

SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2015/830

Gun Grade Expanding Foam B3 UK

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

1.1. Product identifier

: Gun Grade Expanding Foam B3 UK Product name

Registration number REACH : Not applicable (mixture)

Product type REACH : Mixture

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

1.2.1 Relevant identified uses

polyurethane

1.2.2 Uses advised against

No uses advised against known

1.3. Details of the supplier of the safety data sheet

Supplier of the safety data sheet

SOUDAL N.V.

Everdongenlaan 18-20

B-2300 Turnhout

2 +32 14 42 42 31

4 +32 14 42 65 14

sds@soudal.com

Manufacturer of the product

SOUDAL N.V.

Everdongenlaan 18-20

B-2300 Turnhout

3 +32 14 42 42 31

₼ +32 14 42 65 14 sds@soudal.com

1.4. Emergency telephone number

24h/24h:

+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

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

2.2. Label elements







Contains: polymethylene polyphenyl isocyanate; alkanes, C14-17, chloro.

Danger

Signal word

H-statements H222

Extremely flammable aerosol.

H229

Pressurised container: May burst if heated.

H351

Suspected of causing cancer.

Created by: Brandweerinformatiecentrum voor gevaarlijke stoffen vzw (BIG)

Technische Schoolstraat 43 A, B-2440 Geel

http://www.big.be © BIG vzw

Reason for revision: 9.1 Revision number: 0602

Publication date: 2002-02-23 Date of revision: 2019-11-14

Product number: 51803

H362	May cause harm to breast-fed children.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H413	May cause long lasting harmful effects to aquatic life.
P-statements	
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.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P405	Store locked up.
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122°F.
P501	Dispose of contents/container in accordance with local/regional/national/international regulation.
Supplemental information	

Supplemental information

- 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

Gas/vapour spreads at floor level: ignition hazard

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name REACH Registration No		CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark
propane 01-2119486944-21		74-98-6 200-827-9	1% <c<10%< th=""><th>Flam. Gas 1; H220</th><th>(1)(2)(10)</th><th>Propellant</th></c<10%<>	Flam. Gas 1; H220	(1)(2)(10)	Propellant
		115-10-6	10/ -0 -150/	Press. Gas - Liquefied gas;	(1)(2)(10)	Dunnallant
dimethyl ether 01-2119472128-37		204-065-8	1% <c<15%< td=""><td>Flam. Gas 1; H220 Press. Gas - Liquefied gas;</td><td>(1)(2)(10)</td><td>Propellant</td></c<15%<>	Flam. Gas 1; H220 Press. Gas - Liquefied gas;	(1)(2)(10)	Propellant
polymethylene polyphenyl isoc	yanate	9016-87-9		Carc. 2; H351 Resp. Sens. 1; H334 Skin Sens. 1; H317 Acute Tox. 4; H332 STOT RE 2; H373 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335	(1)(2)(8)(10)(18)(V)	Polymer
isobutane 01-2119485395-27		75-28-5 200-857-2	1% <c<10%< td=""><td>Flam. Gas 1; H220 Press. Gas - Liquefied gas;</td><td>(1)(2)(10)(21)</td><td>Propellant</td></c<10%<>	Flam. Gas 1; H220 Press. Gas - Liquefied gas;	(1)(2)(10)(21)	Propellant
alkanes, C14-17, chloro 01-2119519269-33		85535-85-9 287-477-0	1% <c<20%< td=""><td>Lact. ; H362 Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td><td>(1)(2)(8)(10)</td><td>UVCB</td></c<20%<>	Lact. ; H362 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)(2)(8)(10)	UVCB
reaction mass of tris(2-chloropr tris(2-chloro-1-methylethyl) phi acid, bis(2-chloro-1-methylethyl and phosphoric acid, 2-chloro-1 chloropropyl) ester 01-2119486772-26	osphate and phosphoric I) 2-chloropropyl ester		1%C<5%	Acute Tox. 4; H302	(1)(10)	Constituent

- (1) For H-statements in full: see heading 16
- (2) Substance with a Community workplace exposure limit
- (8) Specific concentration limits, see heading 16
- (10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006
- (18) Polymethylene polyphenyl isocyanate, contains > 0.1% MDI-isomers
- (21) 1,3-butadiene < 0.1%
- (V) Exempted from registration under REACH (Regulation (EC) No 1907/2006, article 2 (9), polymers)

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SECTION 4: First aid measures

4.1. Description of first aid measures

General:

GENERAL. Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Wash immediately with lots of water. Take victim to a doctor if irritation persists.

