SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name

Brandschutzschaum FALCOFOAM B1 (P020)

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

Relevant identified uses

Filler, sealant. Adhesive.

Uses advised against

No information.

1.3. Details of the supplier of the safety data sheet

Supplier

Falcone Bauchemie AG
Schwerzistrasse 36
8807 Freienbach
Tel. 055 / 410 20 30
e-Mail: info@falcone.ch

1.4. Emergency telephone number

Emergency

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SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

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

Aerosol 1; H222 Extremely flammable aerosol.
Aerosol 1; H229 Pressurised container: May burst if heated.
Skin Irrit. 2; H315 Causes skin irritation.
Skin Sens. 1; H317 May cause an allergic skin reaction.
Eye Irrit. 2; H319 Causes serious eye irritation.
Acute Tox. 4; H332 Harmful if inhaled.
Resp. Sens. 1; H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
STOT SE 3; H335 May cause respiratory irritation.
Carc. 2; H351 Suspected of causing cancer.
Lact.; H362 May cause harm to breast-fed children.
STOT RE 2; H373 May cause damage to organs through prolonged or repeated exposure.
Aquatic Chronic 4; H413 May cause long lasting harmful effects to aquatic life.

2.2 Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

Signal word: **Danger**

H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H362 May cause harm to breast-fed children.
H373 May cause damage to organs through prolonged or repeated exposure.
H413 May cause long lasting harmful effects to aquatic life.
EUH066 Repeated exposure may cause skin dryness or cracking.
P102 Keep out of reach of children.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P273 Avoid release to the environment.
P302 + P352 + P362 + P364 IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.
P410 + P412 Protect from sunlight. Do no expose to temperatures exceeding 50 °C/122°F.
P501 Dispose of contents/container in accordance with national regulation.

2.2.2. Contains:

diphenylmethanediisocyanate, isomeres and homologues (CAS: 9016-87-9)
alkanes, C14-17, chloro (CAS: 85535-85-9, EC: 287-477-0, Index: 602-095-00-X)

2.2.3. Special provisions

MDI notice
Persons already sensitised to diisocyanates may develop allergic reactions when using this product. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used.

2.3. Other hazards

Vapors can form an explosive mixture with air.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

For mixtures see 3.2.

3.2. Mixtures

Name	CAS EC Index	%	Classification according to Regulation (EC) No 1272/2008 (CLP)	Specific Conc. Limits	REACH Registration No.
diphenylmethanediisocyanate, isomeres and homologues	9016-87-9 - -	<50	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319 Acute Tox. 4; H332 Resp. Sens. 1; H334 STOT SE 3; H335 Carc. 2; H351 STOT RE 2; H373		-
tris (2-chloro-1-methylethyl)-phosphate	- 911-815-4 -	10-25	Acute Tox. 4; H302		01-2119486772-26
dimethyl ether *[U]*	115-10-6 204-065-8 603-019-00-8	10-25	Flam. Gas 1; H220 Press. Gas; H280		01-2119472128-37
alkanes, C14-17, chloro	85535-85-9 287-477-0 602-095-00-X	2,5-10	Lact.; H362 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 EUH066		01-2119519269-33
isobutane *[C, U]*	75-28-5 200-857-2 601-004-00-0	2,5-10	Flam. Gas 1; H220 Press. Gas; H280		01-2119485395-27
halogenated polyetherpolyol	86675-46-9 - -	2,5-10	Acute Tox. 4; H302		01-2119972940-30
propane *[U]*	74-98-6 200-827-9 601-003-00-5	<2,5	Flam. Gas 1; H220 Press. Gas; H280		01-2119486944-21

Notes for substances:

C	Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.
U	When put on the market gases have to be classified as 'Gases under pressure', in one of the groups compressed gas, liquefied gas, refrigerated liquefied gas or dissolved gas. The group depends on the physical state in which the gas is packaged and therefore has to be assigned case by case. The following codes are assigned: Press. Gas (Comp.) Press. Gas (Liq.) Press. Gas (Ref. Liq.) Press. Gas (Diss.) Aerosols shall not be classified as gases under pressure (See Annex I, Part 2, Section 2.3.2.1, Note 2).

SECTION 4. FIRST AID MEASURES

4.1. Description of first aid measures

General notes

Take off all contaminated clothing immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Never give anything by mouth to an unconscious person. Place patient in recovery position and ensure airway patency.
Use personal protective equipment. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. When it is suspected, that there may still be harmful vapours/fumes present in the air, respiratory protection (mask; self contained breathing apparatus) must be used.

Following inhalation

Remove patient to fresh air - move out of dangerous area. If victim is not breathing give artificial respiration. If breathing is difficult, give oxygen. Seek medical help immediately. Victim should rest in a warm place. In case of unconsciousness bring patient into stable side position and seek medical attention.

Following skin contact

Immediately remove contaminated clothing. Wash affected skin areas thoroughly with plenty of water and soap. Consult a physician.

