure limit values of toxic substances are exceeded or in a poorly ventilated environment.

Thermal hazard

not available

Restriction of the environment exposure

Observe usual measures for protection of the environment, see Section 6.2.

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

Appearance	liquid
physical state	liquid in 20°C
colour	yellow
Odour	ammonia
Odour threshold	data not available
pH	data not available
Melting point/freezing point	data not available
Initial boiling point and boiling range	>200 °C
Flash point	>100 °C
Evaporation rate	data not available
Flammability (solid, gas)	data not available
Upper/lower flammability or explosive limits	
flammability limits	data not available
explosive limits	
bottom	0,9 %
upper	7,1 %
Vapour pressure	data not available
Vapour density	data not available
Relative density	data not available
Solubility(ies)	
solubility in water	<1%
solubility in fats	data not available
Partition coefficient: n-octanol/water	data not available
Auto-ignition temperature	data not available
Decomposition temperature	data not available
Viscosity	data not available
Explosive properties	data not available
Oxidising properties	data not available

9.2. Other information

Density	1,03 g/cm ³
auto-ignition temperature	data not available

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

The mixture is nonflammable

10.2. Chemical stability

Under normal conditions, the mixture is stable.

10.3. Possibility of hazardous reactions

The mixture is stable under normal conditions.

10.4. Conditions to avoid

The mixture is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

10.5. Incompatible materials

Protect against strong acids, bases and oxidizing agents. Thereby a dangerous exothermic reaction will be prevented.

10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous products are formed at high temperature and in fire, such as carbon monoxide and carbon dioxide, heavy smoke and nitrogen oxides.

SECTION 11: Toxicological information**11.1. Information on toxicological effects**

No toxicological data is available for the mixture.

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Acute toxicity

benzyl alcohol

Route of exposure	Parameter	Method	Value	Time of exposure	Species	Sex	Determining the value of	Source
oral	LD 50		1230 mg/kg		rat			
dermal	LD 50		2000 mg/kg		rabbit			

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Route of exposure	Parameter	Method	Value	Time of exposure	Species	Sex	Determining the value of	Source
oral	LD 50		4400 mg/kg	72 hour	rat (Rattus norvegicus)			
dermal	LD 50		2000 mg/kg		rat (Rattus norvegicus)			
inhalation (aerosols)	LD 50		4170 mg/kg		rat (Rattus norvegicus)			
inhalation (vapor)	LD 50		2.1 mg/kg	48 hour	rat (Rattus norvegicus)			

Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled.

Corrosion/skin irritation

Causes severe skin burns and eye damage.

Serious eye damage / eye irritation

Based on available data, the classification criteria are not accomplished.

Respiratory / skin sensitization

May cause an allergic skin reaction.

Germ cells mutagenicity

Based on available data, the classification criteria are not accomplished.

Carcinogenicity

Based on available data, the classification criteria are not accomplished.

Reproductive toxicity

Based on available data, the classification criteria are not accomplished.

Toxicity for specific target organ - single exposure

Based on available data, the classification criteria are not accomplished.

Toxicity for specific target organ - repeated exposure

Based on available data, the classification criteria are not accomplished.

Aspiration hazard

Based on available data, the classification criteria are not accomplished.

SECTION 12: Ecological information

12.1. Toxicity

Acute toxicity

benzyl alcohol

Parameter	Method	Value	Time of exposure	Species	Environment	Determining the value of	Source
LC 50		10 mg/l	96 hour	fishes (Lepomis macrochirus)			
EC 50		55 mg/l	24 hour	daphnia (Daphnia magna)			

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Parameter	Method	Value	Time of exposure	Species	Environment	Determining the value of	Source
LC 50		10 mg/kg	96 hour	fishes (Oncorhynchus mykiss)			

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Parameter	Method	Value	Time of exposure	Species	Environment	Determining the value of	Source
EC 50		72 mg/kg	72 hour	algae (Selenastrum capricornutum)			

Toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

The mixture is biodegradable.

12.3. Bioaccumulative potential

Insignificant.

12.4. Mobility in soil

The product is soluble and mobile in water and soil. Contamination of water courses may occur in case of rain.

12.5. Results of PBT and vPvB assessment

The mixture is not classified as PBT or vPvB.

12.6. Other adverse effects

not available

SECTION 13: Disposal considerations

Hazard of environmental contamination; remove waste in accordance with local and/or national regulations.

13.1. Waste treatment methods

Proceed in accordance with valid regulations laying down the disposal of waste. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to an authorised person for waste removal (specialized company) authorised for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

Legislation of waste

Council Directive 75/442/EEC on waste, at last amended. Council Directive 91/689/EEC on hazardous waste, as last amended. Decision 94/3/EC establishing a list of wastes, as last amended.

