

Safety data sheet
According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

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

- 1.1 Product identifier:** Fire Rated Foam B1 296
- Other means of identification:**
Not relevant
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
Relevant uses (Consumer use): Construction foam
Relevant uses (Professional users): Construction foam
Uses advised against: All uses not specified in this section or in section 7.3
- 1.3 Details of the supplier of the safety data sheet:**
Wolf Group OÜ
Suur-Paala 10
13619 Tallinn - Estonia
Phone: +372 605 9300 - Fax: +372 605 9315
sds@wolf-group.com
www.wolf-group.com
- 1.4 Emergency telephone number:** 999; 111; 844 892 0111

SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture:**
GB CLP Regulation (UK S.I. 2019/720 and UK S.I. 2020/1567):
Classification of this product has been carried out in accordance with GB CLP Regulation (UK S.I. 2019/720 and UK S.I. 2020/1567).
Acute Tox. 4: Acute inhalation toxicity, Category 4, H332
Aerosol 1: Flammable aerosols, Category 1, H222
Aerosol 1: Pressurised container: May burst if heated., H229
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:**

GB CLP Regulation (UK S.I. 2019/720 and UK S.I. 2020/1567):

Danger



Hazard statements:

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

Precautionary statements:

- CONTINUED ON NEXT PAGE -

Safety data sheet

According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 2: HAZARDS IDENTIFICATION (continued)

P101: If medical advice is needed, have product container or label at hand.
 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.
 P271: Use only outdoors or in a well-ventilated area.
 P280: Wear protective gloves/protective clothing/respiratory protection/eye protection/protective footwear.
 P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
 P410+P412: Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122°F.
 P501: Dispose of the contents and/or its container using the separate collection system in your municipality.

Supplementary information:

EUH204: Contains isocyanates. May produce an allergic reaction.

Substances that contribute to the classification

4,4'-methylenediphenyl diisocyanate, isomers and homologues; Reaction products of phosphoryl trichloride and 2-methyloxirane

Additional Labelling:

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

2.3 Other hazards:

Product does not meet PBT/vPvB criteria

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance:

Not relevant

3.2 Mixture:

Chemical description: Mixture composed of organic substances

Components:

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 EC: 618-498-9 REACH: NULL	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 EC: 807-935-0 REACH: 01-2119486772-26-XXXX	Reaction products of phosphoryl trichloride and 2-methyloxirane Acute Tox. 4: H302; Aquatic Chronic 3: H412; Carc. 2: H351 - Warning	10 - <20 %
CAS: 75-28-5 EC: 200-857-2 REACH: 01-2119485395-27-XXXX	Isobutane Flam. Gas 1A: H220; Press. Gas (Liq.): H280 - Danger	2,5 - <10 %
CAS: 115-10-6 EC: 204-065-8 REACH: 01-2119472128-37-XXXX	Dimethyl ether Flam. Gas 1A: H220; Press. Gas: H280 - Danger	2,5 - <10 %
CAS: 74-98-6 EC: 200-827-9 REACH: 01-2119486944-21-XXXX	Propane Flam. Gas 1A: H220; Press. Gas: H280 - Danger	2,5 - <10 %

- CONTINUED ON NEXT PAGE -

Safety data sheet

According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

Identification	Chemical name/Classification	Concentration
78-40-0 CAS: 201-114-5 EC: 01- REACH: 2119492852-28-XXXX	triethyl phosphate Acute Tox. 4: H302; Eye Irrit. 2: H319 - Warning	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
4,4'-methylenediphenyl diisocyanate, isomers and homologues CAS: 9016-87-9 EC: 618-498-9	LD50 oral	Not relevant	
	LD50 dermal	Not relevant	
	LC50 inhalation mist	1.5 mg/L	
triethyl phosphate CAS: 78-40-0 EC: 201-114-5	LD50 oral	500 mg/kg	
	LD50 dermal	Not relevant	
	LC50 inhalation mist	Not relevant	
Reaction products of phosphoryl trichloride and 2-methyloxirane CAS: 1244733-77-4 EC: 807-935-0	LD50 oral	632 mg/kg	Rat
	LD50 dermal	Not relevant	
	LC50 inhalation mist	Not relevant	

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By 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.

By 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.

By 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.

By ingestion/aspiration:

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.