Following eye contact

Immediately flush eyes with running water, keeping eyelids apart. Seek medical help.

Following ingestion

Ingestion is not possible. Accidental ingestion: Rinse mouth thoroughly with water. Consult a physician. Show the physician the safety data sheet or label.

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

Inhalation

Harmful.
May cause allergy or asthma symptoms or breathing difficulties if inhaled
Can cause irritation of respiratory system.
Coughing, sneezing, nasal discharge, labored breathing.

Skin contact

Irritating to the skin.
Itching, redness, pain.
May cause sensitisation by skin contact (itching, redness, rashes).

Eye contact

Strongly irritates the eyes.
Redness, tearing, pain.

Ingestion

Not likely.
Accidental ingestion:
Harmful to health.
May cause abdominal discomfort.
May cause nausea/vomiting and diarrhea.
Irritates mucous membranes in the mouth, throat, esophagus and in gastrointestinal area.

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

Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO_2).
Foam.
Fire extinguishing powder.
Water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

Full water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

In case of a fire toxic gases can be generated; do not inhale gases/smoke. In the event of fire the following can be generated: carbon monoxide (CO), carbon dioxide (CO_2).
Nitrogen oxides (NO_X).
Vapours of Isocyanates.
Hydrogen cyanide (HCN).
Hydrogen chloride (HCl).
Phosphorus oxides (PO_X).

5.3. Advice for firefighters

Protective actions

Extremely flammable. Container is under pressure. Prolonged heating can cause an explosion. Vapours can form explosive mixtures with air. In case of fire or heating do not breathe fumes/vapours. In case of fire evacuate the area. Cool containers at risk with water spray. If possible remove containers from endangered area. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for firefighters

Firefighters should wear appropriate protective clothing for firefighters (including helmets, protective boots and gloves) (EN 469) and self-contained breathing apparatus (SCBA) with a full face-piece (EN 137).

Additional information

Contaminated extinguishing agents must be disposed of in accordance with the regulations; do not allow to reach the sewage system.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment

Use personal protective equipment (Section 8). Use breathing protection against effects of steam/dust/aerosol.

Emergency procedures

Ensure adequate ventilation. Keep away from sources of ignition and/or heat; No smoking! No action shall be taken involving any personal risk or without suitable training. Prevent access to unprotected personnel. Prevent access to unauthorised personnel. Avoid contact with skin, eyes and clothing. Do not breathe vapour or mist.

6.1.2. For emergency responders

Use personal protective equipment.

6.2. Environmental precautions

Do not allow product to reach water/drains/sewage systems or permeable soil. If accidental large entry into water or ground occurs, inform responsible authorities.

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

Stem the spill if this does not pose risks.

6.3.2. For cleaning up

Collect the spray cans and hand them over to an authorized waste disposal contractor. Release of liquid because of damaged aerosol can (release of large quantities): Large quantities cover with damp sand. After aprox. one hour transfer to waste container and do not seal (evolution of CO2!). Do not absorb spillage with sawdust or other combustible material. Dispose in accordance with applicable regulations (see Section 13).

6.3.3. Other information

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6.4. Reference to other sections

See also Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for safe handling

7.1.1. Protective measures

Measures to prevent fire

Ensure adequate ventilation. Vapours and air form explosive mixtures. Keep away from sources of ignition - no smoking. Use spark-proof tools. Take precautionary measures against static discharges. Pressurized container; protect from sunlight and do not expose to tempratures exceeding 50°C. Do not pierce or burn, even after use. Do not spray on a naked flame or incandescent material.

Measures to prevent aerosol and dust generation

Use general or local exhaust ventilation to prevent inhaling vapours and aerosols.

Measures to protect the environment

Avoid release to the environment.

7.1.2. Advice on general occupational hygiene

Refer to instructions on label and regulations for safety and health at work. Consider measures required in Section 8 of this safety data sheet. Use personal protective equipment. Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Avoid contact with skin, eyes and clothes. Do not breathe vapours/mist.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1. Technical measures and storage conditions

Store in accordance with local regulations. Keep in well closed containers. Keep in cool and well ventilated area. Keep in a dry place. Keep away from sources of ignition. Protect from open fire, heat and direct sunlight. Keep out of the reach of children. Keep away from oxidising substances. Keep away from moisture and water. Keep away from food, drink and animal feeding stuffs.

7.2.2. Packaging materials

Store only in original container.

7.2.3. Requirements for storage rooms and vessels

Do not store in unlabelled containers.

7.2.4. Storage class

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7.2.5. Further information on storage conditions

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7.3. Specific end use(s)

Recommendations

-

Industrial sector specific solutions

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limit values

Name (CAS)	Limit values		Short-term exposure limit		Remarks	Biological Tolerance Values
	ml/m³ (ppm)	mg/m³	ml/m³ (ppm)	mg/m³		
Dimethyl ether (115-10-6)	400	766	500	958		
2,2'-Oxydiethanol (111-46-6)	23	101				
Isocyanates, all (as –NCO) Except methyl isocyanate (-)		0,02		0,07	Sen	1 µmol isocyanate-derived diamine/mol creatinine in urine - At the end of the period of exposure
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)					Biological monitoring guidance values: Isocyanates (applies to HDI, IPDI, TDI and MDI): 1 µmol isocyanate-derived diamine/mol creatinine in urine; sampling time: at the end of the period of exposure.	

