

PremFire B1 FR Construction Foam

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

1.1. Product Name/Identifier

PremFire B1 FR Construction Foam

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

Expanding Fire rated construction foam.

1.3. Details of the supplier of the safety data sheet

Premier Sealant Systems Ltd.
Mercia Way,
Foxhills Industrial Park,
Scunthorpe,
North Lincolnshire,
DN15 8RE
Tel. 01724 864 100

1.4. Emergency telephone number

NPIS (National Poisons Information Service): 0344 892 0111 (for medical professionals only). For medical advice, members of the public should contact NHS 111 in England: 111; NHS 24 in Scotland: 111; NHS Direct in Wales: 111 or 0845 4647. In Northern Ireland: contact your local GP or pharmacist. In Europe call 112.

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to GB CLP Regulation

Classification of this product has been carried out in accordance with GB CLP Regulation.

Aerosol 1: Pressurised container: May burst if heated., H229

Aerosol 1: Flammable aerosols, Category 1, H222

Carc. 2: Carcinogenicity, Category 2, H351

Eye Irrit. 2: Eye irritation, Category 2, H319

Resp. Sens. 1: Sensitisation, respiratory, Category 1, H334

Skin Irrit. 2: Skin irritation, Category 2, H315

Skin Sens. 1: Sensitisation, skin, Category 1, H317

STOT RE 2: Specific target organ toxicity, repeated exposure, Category 2, H373
STOT SE 3: Respiratory tract toxicity, single exposure, Category 3, H335.

2.2. Label elements

Hazard pictograms



Signal word

Danger.

Hazard statements

Pressurised container: May burst if heated.
Extremely flammable aerosol.
Suspected of causing cancer.
Causes serious eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Causes skin irritation.
May cause an allergic skin reaction.
May cause damage to organs through prolonged or repeated exposure.
May cause respiratory irritation.

Precautionary statements

If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Do not spray on an open flame or other ignition source.
Do not pierce or burn, even after use.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/face protection/protective clothing/respiratory protection/protective footwear.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122°F.
Dispose of the contents and/or its container using the separate collection system in your municipality.

Supplemental label information

Contains isocyanates. May produce an allergic reaction.

Substances that contribute to the classification

4,4'-methylenediphenyl diisocyanate, isomers and homologues.

Additional Labelling:

As from 24 August 2023 adequate training is required before industrial or professional use. 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

Product does not meet PBT/vPvB criteria.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable.

3.2. Mixtures

This product is a mixture composed of polymers, dispersants and organic compounds. In accordance with Annex II of The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020, the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 9016-87-9	4,4'-methylenediphenyl diisocyanate, isomers and homologues Acute Tox. 4: H332; Carc. 2: H351; Eye Irrit. 2: H319; Resp. Sens. 1: H334; Skin Irrit. 2: H315; Skin Sens. 1: H317; STOT RE 2: H373; STOT SE 3: H335 - Danger	30 - <50 %
CAS: 1244733-77-4	Reaction products of phosphoryl trichloride and 2-methyloxirane Acute Tox. 4: H302; Aquatic Chronic 3: H412 - Warning	10 - <20 %
CAS: 86675-46-9	Polymer with 2-Butyne-1,4-Diol and (Chloromethyl-)Oxirane, Brominated, Dehydrochlorinated, Methoxylated Acute Tox. 4: H302 - Warning	10 - <20 %
CAS: 75-37-6	1,1-difluoroethane Flam. Gas 1A: H220; Press. Gas: H280 - Danger	2,5 - <10 %
CAS: 75-28-5	Isobutane Flam. Gas 1A: H220; Press. Gas: H280 - Danger	2,5 - <10 %
CAS: 115-10-6	Dimethyl ether Flam. Gas 1A: H220; Press. Gas: H280 - Danger	2,5 - <10 %
CAS: 78-40-0	triethyl phosphate Acute Tox. 4: H302; Eye Irrit. 2: H319 - Warning	1 - <2,5 %
CAS: 74-98-6	Propane Flam. Gas 1A: H220; Press. Gas: H280 - Danger	1 - <2,5 %

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

Other information

Identification	Specific concentration limit
4,4'-methylenediphenyl diisocyanate, isomers and homologues CAS: 9016-87-9	% (w/w) >=5: Skin Irrit. 2 - H315 % (w/w) >=5: Eye Irrit. 2 - H319 % (w/w) >=0,1: Resp. Sens. 1 - H334 % (w/w) >=5: STOT SE 3 - H335