After eve contact:

Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

After ingestion:

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Consult a doctor/medical service if you feel

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

4.2.1 Acute symptoms

After inhalation:

Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Runny nose. FOLLOWING SYMPTOMS MAY APPEAR LATER: Possible inflammation of the respiratory tract. Risk of lung oedema. Respiratory difficulties.

After skin contact:

Tingling/irritation of the skin.

After eye contact:

Irritation of the eye tissue. Lacrimation.

After ingestion:

Not applicable.

4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.1.1 Suitable extinguishing media:

Small fire: Quick-acting ABC powder extinguisher, Quick-acting BC powder extinguisher.

5.1.2 Unsuitable extinguishing media:

Small fire: Quick-acting CO2 extinguisher, Water (water can be used to control jet flame), Foam.

Major fire: Water (water can be used to control jet flame), Foam.

5.2. Special hazards arising from the substance or mixture

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, hydrogen chloride, carbon monoxide - carbon dioxide). Pressurised container: May burst if heated. May polymerize on exposure to temperature rise. On heating: release of toxic/combustible gases/vapours (hydrogen cyanide).

5.3. Advice for firefighters

5.3.1 Instructions:

If exposed to fire cool the closed containers by spraying with water. Physical explosion risk: extinguish/cool from behind cover. Do not move the load if exposed to heat. After cooling: persistant risk of physical explosion. Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water.

5.3.2 Special protective equipment for fire-fighters:

Gloves (EN 374). Protective goggles (EN 166). Head/neck protection. Protective clothing (EN 14605 or EN 13034). Heat/fire exposure: compressed air apparatus (EN 136 + EN 137).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gloves (EN 374). Protective goggles (EN 166). Head/neck protection. Protective clothing (EN 14605 or EN 13034).

Suitable protective clothing

See heading 8.2

6.2. Environmental precautions

Dam up the solid spill. Use appropriate containment to avoid environmental contamination.

6.3. Methods and material for containment and cleaning up

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Allow product to solidify and remove it by mechanical means. Carefully collect the spill/leftovers. Clean (treat) contaminated surfaces with acetone. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1. Precautions for safe handling

Use spark-/explosionproof appliances and lighting system. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Observe very strict hygiene - avoid contact. Remove contaminated clothing immediately.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Storage temperature: < 50 °C. Store in a cool area. Keep out of direct sunlight. Store in a dry area. Ventilation at floor level. Fireproof storeroom. Unauthorized persons are not admitted. Meet the legal requirements. Max. storage time: 1 year(s).

7.2.2 Keep away from:

Heat sources, ignition sources, (strong) acids, (strong) bases.

7.2.3 Suitable packaging material:

Agracal

7.2.4 Non suitable packaging material:

No data available

7.3. Specific end use(s)

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

EU			
Dimethylether		Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	1000 ppm
		Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	1920 mg/m³
Belgium			
4,4'-Diisocyanate de diphénylméthane (MDI)		Time-weighted average exposure limit 8 h	0.005 ppm
		Time-weighted average exposure limit 8 h	0.052 mg/m ³
Hydrocarbures aliphatiques sous forme gazeuse: (Alcanes C1-C3)		Time-weighted average exposure limit 8 h	1000 ppm
,		Short time value	980 ppm
		Short time value	2370 mg/m³
Oxyde de diméthyle		Time-weighted average exposure limit 8 h	1000 ppm
		Time-weighted average exposure limit 8 h	1920 mg/m ³
The Netherlands			·
Dimethylether		Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	496 ppm
		Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	950 mg/m³
		Short time value (Public occupational exposure limit value)	783 ppm
		Short time value (Public occupational exposure limit value)	1500 mg/m ³
rance			
4,4'-Diisocyanate de dipl	nénylméthane	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	0.01 ppm
		Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	0.1 mg/m ³
		Short time value (VL: Valeur non réglementaire indicative)	0.02 ppm
		Short time value (VL: Valeur non réglementaire indicative)	0.2 mg/m³
Oxyde de diméthyle		Time-weighted average exposure limit 8 h (VRI: Valeur réglementaire indicative)	1000 ppm
		Time-weighted average exposure limit 8 h (VRI: Valeur réglementaire indicative)	1920 mg/m³