8.1.2. Information on monitoring procedures

BS EN 14042:2003 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. BS EN 482:2012+A1:2015 Workplace exposure. General requirements for the performance of procedures for the measurement of chemical agents. BS EN 689:2018 Workplace exposure. Measurement of exposure by inhalation to chemical agents. Strategy for testing compliance with occupational exposure limit values.

8.1.3. DNEL/DMEL values

For components

Name	Type	Exposure route	Exposure frequency	Value	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	Worker	inhalation	long term (local effects)	0,05 mg/m³	
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	Worker	inhalation	short term (local effects)	0,1 mg/m³	
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	Consumer	inhalation	long term (local effects)	0,025 mg/m³	
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	Consumer	inhalation	short term (local effects)	0,05 mg/m³	
tris (2-chloro-1-methylethyl)-phosphate (-)	Worker	inhalation	long term (systemic effects)	8,2 mg/m³	
tris (2-chloro-1-methylethyl)-phosphate (-)	Worker	inhalation	short term (systemic effects)	22,6 mg/m³	
tris (2-chloro-1-methylethyl)-phosphate (-)	Worker	dermal	long term (systemic effects)	2,91 mg/kg bw/day	
tris (2-chloro-1-methylethyl)-phosphate (-)	Consumer	inhalation	long term (systemic effects)	1,45 mg/m³	
tris (2-chloro-1-methylethyl)-phosphate (-)	Consumer	inhalation	short term (systemic effects)	5,6 mg/m³	
tris (2-chloro-1-methylethyl)-phosphate (-)	Consumer	dermal	long term (systemic effects)	1,04 mg/kg bw/day	
tris (2-chloro-1-methylethyl)-phosphate (-)	Consumer	oral	long term (systemic effects)	0,52 mg/kg bw/day	
tris (2-chloro-1-methylethyl)-phosphate (-)	Consumer	oral	short term (systemic effects)	2 mg/kg bw/day	
dimethyl ether (115-10-6)	Worker	inhalation	long term (systemic effects)	1894 mg/m³	
dimethyl ether (115-10-6)	Consumer	inhalation	long term (systemic effects)	471 mg/m³	

8.1.4. PNEC values

For components

Name	Exposure route	Value	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	fresh water	1 mg/L	
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	water, intermittent release	10 mg/L	
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	marine water	0,1 mg/L	
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	water treatment plant	1 mg/L	
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	soil	1 mg/kg	dry weight
tris (2-chloro-1-methylethyl)-phosphate (-)	fresh water	0,32 mg/L	
tris (2-chloro-1-methylethyl)-phosphate (-)	water, intermittent release	0,51 mg/L	
tris (2-chloro-1-methylethyl)-phosphate (-)	marine water	0,032 mg/L	
tris (2-chloro-1-methylethyl)-phosphate (-)	water treatment plant	19,1 mg/L	
tris (2-chloro-1-methylethyl)-phosphate (-)	fresh water sediment	11,5 mg/kg	dry weight
tris (2-chloro-1-methylethyl)-phosphate (-)	marine water sediment	1,15 mg/kg	dry weight
tris (2-chloro-1-methylethyl)-phosphate (-)	soil	0,34 mg/kg	dry weight
tris (2-chloro-1-methylethyl)-phosphate (-)	food chain	11,6 mg/kg feed	oral
dimethyl ether (115-10-6)	fresh water	0,155 mg/L	
dimethyl ether (115-10-6)	water, intermittent release	1,549 mg/L	
dimethyl ether (115-10-6)	marine water	0,016 mg/L	
dimethyl ether (115-10-6)	water treatment plant	160 mg/L	
dimethyl ether (115-10-6)	fresh water sediment	0,681 mg/kg	dry weight
dimethyl ether (115-10-6)	marine water sediment	0,069 mg/kg	dry weight
dimethyl ether (115-10-6)	soil	0,045 mg/kg	dry weight

8.2. Exposure controls

8.2.1. Appropriate engineering control

Substance/mixture related measures to prevent exposure during identified uses

Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Avoid contact with skin, eyes and clothes. Do not breathe vapours/aerosols. Keep away from foodstuffs, beverages and feed. Keep working clothes separately.

Organisational measures to prevent exposure

Remove all contaminated clothes immediately and wash them before reuse.

Technical measures to prevent exposure

Provide good ventilation and local exhaust in areas with increased concentration.

8.2.2. Personal protective equipment

Eye and face protection

Safety glasses with side protection (EN 166).