Acute toxicity estimate for the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or as determined in accordance with Annex I to that Regulation:

Identification	Acute toxicity		Genus
triethyl phosphate CAS: 78-40-0	LD50 oral	500 mg/kg (ATEi)	
	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	
4,4'-methylenediphenyl diisocyanate, isomers and homologues CAS: 9016-87-9	LD50 oral	Non-applicable	
	LD50 dermal	Non-applicable	
	LC50 inhalation	11 mg/L (ATEi)	

4. FIRST AID MEASURES

4.1. Description of first aid measures

General information

In all cases of doubt, or if symptoms persist, seek medical attention and show this SDS. Never give anything by mouth to an unconscious person.

Inhalation:

Remove the person affected from the area of exposure, provide with fresh air and keep at rest. In serious cases such as cardiorespiratory failure, artificial resuscitation techniques will be necessary (mouth to mouth resuscitation, cardiac massage, oxygen supply, etc.) requiring immediate medical assistance.

Ingestion:

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

Skin contact:

Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

Eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, in which case this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

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

Acute and delayed effects are indicated in sections 2 and 11.

Notes for the doctor

Not applicable.

Specific treatments

Treat symptomatically.

5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

If possible use polyvalent powder fire extinguishers (ABC powder), alternatively use foam or carbon dioxide extinguishers (CO₂).

Unsuitable extinguishing media

IT IS RECOMMENDED NOT to use full jet water as an extinguishing agent.

5.2. Special hazards arising from the substance or mixture

Specific hazards

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3. Advice for firefighters

Depending on the magnitude of the fire it may be necessary to use full protective clothing and self contained breathing apparatus (SCBA). Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit). Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Eliminate all sources of ignition. In case of fire, cool the storage containers and tanks for products susceptible to combustion, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

Special protective equipment for firefighters

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves).

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders:

Wear protective equipment. Keep unprotected persons away. See section 8.

6.2. Environmental precautions

It is recommended to avoid environmental spillage of both the product and its container.

Methods and material for containment and cleaning up

It is recommended: Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling**Usage precautions**

A.- General precautions for safe use:

Comply with the current legislation concerning the prevention of industrial risks with regards manually handling weights. Maintain order, cleanliness and dispose of using safe methods (section 6).

B.- Technical recommendations for the prevention of fires and explosions:

Product is non-flammable under normal conditions of storage, handling and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations on general occupational hygiene:

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks:

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3).

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash their hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

7.2. Conditions for safe storage, including any incompatibilities**Storage precautions**

Store in a cool, dry, well-ventilated location. Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5.

Storage class

Not classified.

7.3. Specific end use(s)

Field of application of the product is described in Technical data sheet (TDS).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Substances whose occupational exposure limits have to be monitored in the workplace:
EH40/2005 Workplace exposure limits, fourth edition, published 2020:

Identification	Occupational exposure Limits		
	WEL (8h)	400 ppm	766 mg/m ³
Dimethyl ether CAS: 115-10-6	WEL (15 min)	500 ppm	958 mg/m ³

BIOLOGICAL MONITORING GUIDANCE VALUES (BMGVs) - EH40/2005 - Isocyanates (applies to HDI, IPDI, TDI and MDI): 1µmol isocyanate-derived diamine/mol creatinine in urine. Sampling Time: At the end of the period of exposure.

DNEL (Workers)

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
4,4'-methylenediphenyl diisocyanate, isomers and homologues CAS: 9016-87-9 EC: 618-498-9	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Inhalation	Non-applicable	0.1 mg/m ³	Non-applicable	0.05 mg/m ³
Reaction products of phosphoryl trichloride and 2-methyloxirane CAS: 1244733-77-4 EC: 807-935-0	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	2.91 mg/kg	Non-applicable
	Inhalation	Non-applicable	Non-applicable	8.2 mg/m ³	Non-applicable
Polymer with 2-Butyne-1,4-Diol and (Chloromethyl-) Oxirane, Brominated, Dehydrochlorinated, Methoxylated CAS: 86675-46-9 EC: Non-applicable	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	0.87 mg/kg	Non-applicable
	Inhalation	Non-applicable	Non-applicable	6 mg/m ³	Non-applicable
1,1-difluoroethane CAS: 75-37-6 EC: 200-866-1	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Inhalation	Non-applicable	Non-applicable	2713 mg/m ³	Non-applicable
Dimethyl ether CAS: 115-10-6 EC: 204-065-8	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Inhalation	Non-applicable	Non-applicable	1894 mg/m ³	Non-applicable
triethyl phosphate CAS: 78-40-0 EC: 201-114-5	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	2 mg/kg	Non-applicable
	Inhalation	Non-applicable	Non-applicable	9.9 mg/m ³	Non-applicable