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Applicable limit values whe limit values are applicable a Threshold values NEL/DMEL - Workers kanes, C14-17, chloro Effect level (DNEL/DMEL) DNEL action mass of tris(2-chloro ter and phosphoric acid, 2-c Effect level (DNEL/DMEL) DNEL NEL/DMEL - General popula kanes, C14-17, chloro Effect level (DNEL/DMEL)	and available these will be	mixture as intended	5522		
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ster and phosphoric acid, 2-c Effect level (DNEL/DMEL) DNEL NEL/DMEL - General popula kanes, C14-17, chloro Effect level (DNEL/DMEL)	Long-term systen	nic effects inhalation	6.7 mg/m ³		
ster and phosphoric acid, 2-c Effect level (DNEL/DMEL) DNEL NEL/DMEL - General popula kanes, C14-17, chloro Effect level (DNEL/DMEL)		nic effects dermal	47.9 mg/kg bw/day		
ster and phosphoric acid, 2-c Effect level (DNEL/DMEL) DNEL NEL/DMEL - General popula kanes, C14-17, chloro Effect level (DNEL/DMEL)	propyl) phosphate and tri	s(2-chloro-1-methylethyl) pl	hosphate and phosphoric acid, bis	2-chloro-1-methyl	ethyl) 2-chlo
Effect level (DNEL/DMEL) DNEL NEL/DMEL - General popula kanes, C14-17, chloro Effect level (DNEL/DMEL)					
NEL/DMEL - General popula kanes, C14-17, chloro Effect level (DNEL/DMEL)	Туре		Value	Remark	
kanes, C14-17, chloro Effect level (DNEL/DMEL)		nic effects inhalation	8.2 mg/m³		
kanes, C14-17, chloro Effect level (DNEL/DMEL)	Acute systemic et		22.6 mg/m³		
kanes, C14-17, chloro Effect level (DNEL/DMEL)		nic effects dermal	2.91 mg/kg bw/day		
kanes, C14-17, chloro Effect level (DNEL/DMEL)		and en cots derina.	2.528/1.8 211/ 444/		
Effect level (DNEL/DMEL)	ution				
	Туре		Value	Remark	
DIVEE	,,	nic effects inhalation	2 mg/m³	Homan	
		nic effects dermal	28.75 mg/kg bw/day		
	Long-term system		0.58 mg/kg bw/day	+	
action mass of trial 2 ablance			hosphate and phosphoric acid, bis	(2 chlore 1+- 1	othyll 2 -l-1 -
			nosphate and phosphoric acid, bis	2-cnioro-1-metnyi	etnyi) 2-chio
ster and phosphoric acid, 2-c		<u>2-cnioropropyi) ester</u>	Malue	Damani	
Effect level (DNEL/DMEL)	Туре		Value	Remark	
DNEL		nic effects inhalation	1.45 mg/m³		
	Acute systemic et		5.6 mg/m³		
		<mark>nic effec</mark> ts dermal	1.04 mg/kg bw/day		
	Long-term systen		0.52 mg/kg bw/day		
	Acute systemic et	ffects oral	2 mg/kg bw/day		
NEC					
kanes, C14-17, chloro					
Compartments		/alue	Remark		
Fresh water	N	L μg/l			
Marine water					
STP	1				
Fresh water sediment	1).2 μg/l			
i i con water scumment	1 0 8	0.2 μg/l 80 mg/l			
Marino water codiment	1 C 8 1	0.2 μg/l 80 mg/l 1.3 mg/kg sediment dw			
Marine water sediment Soil	1 C 8 1 2	0.2 μg/l 80 mg/l			

Reason for revision: 9.1 Publication date: 2002-02-23 Date of revision: 2019-11-14

10 mg/kg food

5 / 17 Revision number: 0602 Product number: 51803

reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl

ester and phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester

Compartments	Value	Remark
Fresh water	<mark>0.32 mg</mark> /l	
Aqua (intermittent releases)	0.51 mg/l	
Marine water	<mark>0.032 m</mark> g/l	
STP	<mark>19.1 mg/l</mark>	
Fresh water sediment	11.5 mg/kg sediment dw	
Marine water sediment	1.15 mg/kg sediment dw	
Soil	<mark>0.34 mg/</mark> kg soil dw	
Oral	11.6 mg/kg food	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2. Exposure controls

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Use spark-/explosionproof appliances and lighting system. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Measure the concentration in the air regularly.