Code of type of waste

080410

Type of waste

waste adhesives and sealants other than those mentioned in 08 04 09

Subgroup of waste

wastes from MFSU of adhesives and sealants (including waterproofing products)

Waste group

WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS

Code of type of waste packaging

150110

Type of waste

packaging containing residues of or contaminated by dangerous substances

Subgroup of waste

packaging (including separately collected municipal packaging waste)

Waste group

WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED

SECTION 14: Transport information**14.1. UN number**

UN 3267

14.2. UN proper shipping name

CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.

14.3. Transport hazard class(es)

8 Corrosive substances

14.4. Packing group

III - Less hazardous substances

14.5. Environmental hazards

not available

14.6. Special precautions for user

not available

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14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not available

Additional information

The hazard identification number	80 (Kemler Code)
UN number	3267
Classification code	C7
Safety signs	8

**Road transport ADR**

Special provision	274
Limited amount	5 L
Extracted amounts	E1

Packaging

Packaging instruction	P001, IBC03, LP01, R001
Packing provisions	MP19

Portable tanks and containers for open stored materials

Guidelines	T7
Special provision	TP1, TP28

Tanks ADR

Code of the tank	L4BN
Vehicles for the transport in tanks	AT
Transport category	3
Tunnel restriction code	E

Special provision for transport of pieces

V12

Railway transport - RID

Special provision	274
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Packaging

Packaging instruction	P001, IBC03, LP01, R001
Packing provisions	MP19

Portable tanks and containers for open stored materials

Guidelines	T7
Special provision	TP1, TP28

Tanks RID

Code of the tank	L4BN
Transport category	3

Special provision for transport of pieces

W 12

Air transport - ICAO/IATA

Packing instructions for limited amount of	Y841
Packing instruction passenger	852
Packing instruction cargo	856

Marine transport - IMDG

EMS (emergency plan)	F-A, S-B
Marine pollution	No

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SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006, as amended. Directives 67/548/EEC, as amended, and 1999/45/EC, as amended.

15.2. Chemical safety assessment

not available

16. SECTION 16: Other information**A list of standard risk phrases used in the safety data sheet**

H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Guidelines for safe handling used in the safety data sheet

P260	Do not breathe dust.
P261	Avoid breathing dust
P264	Wash hands and exposed parts of the body thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of water.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P311	Call a POISON CENTER.
P312	Call a POISON CENTER if you feel unwell.
P321	Specific treatment (see Supplemental first aid instructions. on this label).
P322	Specific measures (see additional instructions on this label).
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container to local\regional\national\international regulations.

List of R-phrases used in the safety data sheet

R 20/22	Harmful by inhalation and if swallowed.
R 21/22	Harmful in contact with skin and if swallowed.

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R 34	Causes burns.
R 39/23	Toxic: danger of very serious irreversible effects through inhalation.
R 51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 52	Harmful to aquatic organisms.

Other important information about safety of human health

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per Section 1. The user is responsible for adherence to all related health protection regulations.

Key to the abbreviations and the acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Unique Numeric Identifier used in chemistry for chemical substances
CLP	Classification, Labelling and Packaging
CSN	Czech Technical Standard
DNEL	Derived no-effect level
EC50	Concentration of a substance when it is affected 50% of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
Ems	Emergency plan
ErC50	Environmental Release category
ES	Identification code for each substance listed in EINECS
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
IC50	Concentration causing 50 % blockade
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Transport
LC50	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD50	Lethal dose of a substance in which it can be expected death of 50% of the population
LOAEC	Lowest observed adverse effect concentration
LOAEL	Lowest observed adverse effect level
Log Kow	Octanol-water partition coefficient
MARPOL	International Convention for the Prevention of Pollution From Ships
MFAG	First Aid Manual
NOAEC	No observed adverse effect concentration
NOAEL	No observed adverse effect level
NOEC	No observed effect concentration
NOEL	No observed effect level
NPK	The maximum permissible concentration
PBT	Persistent ,Bioaccumulative and Toxic
PEL	Permissible Exposure Limit
PNEC	Predicted no-effect concentration
REACH	Registration, Evaluation and Restriction of chemicals (EP and Council Regulation (EC) No.1907/2006)
RID	Agreement on the transport of dangerous goods by rail
UN	Four-digit code reflecting the characteristics of substances or mixtures in transport
UCVB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very Persistent and very Bioaccumulative
Acute Tox.	Acute toxicity
Aquatic Chronic	Hazardous to the aquatic environment
Skin Corr	Skin corrosion
Skin Sens.	Skin sensitization

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Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the mixture.

Recommended restrictions of use

not available

Information about the sources of data used to compile the data sheet

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended, REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended, COMMISSION REGULATION (EU) No 453/2010, COUNCIL DIRECTIVE 67/548/EEC as amended and 1999/45/EC, COMMISSION REGULATION (EU) No 286/2011 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures.

The changes (which information has been added, deleted or modified)

Reworked the classification according to Regulation 1272/2008 (CLP).

Statement

The Safety Data Sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.