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DNEL (General population)

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
4,4'-methylenediphenyl diisocyanate, isomers and homologues CAS: 9016-87-9 EC: 618-498-9	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Inhalation	Non-applicable	0.05 mg/m ³	Non-applicable	0.025 mg/m ³
Reaction products of phosphoryl trichloride and 2- methyloxirane CAS: 1244733-77-4 EC: 807-935-0	Oral	2 mg/kg	Non-applicable	0.52 mg/kg	Non-applicable
	Dermal	Non-applicable	Non-applicable	1.04 mg/kg	Non-applicable
	Inhalation	Non-applicable	Non-applicable	1.45 mg/m ³	Non-applicable
Polymer with 2-Butyne-1,4-Diol and (Chloromethyl-) Oxirane, Brominated, Dehydrochlorinated, Methoxylated CAS: 86675-46-9 EC: Non-applicable	Oral	Non-applicable	Non-applicable	0.44 mg/kg	Non-applicable
	Dermal	1.3 mg/kg	Non-applicable	0.44 mg/kg	Non-applicable
	Inhalation	4.5 mg/m ³	Non-applicable	1.5 mg/m ³	Non-applicable
1,1-difluoroethane CAS: 75-37-6 EC: 200-866-1	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Inhalation	Non-applicable	Non-applicable	675 mg/m ³	Non-applicable
Dimethyl ether CAS: 115-10-6 EC: 204-065-8	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Inhalation	Non-applicable	Non-applicable	471 mg/m ³	Non-applicable
triethyl phosphate CAS: 78-40-0 EC: 201-114-5	Oral	5 mg/kg	Non-applicable	1 mg/kg	Non-applicable
	Dermal	Non-applicable	Non-applicable	1 mg/kg	Non-applicable
	Inhalation	Non-applicable	Non-applicable	1.74 mg/m ³	Non-applicable

Predicted No Effect Concentration

Identification				
4,4'-methylenediphenyl diisocyanate, isomers and homologues CAS: 9016-87-9 EC: 618-498-9	STP	1 mg/L	Fresh water	1 mg/L
	Soil	1 mg/kg	Marine water	0.1 mg/L
	Intermittent	10 mg/L	Sediment (Fresh water)	Non-applicable
	Oral	Non-applicable	Sediment (Marine water)	Non-applicable
Reaction products of phosphoryl trichloride and 2- methyloxirane CAS: 1244733-77-4 EC: 807-935-0	STP	19.1 mg/L	Fresh water	0.32 mg/L
	Soil	0.34 mg/kg	Marine water	0.032 mg/L
	Intermittent	0.51 mg/L	Sediment (Fresh water)	11.5 mg/kg
	Oral	0.0116 g/kg	Sediment (Marine water)	1.15 mg/kg
Polymer with 2-Butyne-1,4-Diol and (Chloromethyl-) Oxirane, Brominated, Dehydrochlorinated, Methoxylated CAS: 86675-46-9 EC: Non-applicable	STP	1 mg/L	Fresh water	1 mg/L
	Soil	6.92 mg/kg	Marine water	0.1 mg/L
	Intermittent	10 mg/L	Sediment (Fresh water)	37.5 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	3.75 mg/kg
1,1-difluoroethane CAS: 75-37-6 EC: 200-866-1	STP	Non-applicable	Fresh water	0.048 mg/L
	Soil	0.141 mg/kg	Marine water	0.005 mg/L
	Intermittent	0.48 mg/L	Sediment (Fresh water)	0.19 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	0.019 mg/kg
Dimethyl ether CAS: 115-10-6 EC: 204-065-8	STP	160 mg/L	Fresh water	0.155 mg/L
	Soil	0.045 mg/kg	Marine water	0.016 mg/L
	Intermittent	1.549 mg/L	Sediment (Fresh water)	0.681 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	0.069 mg/kg
triethyl phosphate CAS: 78-40-0 EC: 201-114-5	STP	298.5 mg/L	Fresh water	0.632 mg/L
	Soil	0.64 mg/kg	Marine water	0.063 mg/L
	Intermittent	9 mg/L	Sediment (Fresh water)	5 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	0.5 mg/kg

8.2. Exposure controls

Appropriate engineering controls

Appropriate ventilation, emergency shower and eyewash station recommended.