8.2.2 Individual protection measures, such as personal protective equipment

Observe very strict hygiene - avoid contact. Do not eat, drink or smoke during work.

a) Respiratory protection:

Full face mask with filter type A at conc. in air > exposure limit.

b) Hand protection:

Protective gloves against chemicals (EN 374).

Materials	Measured breakthrough time	Remark	Protection index
LDPE (Low Density Poly	> 10 minutes	0.025 mm	Class 1
Ethylene)			

c) Eye protection:

Protective goggles (EN 166).

d) Skin protection:

Head/neck protection. Protective clothing (EN 14605 or EN 13034).

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical form		Aerosol					
Odour		Characteristic odour					
Odour threshold		No data available					
Colour		Variable in colour, depending on the composition					
Particle size		Not applicable					
Explosion limits		No data available					
Flammability		Extremely flammable aerosol.					
Log Kow		Not applicable (mixture)					
Dynamic viscosity		No data available					
Kinematic viscosity		No data available					
Melting point		No data available					
Boiling point		o data available					
Evaporation rate		No data available					
Relative vapour density		>1					
Vapour pressure		In the pressurized container the vapour pressure exceeds 500 kPa. After foam release, the vapour pressure is very low (not declared)					
Solubility		Organic solvents; soluble					
		Water ; insoluble					
Relative density		0.95; 20°C					
Decomposition temperature		No data available					
Auto-ignition temperatu <mark>re</mark>		No data available					
Flash point		Not applicable					
Explosive properties		No chemical group associated with explosive properties					
Oxidising properties		No chemical group associated with oxidising properties					
рН		No data available					

9.2. Other information

Absolute density	950 kg/m ³ : 20	°C		

Reason for revision: 9.1 Publication date: 2002-02-23
Date of revision: 2019-11-14

Revision number: 0602 Product number: 51803 6 / 17

SECTION 10: Stability and reactivity

10.1. Reactivity

May be ignited by sparks. Gas/vapour spreads at floor level: ignition hazard. No data available.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

May polymerize with many compounds e.g.: (strong) bases and amines. Reacts violently with (some) acids/bases.

10.4. Conditions to avoid

Precautionary measures

Use spark-/explosionproof appliances and lighting system. Keep away from naked flames/heat. Keep away from ignition sources/sparks.

10.5. Incompatible materials

(strong) acids, (strong) bases.

10.6. Hazardous decomposition products

On heating: release of toxic/combustible gases/vapours (hydrogen cyanide). On burning: release of toxic and corrosive gases/vapours (nitrous vapours, hydrogen chloride, carbon monoxide - carbon dioxide).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

11.1.1 Test results

Acute toxicity

Gun Grade Expanding Foam B3 UK

No (test)data on the mixture available

Judgement is based on the relevant ingredients

polymethylene polyphenyl isocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value	Remark
						determination	
Oral	LD50		<mark>> 10000</mark> mg/kg		Rat	Literature study	
Dermal	LD50		<mark>> 5000 m</mark> g/kg		Rabbit	Literature study	
Inhalation (vapours)	LC50		11 mg/l	4 h		Literature	

alkanes, C14-17, chloro

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value	Remark
						determination	
Oral	LD50		> 4000 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50		> 13500 mg/kg bw	24 h	Rabbit	Read-across	
Inhalation (vapours)	LC50		> 48.170 mg/l air	1 h	Rat	Read-across	

reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl

ester and phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value	Remark
						determination	
Oral	LD50	EU Method B.1	632 mg/kg bw		Rat (female)	Experimental value	
Dermal	LD50	OECD 402	> 2000 mg/kg bw	24 h	Rat (male / female)	Experimental value	
Inhalation (aerosol)	LC50	OECD 403	> 7 mg/l	4 h	Rat (male / female)	Experimental value	

Conclusion

Harmful if inhaled.