Hand protection

Use chemical resistant gloves classified according to standard EN 374. Observe the manufacturer's instructions regarding the use, storage, maintenance and replacement of gloves. In case of damage or at the first signs of wear and tear, change the gloves immediately. Follow the manufacturer’s instructions about permeability and penetration times and specific workplace conditions (mechanic load, exposure duration). The penetration time is determined by the protective glove manufacturer and must be observed.

Skin protection

Wear suitable protective clothing. Cotton protective clothing and shoes that cover the entire foot (EN ISO 20345).

Respiratory protection

Wear suitable protective breathing mask (EN 136) with filter A2-P2 (EN 14387). For dust/gas/ vapor concentrations above the applicable filter limit, in case of oxygen concentrations below 17% or in vague conditions, autonomous self-contained breathing apparatus should be used, according to standard EN 137, EN 138.

Thermal hazards

-

8.2.3. Environmental exposure controls

Instruction measures to prevent exposure

If the products contaminates rivers and lakes or the sewage system, please notify the competent authorities.

Technical measures to prevent exposure

Do not allow product to reach drains, sewage systems or ground water.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

-	**Physical state:**	liquid; aerosol
-	**Colour:**	beige, according to specification
-	**Odour:**	

Important health, safety and environmental information

-	**pH**	No information.
-	**Melting point/freezing point**	No information.
-	**Initial boiling point/boiling range**	No information.
-	**Flash point**	No information.
-	**Evaporation rate**	No information.
-	**Flammability (solid, gas)**	No information.
-	**Explosion limits (vol%)**	3,3 – 26,2 vol % (dimethylether) 1,5 – 10,9 vol % (isobutane / propane)
-	**Vapour pressure**	< 1,0E-5 hPa at 20 °C
-	**Vapour density**	No information.
-	**Density**	**Density**: 1,217 kg/L at 20 °C
-	**Solubility**	No information.
-	**Partition coefficient**	No information.
-	**Auto-ignition temperature**	No information.
-	**Decomposition temperature**	No information.
-	**Viscosity**	No information.
-	**Explosive properties**	No information.
-	**Oxidising properties**	No information.

9.2. Other information

-	**Weight organic solvents**	188 g/l (VOC) 18 % (VOC)
-	**Remarks:**	

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

Stable under recommended transport or storage conditions.

10.2. Chemical stability

Product is stable under normal conditions of use, recommended handling and storage conditions.

10.3. Possibility of hazardous reactions

Exothermic reaction with amines and alcohols. 4,4'-methylenediphenyl diisocyanate polymerizes at ca. 200 ° C, CO_2 is released.

10.4. Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Do not expose to sunlight or temperatures above 50 ° C. Containers may explode when exposed to heat for too long. Vapours and air can form explosive mixtures. Protect from moisture and water - keep in dry place.

10.5. Incompatible materials

Isocyanates.
Oxidants.
Strong acids.
Strong bases. HF (hydrofluoric acid). Oxygen. Rubber. Viton.

10.6. Hazardous decomposition products

In case of fire/explosion vapours/gases that pose a health hazard are released.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

(a) Acute toxicity

Name	Exposure route	Type	Species	Time	Value	Method	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	oral	LD_{50}	rat		> 10000 mg/kg	OECD 401	
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	dermal	LD_{50}	rabbit		> 9400 mg/kg	OECD 402	
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	inhalation (dusts/mists)	LC_{50}	rat	4 h	0,31 mg/l	OECD 403	
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	inhalation (dusts/mists)	ATE			1,5 mg/l		Expert judgment
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	inhalation	-					Harmful if inhaled.
tris (2-chloro-1-methylethyl)-phosphate (-)	oral	LD_{50}	rat		630 – 2000 mg/kg		
tris (2-chloro-1-methylethyl)-phosphate (-)	dermal	LD_{50}	rabbit		> 2000 mg/kg		
tris (2-chloro-1-methylethyl)-phosphate (-)	dermal	LD_{50}	rat		> 2000 mg/kg		
tris (2-chloro-1-methylethyl)-phosphate (-)	inhalation	LC_{50}	rat	4 h	> 7 mg/l		
dimethyl ether (115-10-6)	Inhalation (gases)	LC_{50}	rat	4 h	309 mg/l		
alkanes, C14-17, chloro (85535-85-9)	oral	LD_{50}	rat		≥ 2000 mg/kg bw		
halogenated polyetherpolyol (86675-46-9)	oral	LD_{50}	rat (male)		917 mg/kg	OECD 401	
halogenated polyetherpolyol (86675-46-9)	inhalation (dusts/mists)	LC_{50}	rat (male/female)		> 4870 mg/m^3		

Additional information: Harmful if inhaled.

(b) Skin corrosion/irritation

Name	Species	Time	Result	Method	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	rabbit		Mild irritating.	OECD 404	
tris (2-chloro-1-methylethyl)-phosphate (-)			Non-irritant.		
dimethyl ether (115-10-6)			May cause frostbite.		
alkanes, C14-17, chloro (85535-85-9)			Can cause mild irritation.		
halogenated polyetherpolyol (86675-46-9)	rabbit		No irritant effect.	OECD 404	

Additional information: Causes skin irritation.