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

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.

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

Not relevant

SECTION 5: FIREFIGHTING MEASURES

- CONTINUED ON NEXT PAGE -

Safety data sheet
According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 5: FIREFIGHTING MEASURES (continued)

5.1 Extinguishing media:

Suitable extinguishing media:

Foam extinguisher (AB), Dry Chemical Powder (ABC) Fire Extinguisher, Carbon dioxide extinguisher (BC)

Unsuitable extinguishing media:

Water jet

5.2 Special hazards arising from the substance or mixture:

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. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

Additional provisions:

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.

SECTION 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.

6.3 Methods and material for containment and cleaning up:

It is recommended:

Prevent the entrance of product in drains, sewers or watercourses. Absorb the spill using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. Collect the product in appropriate containers and manage it according to current legislation.

Spillages in water or sea:

Small spillages:

Contain spillage using barriers or similar equipment. Use suitable absorbents for collection and treat the waste in accordance with current regulations.

Large spillages:

If possible, contain spillage in open water using barriers or similar equipment. If this is not possible, try to control its spread and collect the product with suitable mechanical means. Always consult experts before using dispersants and make sure you have the necessary approvals if they are to be used. Treat the waste according to current regulations.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- General precautions for safe use

Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

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

- CONTINUED ON NEXT PAGE -

Safety data sheet

According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 7: HANDLING AND STORAGE (continued)

Keep away from sources of ignition, heat, open flame, or hot surfaces. No smoking. Close the valve after each use and when it has been emptied. Replace all valve protections as soon as the container has been disconnected from the equipment. Use appropriate means to move bottles: do not drag them, roll them, make them fall, etc. Avoid back-suction of water into the container. Avoid feedback into the container. Purge air from the system before introducing the gas. Use only equipment with the appropriate specifications, which are suitable for this product, as well as its supply temperature and pressure. In case of doubt, contact your gas supplier. Ensure adequate ventilation. Use the necessary personal protective equipment. Ensure the existence and implementation of safe work procedures and comply with the safe handling procedures for chemicals. Comply with the essential security requirements for equipment and systems and with the minimum requirements for protecting the security and health of workers. Consult section 10 for 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)

7.2 Conditions for safe storage, including any incompatibilities:

A.- Specific storage requirements

Minimum Temp.: 5 °C

Maximum Temp.: 30 °C

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be assessed in the workplace:

EH40/2005 Workplace exposure limits, fourth edition, published 2020:

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

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	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	Not relevant	Not relevant
	Inhalation	Not relevant	0.1 mg/m ³	Not relevant	0.05 mg/m ³
Reaction products of phosphoryl trichloride and 2-methyloxirane CAS: 1244733-77-4 EC: 807-935-0	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	2.91 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	8.2 mg/m ³	Not relevant
Dimethyl ether CAS: 115-10-6 EC: 204-065-8	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	Not relevant	Not relevant
	Inhalation	Not relevant	Not relevant	1894 mg/m ³	Not relevant
triethyl phosphate CAS: 78-40-0 EC: 201-114-5	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	2 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	9.9 mg/m ³	Not relevant

DNEL (General population):

- CONTINUED ON NEXT PAGE -

Safety data sheet

According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

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	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	Not relevant	Not relevant
	Inhalation	Not relevant	0.05 mg/m ³	Not relevant	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	Not relevant	0.52 mg/kg	Not relevant
	Dermal	Not relevant	Not relevant	1.04 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	1.45 mg/m ³	Not relevant
Dimethyl ether CAS: 115-10-6 EC: 204-065-8	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	Not relevant	Not relevant
	Inhalation	Not relevant	Not relevant	471 mg/m ³	Not relevant
triethyl phosphate CAS: 78-40-0 EC: 201-114-5	Oral	5 mg/kg	Not relevant	1 mg/kg	Not relevant
	Dermal	Not relevant	Not relevant	1 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	1.74 mg/m ³	Not relevant

PNEC:

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)	Not relevant	
	Oral	Not relevant	Sediment (Marine water)	Not relevant	
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	
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	Not relevant	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	Not relevant	Sediment (Marine water)	0.5 mg/kg	

8.2 Exposure controls:

A.- Individual protection measures, such as personal protective equipment

In accordance with the order of importance to control professional exposure it is recommended to use localized extraction in the work area as a collective protection measure to avoid exceeding the occupational exposure limits. In case of using personal protective equipment it should have <<UKCA marking>> or <<CE marking>>. For more information on Personal Protective Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For additional information see subsection 7.1. All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

B.- Respiratory protection

Pictogram	PPE	Remarks
	Filter mask for gases, vapours and particles	Replace when an increase in resistance to breathing is observed and/or a smell or taste of the contaminant is detected.