Eye/face protection

Face shield. Use if there is a risk of splashing.

Hand protection

NON-disposable chemical protective gloves. The Breakthrough Time indicated by the manufacturer must exceed the period during which the product is being used. Do not use protective creams after the product has come into contact with skin.

Other skin and body protection

Work clothing - Disposable clothing for protection against chemical risks, with antistatic and fireproof properties.

Anti-slip work shoes - Safety footwear for protection against chemical risk, with antistatic and heat resistant properties.

Respiratory protection

Filter mask for gases, vapours and particles are mandatory.

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Environmental exposure controls

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

The Volatile Organic Compounds in Paints, Varnishes and Vehicle Refinishing Products Regulations 2012:

V.O.C. (Supply):	17.96 % weight
V.O.C. density at 20 °C:	197.78 kg/m ³ (197.78 g/L).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Aerosol
Colour	Pink
Odour	Not available
Odour threshold	Not available
pH	Not available
Melting point	Not applicable
Initial boiling point and range	-12 °C
Flash point	No information available
Evaporation rate	No information available
Evaporation factor	No information available
Flammability (solid, gas)	No information available
Upper/lower flammability or explosive limits	No information available
Vapour pressure at 20 °C	No information available
Vapour pressure at 50 °C	<300000 (300 kPa)
Vapour density	No information available
Density at 20°C	1101 kg/m ³
Relative density	No information available
Bulk density	No information available
Solubility(ies)	No information available
Partition coefficient	No information available
Auto-ignition temperature	460 °C
Decomposition Temperature	No information available
Viscosity	No information available
Explosive properties	Not applicable
Oxidising properties	Not applicable
VOC	Not applicable
LEED (2009) VOC	Not applicable

Premier Sealant Systems Ltd.

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Mercia Way, Foxhills Industrial Park, Scunthorpe, DN15 8RE

Registered Office: Mercia Way, Foxhills Industrial Park, Scunthorpe, DN15 8RE | Registered in Cardiff No. 3000843

9.2. Other information

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

10.1. Reactivity

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

10.2. Chemical stability

Chemically stable under the indicated conditions of storage, handling and use.

10.3. Possibility of hazardous reactions

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4. Conditions to avoid

Risk of combustion and direct sunlight.

10.5. Incompatible materials

Avoid contact with strong acids, oxidising materials, alkalis and strong basis.

10.6. Hazardous decomposition products

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO₂), carbon monoxide and other organic compounds.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

The experimental information related to the toxicological properties of the product itself is not available. In case of exposure that is repetitive, prolonged or at concentrations higher than the recommended occupational exposure limits, adverse effects on health may result, depending on the means of exposure:

Acute toxicity (Acute oral toxicity)

Based on available data, the classification criteria are not met, however it does contain substances classified as hazardous for consumption. For more information see section 3.

Corrosivity/Irritability: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.

Acute toxicity (Acute dermal toxicity)

Produces skin inflammation.

Acute toxicity (Acute inhalation toxicity)

Based on available data, the classification criteria are not met, however it does contain substances classified as hazardous for inhalation. For more information see section 3. Corrosivity/Irritability: Causes irritation in respiratory passages, which is normally reversible and limited to the upper respiratory passages.

Skin Corrosion/Irritation

Produces skin inflammation.

Serious Eye Damage/Irritation

Produces eye damage after contact.

Respiratory or Skin Sensitisation

Respiratory: Prolonged exposure can result in specific respiratory hypersensitivity.
Skin: Prolonged contact with the skin can result in episodes of allergic contact dermatitis.

Germ Cell Mutagenicity

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

Carcinogenicity

Exposure to this product can cause cancer. For more specific information on the possible health effects see section 2. IARC: 4,4'-methylenediphenyl diisocyanate, isomers and homologues (3).

Reproductive Toxicity

Based on available data, the classification criteria are not met as it does not contain substances classified as hazardous for this effect. For more information see section 3.

Specific target organ toxicity (single exposure)

Causes irritation in respiratory passages, which is normally reversible and limited to the upper respiratory passages.