Not classified as acute toxic in contact with skin

Not classified as acute toxic if swallowed

Corrosion/irritation

Gun Grade Expanding Foam B3 UK

No (test)data on the mixture available

Classification is based on the relevant ingredients

Reason for revision: 9.1 Publication date: 2002-02-23
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lymethylene polyph	enyl isocyanate						
Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating; category 2					Literature study	
Skin	Irritating; category 2					Literature study	
Inhalation	Irritating; STOT SE cat.3					Literature study	
kanes, C14-17, chlore	0						
Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Slightly irritating				Rabbit	Expert judgement	
Skin	Slightly irritating	OECD 404	4 h	24; 72 hours	Rabbit	Expert judgement	
				(I) phosphate and pho	osphoric acid, bis(2	-chloro-1-methylethyl)	2-chloropro
ter and phosphoric a				T 1 .	lo	hr-t-	n :
Route of exposure		Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405	24 h	24; 48; 72 hours	Rabbit	Experimental value	
Skin	Not irrit <mark>ating</mark>	OECD 404	4 h	24; 48; 72 hours	Rabbit	Experimental value	
atory or skin sensitis Grade Expanding Foa o (test)data on the massification is based	am B3 UK nixture available	gredients					
tory or skin sensitis. Grade Expanding Foat to (test)data on the massification is based	ation am B3 UK iixture available on the relevant in ienyl isocyanate	gredients Method	Exposure time	Observation time	Species	Value determination	Remark
tory or skin sensitismorade Expanding Foat (test) data on the massification is based olymethylene polyph Route of exposure Skin	ation am B3 UK iixture available on the relevant in ienyl isocyanate		Exposure time	Observation time point	Species	Value determination Literature study	Remark
tory or skin sensitismostatory or skin sensi	ation am B3 UK nixture available on the relevant in nenyl isocyanate Result Sensitizing;		Exposure time		Species		Remark
tory or skin sensitisment of the massification is based olymethylene polyph Route of exposure Skin sames, C14-17, chlory	ation mm B3 UK nixture available on the relevant in tenyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 Sensitizing;		Exposure time Exposure time		Species Species	Literature study	
or skin sensitistics and expanding Foat or (test) data on the massification is based olymethylene polyph Route of exposure Skin Skin Skin Skin Skin Skin Skin Skin	ation mm B3 UK nixture available on the relevant in tenyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 O Result Not sensitizing	Method		Point Observation time		Literature study Literature study	
citory or skin sensitises Grade Expanding Foace of (test) data on the massification is based oblymethylene polyph Route of exposure Skin Inhalation Kanes, C14-17, chlore Route of exposure Skin Indication Skin Indication Skin Indication Indic	ation am B3 UK nixture available on the relevant in enyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 O Result Not sensitizing -chloropropyl) phe	Method Method Guinea pig maximisation test osphate and tris(2-cl	Exposure time	Observation time point 48 hours	Species Guinea pig	Literature study Literature study Value determination	Remark
tory or skin sensitis. Grade Expanding Foa to (test) data on the massification is based olymethylene polyph Route of exposure Skin Inhalation kanes, C14-17, chlore Route of exposure Skin Installation Skin Installation Insta	ation am B3 UK nixture available on the relevant in enyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 o Result Not sensitizing -chloropropyl) phe	Method Method Guinea pig maximisation test osphate and tris(2-cleethylethyl bis(2-chloethylethyl bis(2-chloethylethyl bis(2-chloethylethyl bis(2-chloethylethyl bis(2-chloethylethylethylethylethylethylethylethyl	Exposure time	Observation time point 48 hours //) phosphate and pho	Species Guinea pig esphoric acid, bis(2	Literature study Literature study Value determination Experimental value -chloro-1-methylethyl)	Remark 2-chloropro
citory or skin sensitis: Grade Expanding Foa to (test) data on the m assification is based solymethylene polyph Route of exposure Inhalation kanes, C14-17, chlore Route of exposure Skin content of exposure Skin action mass of tris(2 ter and phosphoric are Route of exposure	ation am B3 UK nixture available on the relevant in enyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 O Result Not sensitizing -chloropropyl) phe acid, 2-chloro-1-m Result	Method Guinea pig maximisation test osphate and tris(2-cle ethylethyl bis(2-chlo	Exposure time	Observation time point 48 hours (1) phosphate and pho	Species Guinea pig esphoric acid, bis(2 Species	Literature study Literature study Value determination Experimental value -chloro-1-methylethyl) Value determination	Remark 2-chloropro
Actory or skin sensitists Grade Expanding Foa o (test) data on the m assification is based olymethylene polyph Route of exposure Skin Inhalation Skin Skin Inhalation Skin	ation am B3 UK nixture available on the relevant in enyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 O Result Not sensitizing -chloropropyl) phe acid, 2-chloro-1-m Result	Method Method Guinea pig maximisation test osphate and tris(2-cleethylethyl bis(2-chloethylethyl bis(2-chloethylethyl bis(2-chloethylethyl bis(2-chloethylethyl bis(2-chloethylethylethylethylethylethylethylethyl	Exposure time	Observation time point 48 hours (1) phosphate and pho	Species Guinea pig esphoric acid, bis(2	Literature study Literature study Value determination Experimental value -chloro-1-methylethyl)	Remark 2-chloropro
Action or skin sensitism action mass of tris(2 ter and phosphoric a Route of exposure	ation am B3 UK nixture available on the relevant in enyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 O Result Not sensitizing -chloropropyl) phe acid, 2-chloro-1-m Result Not sensitizing skin reaction. sthma symptoms ty mm B3 UK	Method Method Guinea pig maximisation test osphate and tris(2-cle ethylethyl bis(2-chlo Method OECD 429	Exposure time hloro-1-methylethoropropyl) ester Exposure time	Observation time point 48 hours (1) phosphate and pho	Species Guinea pig esphoric acid, bis(2 Species	Literature study Literature study Value determination Experimental value -chloro-1-methylethyl) Value determination	Remark 2-chloropro