(c) Serious eye damage/irritation

Name	Species	Time	Result	Method	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	rabbit		No irritant effect.	OECD 405	
tris (2-chloro-1-methylethyl)-phosphate (-)			No irritant effect.		
alkanes, C14-17, chloro (85535-85-9)			Can cause mild irritation.		
halogenated polyetherpolyol (86675-46-9)	rabbit		Mild irritating.	OECD 405	

Additional information: Causes serious eye irritation.

(d) Respiratory or skin sensitisation

Name	Exposure route	Species	Time	Result	Method	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	dermal	guinea pig		Non sensitising.	OECD 406, Magnusson & Kligman test	
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	dermal	mouse		Sensitizing.	OECD 429	LLNA (Local Lymph Node Assay)
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	inhalation	rat		May cause sensitisation by inhalation.		
tris (2-chloro-1-methylethyl)-phosphate (-)	-			Non sensitising.		
alkanes, C14-17, chloro (85535-85-9)	-			According to known data the substance is not a chemical sensitizer.		
halogenated polyetherpolyol (86675-46-9)	dermal	guinea pig		It does not cause sensitization on laboratory animals.	OECD 406	

Additional information: May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

(e) (Germ cell) mutagenicity

Name	Type	Species	Time	Result	Method	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	in-vitro mutagenicity	*Salmonella typhimurium*		Negative with metabolic activation, negative without metabolic activation.	Ames test, OECD 471	
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	in-vivo mutagenicity	rat (male)	3 weeks	Negative.	OECD 474	inhalation ; 3 x 1 h per day
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	in-vitro mutagenicity			Negative. Based on available data, the classification criteria are not met.		
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	in-vivo mutagenicity			Negative. Based on available data, the classification criteria are not met.		
tris (2-chloro-1-methylethyl)-phosphate (-)				Negative.	Ames test	
tris (2-chloro-1-methylethyl)-phosphate (-)		mouse (lymphoma L5178Y)		Positive.		
tris (2-chloro-1-methylethyl)-phosphate (-)	in-vivo mutagenicity	mouse		Not genotoxic.	The micronucleus test	
dimethyl ether (115-10-6)				The chemical is not classified as mutagenic.		
dimethyl ether (115-10-6)	in-vitro mutagenicity			Negative.	OECD 471	Ames test
dimethyl ether (115-10-6)	in-vitro mutagenicity	Human (lymphocytes)		Negative.	cytogenetic test	OECD 473
dimethyl ether (115-10-6)	in-vivo mutagenicity	*Drosophila melanogaster*		Negative.	OECD 477	
alkanes, C14-17, chloro (85535-85-9)				The chemical is not classified as mutagenic.		
halogenated polyetherpolyol (86675-46-9)	in-vitro mutagenicity			Positive.		
halogenated polyetherpolyol (86675-46-9)	in-vivo mutagenicity			Negative.		

(f) Carcinogenicity

Name	Exposure route	Type	Species	Time	Value	Result	Method	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	inhalation (aerosol)		rat			The presence of tumors in the group with the largest dose.	OECD 453	5 days per week, 6 h per day; dose level: 0; 0,2; 1; 6 mg/m3
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	inhalation					Suspected of causing cancer.		
tris (2-chloro-1-methylethyl)-phosphate (-)						The chemical is not classified as carcinogenic.		IARC
tris (2-chloro-1-methylethyl)-phosphate (-)						Not classified as carcinogenic according to IARC, NTP and OSHA.		
dimethyl ether (115-10-6)						Substance is not classified as carcinogenic.		
alkanes, C14-17, chloro (85535-85-9)						Based to our knowledge and experience there are no adverse health effects expected if handled as recommended.		

(g) Reproductive toxicity

Name	Reproductive toxicity type	Type	Species	Time	Value	Result	Method	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	Teratogenicity	NOAEL	rat (female)	20 days	12 mg/m³	Did not show teratogenic effects in animal experiments.	OECD 414	6 h per day; inhalation, dose: 0; 1; 4; 12 mg/m3
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	Maternal toxicity	NOAEL	rat (female)	20 days	4 mg/m³		OECD 414	6 h per day; inhalation, dose: 0; 1; 4; 12 mg/m3
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	Developmental toxicity	NOAEL	rat (female)	20 days	4 mg/m³		OECD 414	6 h per day; inhalation, dose: 0; 1; 4; 12 mg/m3
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	Teratogenicity					Based on available data, the classification criteria are not met.		
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	Reproductive toxicity					Based on available data, the classification criteria are not met.		
dimethyl ether (115-10-6)	Reproductive toxicity	inhalation	rat		47 mg/L	Animal testing did not show any effects on fertility.	OECD 452	
dimethyl ether (115-10-6)	Maternal toxicity	NOAEL	rat		5000 ppm			Inhalation
dimethyl ether (115-10-6)	Teratogenicity	NOAEL	rat		40000 ppm			Inhalation
dimethyl ether (115-10-6)	Developmental toxicity	NOAEL	rat		40000 ppm			Inhalation
dimethyl ether (115-10-6)	-	NOAEL	rat		20000 ppm		OECD 414	inhalation (vapor), embryo-fetal development
alkanes, C14-17, chloro (85535-85-9)	Reproductive toxicity					May cause harm to breast-fed children.		
halogenated polyetherpolyol (86675-46-9)	Teratogenicity	NOAEL	rat		940 mg/kg		OECD 414	oral
halogenated polyetherpolyol (86675-46-9)	Maternal toxicity	NOAEL	rat		940 mg/kg		OECD 414	oral