Specific target organ toxicity (repeated exposure)

Exposure in high concentration can interfere with the central nervous system causing headache, dizziness, vertigo, nausea, vomiting, confusion, and in serious cases, loss of consciousness.

Aspiration Hazard

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

11.2. Components influencing toxicology

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
Polymer with 2-Butyne-1,4-Diol and (Chloromethyl-)Oxirane, Brominated, Dehydrochlorinated, Methoxylated CAS: 86675-46-9	LD50 oral	917 mg/kg	Rat
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>20 mg/L	
Reaction products of phosphoryl trichloride and 2-methyloxirane CAS: 1244733-77-4	LD50 oral	632 mg/kg	Rat
	LD50 dermal	>2000 mg/kg	Rat
	LC50 inhalation	>20 mg/L	
triethyl phosphate CAS: 78-40-0	LD50 oral	500 mg/kg (ATEi)	
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>20 mg/L	
4,4'-methylenediphenyl diisocyanate, isomers and homologues CAS: 9016-87-9	LD50 oral	>5000 mg/kg	
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	11 mg/L (ATEi)	
Isobutane CAS: 75-28-5	LD50 oral	>5000 mg/kg	
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>5 mg/L	
Propane CAS: 74-98-6	LD50 oral	>5000 mg/kg	
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>5 mg/L	
Dimethyl ether CAS: 115-10-6	LD50 oral	>5000 mg/kg	
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	308.5 mg/L (4 h)	Rat
1,1-difluoroethane CAS: 75-37-6	LD50 oral	>5000 mg/kg	
	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>5 mg/L	

Acute Toxicity Estimate (ATE mix):

	ATE mix	Ingredient(s) of unknown toxicity
Oral	2506.84 mg/kg (Calculation method)	0%
Dermal	>5000 mg/kg (Calculation method)	Non-applicable
Inhalation	23.14 mg/L (4 h) (Calculation method)	0%

11.3. Information on other hazards

Not information available.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Acute toxicity:

Identification	Concentration		Species	Genus
Reaction products of phosphoryl trichloride and 2-methyloxirane CAS: 1244733-77-4	LC50	100 mg/L (96 h)	Danio rerio	Fish
	EC50	131 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	82 mg/L (72 h)	Pseudokirchneriella subcapitata	Algae

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Chronic toxicity:

Identification	Concentration		Species	Genus
	NOEC	Non-applicable		
Reaction products of phosphoryl trichloride and 2-methyloxirane CAS: 1244733-77-4	NOEC	32 mg/L	Daphnia magna	Crustacean

12.2. Persistence and degradability

Identification	Degradability		Biodegradability	
	BOD5	Non-applicable	Concentration	20 mg/L
Reaction products of phosphoryl trichloride and 2- methyloxirane CAS: 1244733-77-4	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	14 %

12.3. Bioaccumulative potential

Identification	Bioaccumulation potential	
	BCF	Pow Log
Reaction products of phosphoryl trichloride and 2-methyloxirane CAS: 1244733-77-4	BCF	8
	Pow Log	3.17
	Potential	Low
Isobutane CAS: 75-28-5	BCF	27
	Pow Log	2.76
	Potential	Low
Propane CAS: 74-98-6	BCF	13
	Pow Log	2.86
	Potential	Low

12.4. Mobility in soil

Identification	Absorption/desorption		Volatility	
	Koc	324.2	Henry	6E-3 Pa·m ³ /mol
Reaction products of phosphoryl trichloride and 2- methyloxirane CAS: 1244733-77-4	Conclusion	Moderate	Dry soil	Non-applicable
	Surface tension	Non-applicable	Moist soil	Non-applicable
	1,1-difluoroethane CAS: 75-37-6	Koc	Non-applicable	Henry
1,1-difluoroethane CAS: 75-37-6	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	1.003E-2 N/m (25 °C)	Moist soil	Non-applicable
	Isobutane CAS: 75-28-5	Koc	35	Henry
Isobutane CAS: 75-28-5	Conclusion	Very High	Dry soil	Yes
	Surface tension	9.84E-3 N/m (25 °C)	Moist soil	Yes
	Dimethyl ether CAS: 115-10-6	Koc	Non-applicable	Henry
Dimethyl ether CAS: 115-10-6	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	1.136E-2 N/m (25 °C)	Moist soil	Non-applicable
	triethyl phosphate CAS: 78-40-0	Koc	Non-applicable	Henry
triethyl phosphate CAS: 78-40-0	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	2.961E-2 N/m (25 °C)	Moist soil	Non-applicable
	Propane CAS: 74-98-6	Koc	460	Henry
Propane CAS: 74-98-6	Conclusion	Moderate	Dry soil	Yes
	Surface tension	7.02E-3 N/m (25 °C)	Moist soil	Yes

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12.1. Results of PBT and vPvB assessment

Product does not meet PBT/vPvB criteria.