Speci

	·								-	determination
	Inhalation				STOT RE cat.2					Literature study
alka	nes, C14-17, chloro	_				_				
	Route of exposure	Parar	neter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
	Oral (diet)	NOAE		Equivalent to OECD 408	300 ppm		No effect	13 weeks (daily)	Rat (male / female)	Experimental value
	Oral (diet)	NOAE		OECD 408	23 mg/kg bw/day - 24.6 mg/kg bw/day		No effect	13 weeks (daily)	Rat (male / female)	Experimental value
	Dermal									Data waiving
	Inhalation									Data waiving

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reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl

ester and phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester

Route of exposure	Paramet	er Method	Value	Organ	Effect	Exposure time		Value determination
Oral (diet)	NOAEL	Subchronic toxicity test	171 mg/kg bw/day		No effect	13 weeks (daily)	Rat (female)	Experimental value
Oral (diet)	LOAEL	Subchronic toxicity test	52 mg/kg bw/day	Liver	Weight gain	13 weeks (daily)	Rat (male)	Experimental value
Inhalation	Dose leve	·I	0.586 mg/l air		No effect		Mouse (male)	Experimental value

Conclusion

May cause damage to organs through prolonged or repeated exposure if inhaled.

Not classified as sub-chronically toxic in contact with skin

Not classified as sub-chronically toxic if swallowed

Mutagenicity (in vitro)

Gun Grade Expanding Foam B3 UK

No (test)data on the mixture available

Classification is based on the relevant ingredients

alkanes, C14-17, chloro

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	
activation, negative					
without metabolic					
activation					

reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl

ester and phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic	OECD 482	Rat liver cells		Experimental value	
activation, negative					
without metabolic					
activation					
Negative without	OECD 476	Mouse (lymphoma L5178Y		Experimental value	
metabolic activation,		cells)			
positive with metabolic					
activation					

Mutagenicity (in vivo)