C.- Specific protection for the hands

- CONTINUED ON NEXT PAGE -

Safety data sheet
According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Pictogram	PPE	Remarks
 Mandatory hand protection	Chemical protective gloves (Material: Nitrile, Breakthrough time: > 480 min, Thickness: 0.35 mm, Conditions of use: Normal)	Replace the gloves at any sign of deterioration.

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.- Eye and face protection

Pictogram	PPE	Remarks
 Mandatory face protection	Panoramic glasses against splash/projections.	Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing.

E.- Body protection

Pictogram	PPE	Remarks
	Work clothing	Replace before any evidence of deterioration. For periods of prolonged exposure to the product for professional/industrial users CE III is recommended, in accordance with the regulations in EN ISO 6529:2013, EN ISO 6530:2005, EN ISO 13688:2013, EN 464:1994.
 Mandatory foot protection	Safety footwear for protection against chemical risk	Replace boots at any sign of deterioration.

F.- Additional emergency measures

It is advised to implement additional emergency equipments in workplaces that are particularly exposed to the product or in situations where risk assessments highlight the necessity of such equipments.

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

To comply with environmental protection regulations, it is recommended to prevent any spillage of the product and its container. For more detailed information, please refer to subsection 7.1.D.

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

V.O.C. (Supply):	21.15 % weight
V.O.C. density at 20 °C:	222.76 kg/m ³ (222.76 g/L)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 20 °C:	Aerosol
Appearance:	Not relevant *
Colour:	 Red
Odour:	Not relevant *
Odour threshold:	Not relevant *

Volatility:

*Not relevant due to the nature of the product, not providing information property of its hazards.

- CONTINUED ON NEXT PAGE -

Safety data sheet
According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Boiling point at atmospheric pressure:	-42 °C (Propellant)
Vapour pressure at 20 °C:	Not relevant *
Vapour pressure at 50 °C:	<300000 Pa (300 kPa)
Evaporation rate at 20 °C:	Not relevant *

Product description:

Density at 20 °C:	1053 kg/m ³
Relative density at 20 °C:	Not relevant *
Dynamic viscosity at 20 °C:	Not relevant *
Kinematic viscosity at 20 °C:	Not relevant *
Kinematic viscosity at 40 °C:	Not relevant *
Concentration:	Not relevant *
pH:	Not relevant *
Vapour density at 20 °C:	Not relevant *
Partition coefficient n-octanol/water 20 °C:	Not relevant *
Solubility in water at 20 °C:	Not relevant *
Solubility properties:	Not relevant *
Decomposition temperature:	Not relevant *
Melting point/freezing point:	Not relevant *
Recipient pressure:	Not relevant *

Flammability:

Flash Point:	Not relevant *
Flammability (solid, gas):	Not relevant *
Autoignition temperature:	410 °C (Propellant)
Lower flammability limit:	Not relevant *
Upper flammability limit:	Not relevant *

Particle characteristics:

Median equivalent diameter:	Not relevant *
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9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties:	Not relevant *
Oxidising properties:	Not relevant *
Corrosive to metals:	Not relevant *
Heat of combustion:	Not relevant *
Aerosols-total percentage (by mass) of flammable components:	Not relevant *

Other safety characteristics:

Surface tension at 20 °C:	Not relevant *
Refraction index:	Not relevant *

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

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

10.2 Chemical stability:

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

- CONTINUED ON NEXT PAGE -

Safety data sheet

According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 10: STABILITY AND REACTIVITY (continued)

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:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Precaution	Precaution	Risk of combustion	Avoid direct impact	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Avoid direct impact	Not applicable	Avoid alkalis or strong bases

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.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

The experimental information related to the toxicological properties of the product itself is not available

Contains glycols. It is recommended not to breathe the vapours for prolonged periods of time due to the possibility of effects that are hazardous to the health.