12.2. Other adverse effects

Not described.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Code	Description	Waste class
16 05 04*	gases in pressure containers (including halons) containing hazardous substances	Dangerous

Consult the authorized waste service manager on the assessment and disposal operations in accordance The Waste (England & Wales) Regulations 2011, 2011 No. 988. As under 15 01 of the code and in case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-hazardous residue.

Waste should not be disposed of to drains. See paragraph 6.2.

In accordance with Annex II of UK REACH the provisions related to waste management are stated: UK legislation: The Waste Regulations 2011.

Disposal methods

Dispose of in accordance with local regulations.

13.2. Waste class

HP3 Flammable, HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity, HP6 Acute Toxicity, HP7 Carcinogenic, HP13 Sensitising, HP4 Irritant – skin irritation and eye damage.

14. TRANSPORT INFORMATION

14.1. Classification for ROAD and Rail transport (ADR/RID)

UN number:	UN1950
UN proper shipping name:	AEROSOLS
Transport hazard class(es):	2
Labels:	2.1
Packing group:	N/A
Environmental hazards:	No
Special precautions for user	
Tunnel restriction code:	D
Physico-Chemical properties: see section	9
Limited quantities:	1 L
Transport in bulk according to Annex II of Marpol and the IBC Code:	Non- applicable



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14.2. Transport by sea GGVSee/IMDG-Code

UN number:	UN1950
UN proper shipping name:	AEROSOLS
Transport hazard class(es):	2
Labels:	2.1
Packing group:	N/A
Marine pollutant:	No
Special precautions for user	
Special regulations:	63, 959, 190, 277, 327, 344
EmS Codes:	F-D, S-U
Physico-Chemical properties: see section	9
Limited quantities:	1 L
Segregation group:	Non-applicable
Transport in bulk according to Annex II of Marpol and the IBC Code:	Non-applicable



14.3. Air Transport ICAO-TI/IATA-DGR

UN number:	UN1950
UN proper shipping name:	AEROSOLS
Transport hazard class(es):	2
Labels:	2.1
Packing group:	N/A
Environmental hazards:	No
Special precautions for user	
Physico-Chemical properties: see section	9
Transport in bulk according to Annex II of Marpol and the IBC Code:	Non-applicable



15. REGULATORY INFORMATION

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

- Substances listed in UK candidate list of substances of very high concern (SVHCs): Not relevant
- Substances listed in UK REACH Authorisation List (Annex 14): Not relevant.

The Control of Major Accident Hazards Regulations 2015:

Section	Description	Lower-tier requirements	Upper-tier requirements
P3a	FLAMMABLE AEROSOLS	150	500

Restrictions to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII UK REACH, etc.):