Gun Grade Expanding Foam B3 UK

No (test)data on the mixture available

Classification is based on the relevant ingredients

alkanes, C14-17, chloro

Result		Method	Exposure time	Test substrate	Organ	Value determination
Negative		Equivalent to OECD 475	<mark>5 day</mark> (s)	Rat (male)	Bone marrow	Experimental value
Negative		Equivalent to OECD 474		Mouse (male / female)	Bone marrow	Experimental value

reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl

ester and phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	OECD 474		Mouse (male / female)	Bone marrow	Experimental value

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

Gun Grade Expanding Foam B3 UK

No (test)data on the mixture available

Classification is based on the relevant ingredients

polymethylene polyphenyl isocyanate

	Route of	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value
	exposure								determination
	Unknown			category 2	_				Literature study
alk	nes, C14-17, c	hloro							

intarics, Ca	L I III, CIIIOIO							
Route	of Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value
exposu	ıre							determination
Oral	LOAEL	Equivalent to	312 mg/kg	104 weeks (5 days /	Rat (male /	Carcinogenicity	Liver; kidney	Read-across
		OECD 451	bw/day	week)	female)			
Oral	LOAEL	Equivalent to	312 mg/kg	103 weeks (5 days /	Rat (male /	Carcinogenicity	Thyroid	Read-across
		OECD 451	bw/day	week)	female)			

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reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl

ester and phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester

Route of	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value
exposure								determination
Unknown								Data waiving

Conclusion

Suspected of causing cancer.

Reproductive toxicity

Gun Grade Expanding Foam B3 UK

No (test)data on the mixture available

Classification is based on the relevant ingredients

alkanes, C14-17, chloro

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL	Equivalent to OECD 414	5000 mg/kg bw/day	14 days (gestation, daily)	Rat	No effect		Experimental value
Maternal toxicity	NOAEL	Equivalent to OECD 414	500 mg/kg bw/day	13 days (gestation, daily)	Rat	No effect		Experimental value
Effects on fertility	NOAEL (P)	OECD 421	100 mg/kg bw/day	9 week(s)	Rat (male)	No effect	Male reproductive organ	Experimental value
	NOAEL (P)	OECD 421	100 mg/kg bw/day	11 week(s) - 12 week(s)	Rat (female)		Female reproductive organ	Experimental value
Effects on lactation	LOAEL		3125 mg/kg bw		Rat (male / female)	Increased mortality in the pups		Experimental value

reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl

ester and phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester

	Parameter	Method	Value	Exposure time	Species	Effect	- 3 -	Value determination
Developmental toxicity (Oral (stomach tube))	NOAEL		500 mg/kg bw/day	21 day(s)	Rabbit	No effect		Experimental value
Maternal toxicity (Oral (stomach tube))	NOAEL		500 mg/kg bw/day	21 day(s)	Rabbit	No effect		Experimental value
Effects on fertility (Oral (diet))	LOAEL		99 mg/kg bw/day		Rat (male / female)		Female reproductive organ	Experimental value

Conclusion

May cause harm to breast-fed children.

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

Gun Grade Expanding Foam B3 UK

No (test)data on the mixture available

alkanes, C14-17, chloro

Parameter	Method	Value	Organ	Effect	Exposure time	Value determination
	Other			Skin dryness or cracking		 Experimental value Skin

Chronic effects from short and long-term exposure

Gun Grade Expanding Foam B3 UK

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Feeling of weakness. Itching. Skin rash/inflammation. May stain the skin. Dry skin. Coughing. Possible inflammation of the respiratory tract. Respiratory difficulties.