Summary of evaluation of the CMR properties

Suspected of causing cancer. May cause harm to breastfed babies.

(h) STOT-single exposure

Name	Exposure route	Type	Species	Time	Organ	Value	Result	Method	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	inhalation	-					May cause respiratory irritation.		
tris (2-chloro-1-methylethyl)-phosphate (-)	-	-					Neurotoxicity: negative.		
halogenated polyetherpolyol (86675-46-9)	-	-					Not classified.		
Additional information: STOT - single exposure: May cause respiratory irritation.									

(i) STOT-repeated exposure

Name	Exposure route	Type	Species	Time	Organ	Value	Result	Method	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	inhalation (aerosol)	NOAEL	rat		Lungs, inner lining of the nose	0,2 mg/m^3	Irritating to the nose and lungs.	OECD 453	6 hours per day, 5 days per week; dose level: 0; 0,2; 1; 6 mg/m3
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	inhalation (aerosol)	LOAEL	rat		Lungs, inner lining of the nose	1 mg/m^3	Irritating to the nose and lungs.	OECD 453	6 hours per day, 5 days per week; dose level: 0; 0,2; 1; 6 mg/m3
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	inhalation	-			Respiratory tract		May cause damage to organs through prolonged or repeated exposure.		
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	-	-					repeated or prolonged exposure may cause sensitization.		
dimethyl ether (115-10-6)	Repeated dose toxicity	NOEL	rat	2 years		47 mg/L		OECD 452	inhalation
halogenated polyetherpolyol (86675-46-9)	-	-					Not classified.		
halogenated polyetherpolyol (86675-46-9)	-	NOAEC	rat (male/female)	90 days	upper respiratory tract	300 mg/m^3		OECD 413	

Additional information: May cause damage to organs through prolonged or repeated exposure.

(j) Aspiration hazard

Name	Result	Method	Remark
dimethyl ether (115-10-6)	Aspiration hazard: Not Classified.		

Additional information: Aspiration hazard: Not classified.

SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1. Acute (short-term) toxicity

For components

Substance (CAS Nr.)	Type	Value	Exposure time	Species	Organism	Method	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	LC_{50}	> 1000 mg/L	96 h	fish	*Danio rerio*	OECD 203	
	EC_{50}	> 100 mg/L	3 h	bacteria	Activated sludge	OECD 209	respiration inhibiton
	EC_{50}	> 1000 mg/L	24 h	crustacea	*Daphnia magna*	OECD 202	static test
	ErC_{50}	> 1640 mg/L	72 h	algae	*Scenedesmus subspicatus*	OECD 201	growth inhibition
tris (2-chloro-1-methylethyl)-phosphate (-)	LC_{50}	56,2 mg/L	96 h	fish			
	EC_{50}	131 mg/L	48 h	crustacea	*Daphnia magna*		
	EC_{50}	47 mg/L	96 h	freshwater algae			
	EC_{50}	82 mg/L	72 h	freshwater algae			
dimethyl ether (115-10-6)	LC_{50}	4,1 mg/L	96 h	fish	*Poecilia reticulata*		Semi-Static system
	EC_{50}	4,4 mg/L	48 h	crustacea	*Daphnia magna*		static test
	LC_{50}	755,5 mg/L	48 h	*Daphnia*		ECOSAR	
	EC_{50}	154,9 mg/L	96 h	algae		ECOSAR	
	EC_{10}	> 1600 mg/L		bacteria	*Pseudomonas putida*		static test
alkanes, C14-17, chloro (85535-85-9)	EC_{50}	0,006 mg/L	48 h	crustacea	*Daphnia magna*		
	LC_{50}	≥ 1 mg/L	96 h	crustacea	*Gammarus pulex*		
	LC_{50}	≥ 5000 mg/L	96 h	fish	*Alburnus alburnus*		
	EC_{50}	≥ 3,2 mg/L	96 h	algae	*Selenastrum capricornutum*		Biomass
halogenated polyetherpolyol (86675-46-9)	LC_{50}	> 1000 mg/L	96 h	fish	*Poecilia reticulata*	OECD 203	static test
	NOEC	1000 mg/L	48 h		*Daphnia magna*	OECD 202	static test
	EC_{50}	1000 mg/L	72 h	algae	*Pseudokirchneriella subcapitata*	OECD 201	static test
	NOEC	500 mg/L	72 h	algae	*Pseudokirchneriella subcapitata*	OECD 201	static test
	EC_{50}	> 100 mg/L	3 h	bacteria	Activated sludge	OECD 209	static test