- Contains more than 0.1 % of 4,4'-methylenediphenyl diisocyanate, isomers and homologues by weight.
1. Shall not be used as substances on their own, as a constituent in other substances or in mixtures for industrial and professional use(s) after 24 August 2023, unless:
 - (a) the concentration of diisocyanates individually and in combination is less than 0,1 % by weight,
 - or (b) the employer or selfemployed ensures that industrial or professional user(s) have successfully completed training on the safe use of diisocyanates prior to the use of the substance(s) or mixture(s).
 2. Shall not be placed on the market as substances on their own, as a constituent in other substances or in mixtures for industrial and professional use(s) after 24 February 2022, unless:
 - (a) the concentration of diisocyanates individually and in combination is less than 0,1 % by weight,
 - or (b) the supplier ensures that the recipient of the substance(s) or mixture(s) is provided with information on the requirements referred to in point (b) of paragraph 1 and the following statement is placed on the packaging, in a manner that is visibly distinct from the rest of the label information: "As from 24 August 2023 adequate training is required before industrial or professional use".
 3. For the purpose of this entry "industrial and professional user(s)" means any worker or self-employed worker handling diisocyanates on their own, as a constituent in other substances or in mixtures for industrial and professional use(s) or supervising these tasks.
 4. The training referred to in point (b) of paragraph 1 shall include the instructions for the control of dermal and inhalation exposure to diisocyanates at the workplace without prejudice to any national occupational exposure limit value or other appropriate risk management measures at national level. Such training shall be conducted by an expert on occupational safety and health with competence acquired by relevant vocational training. That training shall cover as a minimum:
 - (a) the training elements in point (a) of paragraph 5 for all industrial and professional use(s).
 - (b) the training elements in points (a) and (b) of paragraph 5 for the following uses:
 - handling open mixtures at ambient temperature (including foam tunnels)
 - spraying in a ventilated booth
 - application by roller
 - application by brush
 - application by dipping and pouring
 - mechanical post treatment (e.g. cutting) of not fully cured articles which are not warm anymore
 - cleaning and waste
 - any other uses with similar exposure through the dermal and/or inhalation route
 - (c) the training elements in points (a), (b) and (c) of paragraph 5 for the following uses:
 - handling incompletely cured articles (e.g. freshly cured, still warm)
 - foundry applications
 - maintenance and repair that needs access to equipment
 - open handling of warm or hot formulations (> 45 °C)
 - spraying in open air, with limited or only natural ventilation (includes large industry working halls) and spraying with high energy (e.g. foams, elastomers)
 - and any other uses with similar exposure through the dermal and/or inhalation route.
 5. Training elements:
 - (a) general training, including on-line training, on:
 - chemistry of diisocyanates
 - toxicity hazards (including acute toxicity)
 - exposure to diisocyanates
 - occupational exposure limit values
 - how sensitisation can develop
 - odour as indication of hazard

- importance of volatility for risk
 - viscosity, temperature, and molecular weight of diisocyanates
 - personal hygiene
 - personal protective equipment needed, including practical instructions for its correct use and its limitations
 - risk of dermal contact and inhalation exposure
 - risk in relation to application process used
 - skin and inhalation protection scheme
 - ventilation
 - cleaning, leakages, maintenance
 - discarding empty packaging
 - protection of bystanders
 - identification of critical handling stages
 - specific national code systems (if applicable)
 - behaviour-based safety
 - certification or documented proof that training has been successfully completed (b) intermediate level training, including on-line training, on:
 - additional behaviour-based aspects
 - maintenance
 - management of change
 - evaluation of existing safety instructions
 - risk in relation to application process used.
 - certification or documented proof that training has been successfully completed (c) advanced training, including on-line training, on:
 - any additional certification needed for the specific uses covered
 - spraying outside a spraying booth
 - open handling of hot or warm formulations (> 45 °C)
 - certification or documented proof that training has been successfully completed
6. The training shall comply with the provisions set by the Member State in which the industrial or professional user(s) operate. Member States may implement or continue to apply their own national requirements for the use of the substance(s) or mixture(s), as long as the minimum requirements set out in paragraphs 4 and 5 are met.
7. The supplier referred to in point (b) of paragraph 2 shall ensure that the recipient is provided with training material and courses pursuant to paragraphs 4 and 5 in the official language(s) of the Member State(s) where the substance(s) or mixture(s) are supplied. The training shall take into consideration the specificity of the products supplied, including composition, packaging, and design.
8. The employer or self-employed shall document the successful completion of the training referred to in paragraphs 4 and 5. The training shall be renewed at least every five years.
9. Member States shall include in their reports pursuant to Article 117(1) the following information:
- (a) any established training requirements and other risk management measures related to the industrial and professional uses of diisocyanates foreseen in national law
 - (b) the number of cases of reported and recognised occupational asthma and occupational respiratory and dermal diseases in relation to diisocyanates
 - (c) national exposure limits for diisocyanates, if there are any
 - (d) information about enforcement activities related to this restriction.
10. This restriction shall apply without prejudice to other Union legislation on the protection of safety and health of workers at the workplace.
- Shall not be used in:

–ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
–tricks and jokes,
–games for one or more participants, or any article intended to be used as such, even with ornamental aspects. Contains Octamethylcyclotetrasiloxane. 1. | Shall not be placed on the market in wash-off cosmetic products in a concentration equal to or greater than 0,1 % by weight of either substance, after 31 January 2020. | 2. | For the purposes of this entry, “wash-off cosmetic products” means cosmetic products as defined in Article 2(1)(a) of Regulation (EC) No 1223/2009 that, under normal conditions of use, are washed off with water after application.’ Contains more than 0.1 % of 4,4'-methylenediphenyl diisocyanate, isomers and homologues by weight. This product may not be distributed in its present form for first-time sale to the general public after 27th December 2010 unless the packaging contains protective gloves meeting the provisions of Regulation (EU) 2016/425.