Dangerous health implications:

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:

A- Ingestion (acute effect):

- Acute toxicity: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous 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.

B- Inhalation (acute effect):

- Acute toxicity : 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.
- Corrosivity/Irritability: Causes irritation in respiratory passages, which is normally reversible and limited to the upper respiratory passages.

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Produces skin inflammation.
- Contact with the eyes: Produces eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- 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)
- 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.
- 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.

E- Sensitizing effects:

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

F- Specific target organ toxicity (STOT) - single exposure:

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

G- Specific target organ toxicity (STOT)-repeated exposure:

- CONTINUED ON NEXT PAGE -

Safety data sheet
According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 11: TOXICOLOGICAL INFORMATION (continued)

- Specific target organ toxicity (STOT)-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.

- Skin: 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.

H- 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.

Other information:

Not relevant

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
4,4'-methylenediphenyl diisocyanate, isomers and homologues CAS: 9016-87-9 EC: 618-498-9	LD50 oral	>2000 mg/kg	
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation vapour	11 mg/L	
Isobutane CAS: 75-28-5 EC: 200-857-2	LD50 oral	>2000 mg/kg	
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation gases	>20000 mg/L	
Propane CAS: 74-98-6 EC: 200-827-9	LD50 oral	>2000 mg/kg	
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation gases	>20000 mg/L	
Dimethyl ether CAS: 115-10-6 EC: 204-065-8	LD50 oral	>2000 mg/kg	
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation gases	164000 ppm (4 h)	Rat
triethyl phosphate CAS: 78-40-0 EC: 201-114-5	LD50 oral	500 mg/kg	
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation vapour	>20 mg/L	
Reaction products of phosphoryl trichloride and 2-methyloxirane CAS: 1244733-77-4 EC: 807-935-0	LD50 oral	632 mg/kg	Rat
	LD50 dermal	>2000 mg/kg	Rat
	LC50 inhalation mist	>7 mg/L (4 h)	Rat

Acute Toxicity Estimate (ATE mix):

ATE mix		Ingredient(s) of unknown toxicity
Oral	3290.17 mg/kg (Calculation method)	0 %
Dermal	>2000 mg/kg (Calculation method)	0 %
LC50 inhalation mist	3.41 mg/L (4 h) (Calculation method)	0 %

Only the physical form mist can occur during any reasonably expected use of the product, including when the product is used to produce a new product.

SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available

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

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

Chronic toxicity:

- CONTINUED ON NEXT PAGE -

Safety data sheet
According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 12: ECOLOGICAL INFORMATION (continued)

Identification	Concentration		Species	Genus
Reaction products of phosphoryl trichloride and 2-methyloxirane CAS: 1244733-77-4	NOEC	Not relevant		
	NOEC	32 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Substance-specific information:

Identification	Degradability		Biodegradability	
Reaction products of phosphoryl trichloride and 2-methyloxirane CAS: 1244733-77-4 EC: 807-935-0	BOD5	Not relevant	Concentration	20 mg/L
	COD	Not relevant	Period	28 days
	BOD5/COD	Not relevant	% Biodegradable	14 %

12.3 Bioaccumulative potential:

Substance-specific information:

Identification	Bioaccumulation potential	
Reaction products of phosphoryl trichloride and 2-methyloxirane CAS: 1244733-77-4 EC: 807-935-0	BCF	8
	Pow Log	3.17
	Potential	Low
Isobutane CAS: 75-28-5 EC: 200-857-2	BCF	27
	Pow Log	2.76
	Potential	Low
Propane CAS: 74-98-6 EC: 200-827-9	BCF	13
	Pow Log	2.86
	Potential	Low

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
Reaction products of phosphoryl trichloride and 2-methyloxirane CAS: 1244733-77-4	Koc	324.2	Henry	6E-3 Pa·m³/mol
	Conclusion	Moderate	Dry soil	Not relevant
	Surface tension	Not relevant	Moist soil	Not relevant
Isobutane CAS: 75-28-5	Koc	35	Henry	120576.75 Pa·m³/mol
	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	Not relevant	Henry	Not relevant
	Conclusion	Not relevant	Dry soil	Not relevant
	Surface tension	1.136E-2 N/m (25 °C)	Moist soil	Not relevant
Propane CAS: 74-98-6	Koc	460	Henry	71636.78 Pa·m³/mol
	Conclusion	Moderate	Dry soil	Yes
	Surface tension	7.02E-3 N/m (25 °C)	Moist soil	Yes
triethyl phosphate CAS: 78-40-0	Koc	Not relevant	Henry	Not relevant
	Conclusion	Not relevant	Dry soil	Not relevant
	Surface tension	2.961E-2 N/m (25 °C)	Moist soil	Not relevant