12.1.2. Chronic (long-term) toxicity

For components

Substance (CAS Nr.)	Type	Value	Exposure time	Species	Organism	Method	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	NOEC	> 10 mg/l	21 days	crustacea	*Daphnia magna*	OECD 202	reproduction
	NOEC	> 1000 mg/kg	14 days	Soil macro-organisms	*Eisenia fetida*	OECD 207	mortality
	NOEC	> 1000 mg/kg	14 days	Terrestrial plants	*Avena sativa*	OECD 208	seeding growth
	NOEC	> 1000 mg/kg	14 days	Terrestrial plants	*Avena sativa*	OECD 208	Growth rate
	NOEC	> 1000 mg/kg	14 days	Terrestrial plants	*Lactuca sativa*	OECD 208	seeding growth
	NOEC	> 1000 mg/kg	14 days	Terrestrial plants	*Lactuca sativa*	OECD 208	Growth rate
tris (2-chloro-1-methylethyl)-phosphate (-)	NOEC	32 mg/l		crustacea	*Daphnia magna*		

12.2. Persistence and degradability

12.2.1. Abiotic degradation, physical- and photo-chemical elimination

For components

Substance (CAS Nr.)	Environment	Type / Method	Half Time	Evaluation	Method	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	water	hydrolysis	20 h	Substance rapidly hydrolyzes in water.	half-life	25°C
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	Air	photodegradation	0,92 days	After evaporation or in case of contact with air, moderately fast photochemical degradation.	SRC AOP	Concentration of OH-radicals: 500000 / cm3 ; T=25 °C

12.2.2. Biodegradation

For components

Substance (CAS Nr.)	Type	Rate	Time	Evaluation	Method	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	aerobic	0 %	28 days	not readily biodegradable	OECD 302 C	activated sludge
tris (2-chloro-1-methylethyl)-phosphate (-)	biodegradability			not readily biodegradable		
tris (2-chloro-1-methylethyl)-phosphate (-)	biodegradability			inherently biodegradable		
dimethyl ether (115-10-6)	aerobic	5 %	28 days	not readily biodegradable	OECD 301 D	activated sludge
alkanes, C14-17, chloro (85535-85-9)	Biodegradation in water			Slowly degradable.		
alkanes, C14-17, chloro (85535-85-9)	Biodegradation in soil			Slowly degradable.		
halogenated polyetherpolyol (86675-46-9)	aerobic	10 %	28 days	Not readily biodegradable.		closed bottle

12.3. Bioaccumulative potential

12.3.1. Partition coefficient

No information.

12.3.2. Bioconcentration factor (BCF)

For components

Substance (CAS Nr.)	species	Organism	Value	Duration	Evaluation	Method	Remark
diphenylmethanediisocyanate, isomeres and homologues (9016-87-9)	BCF	*Cyprinus carpio*	< 14	42 days	Significant accumulation in organisms is not to be expected.	OECD 305 C	0,2 mg/l
tris (2-chloro-1-methylethyl)-phosphate (-)	BCF		0,8 – 14				
alkanes, C14-17, chloro (85535-85-9)	BCF		< 2000		L/kg		
alkanes, C14-17, chloro (85535-85-9)	BMF		< 1				

12.4. Mobility in soil

12.4.1. Known or predicted distribution to environmental compartments

No information.

12.4.2. Surface tension

No information.

12.4.3. Adsorption/Desorption

For components

Substance (CAS Nr.)	Type	Criterion	Value	Evaluation	Method	Remark
tris (2-chloro-1-methylethyl)-phosphate (-)	Soil		174	(KOC) Moderate potential		
dimethyl ether (115-10-6)	Soil			Moderate mobility in soil		
alkanes, C14-17, chloro (85535-85-9)	Air			(H) slow volatilization		

12.5. Results of PBT and vPvB assessment

No evaluation.

12.6. Other adverse effects

No information.

12.7. Additional information

For product

May cause long lasting harmful effects to aquatic life.
Water hazard class 1 (self-assessment): slightly hazardous for water.
Avoid release to the environment.

For components

Substance: diphenylmethanediisocyanate, isomeres and homologues

Not expected to adsorb on soil.
Adverse effects on sewage treatment plants are not expected.
This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
Isocyanate reacts with water, forming CO2 and a solid insoluble product with a high melting point (polyurea). This reaction is promoted by surfactants (e.g. detergents) or water-soluble solvents. Polyurea is inert and non-degradabable.