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as a basis for conducting workplace-specific risk assessments in order to establish the necessary risk prevention measures for the handling, use, storage and disposal of this product.

Other legislation

The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020.

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2020.

Control of Substances Hazardous to Health Regulations 2002 (as amended)
EH40/2005 Workplace exposure limits.

The Aerosol Dispensers Regulations 2009

The Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019: SCHEDULE 13 - Amendment of the Aerosol

Dispensers Regulations 2009

The Product Safety and Metrology etc. (Amendment etc.) (UK(NI) Indication) (EU Exit) Regulations 2020.

15.2. Chemical safety assessment

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

16. OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with ANNEX II-The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020.

Texts of the legislative phrases mentioned in section 2:

H319: Causes serious eye irritation.

H315: Causes skin irritation.

H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317: May cause an allergic skin reaction.

H351: Suspected of causing cancer.

H335: May cause respiratory irritation.

H373: May cause damage to organs through prolonged or repeated exposure.

H229: Pressurised container: May burst if heated.

H222: Extremely flammable aerosol.

Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

GB CLP Regulation:

Acute Tox. 4: H302 - Harmful if swallowed.

Acute Tox. 4: H332 - Harmful if inhaled.

Aquatic Chronic 3: H412 - Harmful to aquatic life with long lasting effects.

Carc. 2: H351 - Suspected of causing cancer.

Eye Irrit. 2: H319 - Causes serious eye irritation.

Flam. Gas 1A: H220 - Extremely flammable gas.

Press. Gas: H280 - Contains gas under pressure, may explode if heated.

Resp. Sens. 1: H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin Irrit. 2: H315 - Causes skin irritation.

Skin Sens. 1: H317 - May cause an allergic skin reaction.

STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure.

STOT SE 3: H335 - May cause respiratory irritation.

Classification procedure:

Eye Irrit. 2: Calculation method

Skin Irrit. 2: Calculation method

Resp. Sens. 1: Calculation method

Skin Sens. 1: Calculation method

Carc. 2: Calculation method

STOT SE 3: Calculation method

STOT RE 2: Calculation method

Aerosol 1: Calculation method

Aerosol 1: Calculation method.

Advice related to training:

Training is recommended in order to prevent industrial risks for staff using this product and to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Abbreviations and acronyms used in the safety data sheet

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

ATE: Acute Toxicity Estimate.

BCF: Bioconcentration Factor.

CAS: Chemical Abstracts Service.

cATpE: Converted acute toxicity point estimate.

DNEL: Derived No Effect Level.

EC₅₀: 50% of maximal Effective Concentration.

GHS: Globally Harmonized System.

IATA: International Air Transport Association.

IBC: International Code for the Construction and Equipment of Ships carrying Dangerous

Chemicals in Bulk (International Bulk Chemical Code).
ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.
IMDG: International Maritime Dangerous Goods.
LC50: Lethal Concentration to 50 % of a test population.
LD50: Lethal Dose to 50% of a test population (Median Lethal Dose).
LOAEC: Lowest Observed Adverse Effect Concentration.
LOAEL: Lowest Observed Adverse Effect Level.
LOEC: Lowest Observed Effect Concentration.
MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
NOEC: No Observed Effect Concentration.
PBT: Persistent, Bioaccumulative and Toxic substance.
PNEC: Predicted No Effect Concentration.
REACH: The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020 No. 1577.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
SVHC: Substances of Very High Concern.
vPvB: Very Persistent and Very Bioaccumulative.

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
Aquatic Chronic = Hazardous to the aquatic environment (chronic)
Asp. Tox. = Aspiration hazard
Eye Dam. = Serious eye damage
Flam. Liq. = Flammable liquid
Repr. = Reproductive toxicity
Skin Irrit. = Skin irritation
Skin Sens. = Skin sensitisation
STOT RE = Specific target organ toxicity-repeated exposure
STOT SE = Specific target organ toxicity-single exposure

Key literature references and sources for data

Source: European Chemicals Agency, <http://echa.europa.eu/> SDS from supplier.

Revision comments

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