12.5 Results of PBT and vPvB assessment:

Product does not meet PBT/vPvB criteria

12.6 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

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

Type of waste:

- CONTINUED ON NEXT PAGE -

Safety data sheet
According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 13: DISPOSAL CONSIDERATIONS (continued)

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

Waste management (disposal and evaluation):

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.

Regulations related to waste management:

In accordance with Annex II of UK REACH the provisions related to waste management are stated:

UK legislation: The Waste (England & Wales) Regulations 2011.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land:

With regard to ADR 2025 and RID 2025:



- | | |
|---|---------------|
| 14.1 UN number: | UN1950 |
| 14.2 UN proper shipping name: | AEROSOLS |
| 14.3 Transport hazard class(es): | 2 |
| Labels: | 2.1 |
| 14.4 Packing group: | N/A |
| 14.5 Environmental hazards: | No |
| 14.6 Special precautions for user | |
| Tunnel restriction code: | D |
| Physico-Chemical properties: | see section 9 |
| Limited quantities: | 1 L |
| 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code: | Not relevant |

Transport of dangerous goods by sea:

With regard to IMDG 41-22:



- | | |
|---|-----------------------------|
| 14.1 UN number: | UN1950 |
| 14.2 UN proper shipping name: | AEROSOLS |
| 14.3 Transport hazard class(es): | 2 |
| Labels: | 2.1 |
| 14.4 Packing group: | N/A |
| 14.5 Marine pollutant: | No |
| 14.6 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: | Not relevant |
| 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code: | Not relevant |

Transport of dangerous goods by air:

With regard to IATA/ICAO 2025:

- CONTINUED ON NEXT PAGE -

Safety data sheet
According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 14: TRANSPORT INFORMATION (continued)



- 14.1 UN number:** UN1950
14.2 UN proper shipping name: AEROSOLS
14.3 Transport hazard class(es): 2
Labels: 2.1
14.4 Packing group: N/A
14.5 Environmental hazards: No
14.6 Special precautions for user
 Physico-Chemical properties: see section 9
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code: Not relevant

SECTION 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): *Octamethylcyclotetrasiloxane (556-67-2)* ; *Dodecamethylcyclohexasiloxane (540-97-6)* ; *Decamethylcyclopentasiloxane (541-02-6)*
- 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):

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 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.

Contains more than 0.1 % of diisocyanates 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 self-employed 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

- CONTINUED ON NEXT PAGE -

Safety data sheet

According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 15: REGULATORY INFORMATION (continued)

- 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.

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)

- CONTINUED ON NEXT PAGE -

Safety data sheet

According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 15: REGULATORY INFORMATION (continued)

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

SECTION 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:

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.

H332: Harmful if inhaled.

H222: Extremely flammable aerosol.

H229: Pressurised container: May burst if heated.

H319: Causes serious eye irritation.

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 (UK S.I. 2019/720 and UK S.I. 2020/1567):

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 (Liq.): H280 - Contains gas under pressure, may explode if heated.

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:

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

Acute Tox. 4: Calculation method

Aerosol 1: Calculation method

Aerosol 1: Calculation method

Eye Irrit. 2: 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.

Principal bibliographical sources:<http://echa.europa.eu><http://eur-lex.europa.eu>**Abbreviations and acronyms:**

- CONTINUED ON NEXT PAGE -

Safety data sheet

According to UK REACH (S.I. 2019/758)

Fire Rated Foam B1 296

SECTION 16: OTHER INFORMATION (continued)

ADR: European agreement concerning the international carriage of dangerous goods by road
IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
LC50: Lethal Concentration 50
EC50: Effective concentration 50
LogPOW: Octanolwater partition coefficient
Koc: Partition coefficient of organic carbon
UFI: unique formula identifier
IARC: International Agency for Research on Cancer

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation at UK, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

- END OF SAFETY DATA SHEET -