Substance: tris (2-chloro-1-methylethyl)-phosphate

Low bioaccumulation potential.
This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
Water hazard class 1 (Self-assessment): slightly hazardous for water

Substance: dimethyl ether

Bioaccumulation is not expected.
This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

Substance: halogenated polyetherpolyol

High solubility and mobility in water.
This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

13.1.1. Product / Packaging disposal

Waste chemical

Do not allow product to reach drains/sewage systems. Avoid release to the environment. Dispose of in accordance with applicable waste disposal regulation. Disposal must be made according to official regulations: deliver it to authorised collector/remover/transformer of hazardous waste. Product and container must be disposed of safely.

Waste codes / waste designations according to LoW

16 05 04* - gases in pressure containers (including halons) containing dangerous substances

Packaging

Pressurized container. Do not pierce or burn, even after use. Uncleaned containers should not be perforated, cut or welded. Dispose of in accordance with applicable waste disposal regulation. Deliver completely emptied containers to approved waste disposal authorities.

Waste codes / waste designations according to LoW

15 01 11* - metallic packaging containing a dangerous solid porous matrix (for example asbestos), including empty pressure containers

13.1.2. Waste treatment-relevant information

-

13.1.3. Sewage disposal-relevant information

-

13.1.4. Other disposal recommendations

-

SECTION 14. TRANSPORT INFORMATION

14.1. UN number

UN 1950

14.2. UN proper shipping name

AEROSOLS

14.3. Transport hazard class(es)

2

14.4. Packing group

Not applicable.

14.5. Environmental hazards

NO.

14.6. Special precautions for user

Limited quantities

1 L

Tunnel restriction code

(D)

IMDG EmS

F-D, S-U

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

Goods may not be carried in bulk in bulk containers, containers or vehicles.

SECTION 15. REGULATORY INFORMATION

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

- Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (including last amendment Commission Regulation (EU) 2015/830)

- Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

15.1.1. Information according 2004/42/EC about limitation of emissions of volatile organic compounds (VOC-guideline)

Not applicable.

15.2. Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16. OTHER INFORMATION

Indication of changes

-

Abbreviations and acronyms

ATE - Acute Toxicity Estimate
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
CEN - European Committee for Standardisation
C&L - Classification and Labelling
CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
CAS# - Chemical Abstracts Service number
CMR - Carcinogen, Mutagen, or Reproductive Toxicant
CSA - Chemical Safety Assessment
CSR - Chemical Safety Report
DMEL - Derived Minimal Effect Level

DNEL - Derived No Effect Level
DPD - Dangerous Preparations Directive 1999/45/EC
DSD - Dangerous Substances Directive 67/548/EEC
DU - Downstream User
EC - European Community
ECHA - European Chemicals Agency
EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)
EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)
EEC - European Economic Community
EINECS - European Inventory of Existing Commercial Substances
ELINCS - European List of notified Chemical Substances
EN - European Standard
EQS - Environmental Quality Standard
EU - European Union
Euphrac - European Phrase Catalogue
EWC - European Waste Catalogue (replaced by LoW – see below)
GES - Generic Exposure Scenario
GHS - Globally Harmonized System
IATA - International Air Transport Association
ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG - International Maritime Dangerous Goods
IMSBC - International Maritime Solid Bulk Cargoes
IT - Information Technology
IUCLID - International Uniform Chemical Information Database
IUPAC - International Union for Pure Applied Chemistry
JRC - Joint Research Centre
Kow - octanol-water partition coefficient
LC_{50} - Lethal Concentration to 50 % of a test population
LD_{50} - Lethal Dose to 50% of a test population (Median Lethal Dose)
LE - Legal Entity
LoW - List of Wastes (see http://ec.europa.eu/environment/waste/framework/list.htm)
LR - Lead Registrant
M/I - Manufacturer / Importer
MS - Member States
MSDS - Material Safety Data Sheet
OC - Operational Conditions
OECD - Organization for Economic Co-operation and Development
OEL - Occupational Exposure Limit
OJ - Official Journal
OR - Only Representative
OSHA - European Agency for Safety and Health at work
PBT - Persistent, Bioaccumulative and Toxic substance
PEC - Predicted Effect Concentration
PNEC(s) - Predicted No Effect Concentration(s)
PPE - Personal Protection Equipment
(Q)SAR - Qualitative Structure Activity Relationship
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
RIP - REACH Implementation Project
RMM - Risk Management Measure
SCBA - Self-Contained Breathing Apparatus
SDS - Safety data sheet
SIEF - Substance Information Exchange Forum
SME - Small and Medium sized Enterprises
STOT - Specific Target Organ Toxicity
(STOT) RE - Repeated Exposure
(STOT) SE - Single Exposure
SVHC - Substances of Very High Concern
UN - United Nations
vPvB - Very Persistent and Very Bioaccumulative

Key literature references and sources for data

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List of relevant H phrases

H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer .
H362 May cause harm to breast-fed children.
H373 May cause damage to organs through prolonged or repeated exposure .
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
EUH066 Repeated exposure may cause skin dryness or cracking.

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☑ Provided correct labelling of the product
☑ Compliance with the local legislation
☑ Provided correct classification of the product
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