SECTION 12: Ecological information

12.1. Toxicity

Gun Grade Expanding Foam B3 UK

No (test)data on the mixture available

Classification is based on the relevant ingredients

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Acute toxicity other aquatic organisms	yanate Pa	rameter	Method	Value	9	Duration	Spe	cies	Test de	sign	Fresh/salt water	Value determ
	LC:	50		> 100	00 mg/l	96 h						Literature stud
Toxicity aquatic micro- organisms	EC	250	OECD 209	> 100	mg/l		Act	ivated sludge				Literature stud
kanes, C14-17, chloro												
	Pa	rameter	Method	Value	9	Duration	Spe	cies	Test de	sign	Fresh/salt water	Value determi
Acute toxicity fishes	LC:	50	Equivalent to OECD 203	> 500	00 mg/l	96 h		urnus urnus	Static sy	/stem	Brackish water	Experimental v Nominal concentration
Acute toxicity crustacea	EC	250	OECD 202	0.006	mg/l	48 h	Dap	hnia magna	Static sy	/stem	Fresh water	Experimental v
Toxicity algae and other aquat plants	tic NC	DEC	OECD 201	0.1 m	ng/l	96 h		udokirchnerie ubcapitata	Static sy	/stem	Fresh water	Experimental v GLP
	Er	C50	OECD 201	> 3.2	mg/l	72 h		udokirchnerie subcapitata	Static sy	/stem	Fresh water	Experimental \
Long-term toxicity fish	NC	DEC	OECD 204	> 125		14 day(s)		urnus urnus	Semi-st system	atic	Brackish water	Experimental v
Long-term toxicity aquatic crustacea	NC	DEC	OECD 202	0.01	mg/l	21 day(s)	Dap	hnia magna	Static sy	/stem	Fresh water	Experimental v
	Pa	rameter	Method		V	alue		Duration	!	Species	S	Value determi
Toxicity soil macro-organisms		DEC	OECD 222			00 mg/kg soil		56 day(s)		•	fetida	Experimental v
Toxicity soil micro-organisms	NC	DEC	OECD 216			400 mg/kg so		28 day(s)		Soil mi	cro-organisms	Experimental v
	EC	:50	OECD 216		>	400 mg/kg so	oil dw	28 day(s)		Soil mi	cro-organisms	Experimental v
Toxicity terrestrial plants	_	DEC	OECD 208			5000 mg/l		28 day(s)		Brassic	a napus	Experimental v
Toxicity birds	LC:	50	Equivalent 205	t to Of	ECD >	24603 mg/kg	food	5 day(s)		Phasia	nus colchicus	Experimental v
	NC	DEC	Equivalent 205	t to OF	CD 2	4603 mg/kg fo	boc	5 day(s)		Phasia	nus colchicus	Experimental v
eaction mass of tris(2-chloropr	(lygo	phosphate	and tris(2-chlo	ro-1-r	nethyl	ethyl) phospha	ate and	l phosphoric a	cid, bis(2-chlor	o-1-methyleth	ıyl) 2-chloropro
ster and phosphoric acid, 2-chl												
	Pa	rameter	Method	Value)	Duration	Spe	cies	Test de	sign	Fresh/salt water	Value determi
Acute toxicity fishes	LC:	50	Other	56.2	mg/l	96 h	Bra reri		Static sy	/stem	Fresh water	Experimental v GLP
Acute toxicity crustacea	LC:	50		131 n	ng/l	48 h	Dap	hnia magna	Static sy	/stem	Fresh water	Experimental v Locomotor eff
	tic Er(C50	OECD 201	82 m	g/l	72 h		udokirchnerie ubcapitata	Static sy	/stem	Fresh water	Experimental v GLP
Toxicity algae and other aqual plants												
												Data waiving
plants	NC	DEC	OECD 202	32 m	g/l	21 day(s)	Dap	ohnia magna	Semi-st system	atic	Fresh water	
plants Long-term toxicity fish Long-term toxicity aquatic		DEC	OECD 202 ISO 8192	32 m		21 day(s) 3 h					Fresh water Fresh water	Data waiving Experimental v
plants Long-term toxicity fish Long-term toxicity aquatic crustacea Toxicity aquatic micro-	EC effect	ts to aquati	ISO 8192			,,,			system			Data waiving Experimental v GLP Experimental v
plants Long-term toxicity fish Long-term toxicity aquatic crustacea Toxicity aquatic micro- organisms clusion lay cause long lasting harmful 2. Persistence and degiolymethylene polyphenyl isocy	EC effect	ts to aquati	ISO 8192			3 h			system	ystem		Data waiving Experimental v GLP Experimental v GLP
plants Long-term toxicity fish Long-term toxicity aquatic crustacea Toxicity aquatic micro- organisms clusion lay cause long lasting harmful 2. Persistence and degrolymethylene polyphenyl isocy Biodegradation water	effect rada yanate	ts to aquati	ISO 8192			3 h	Acti		system	ystem Val	Fresh water	Data waiving Experimental v GLP Experimental v GLP
plants Long-term toxicity fish Long-term toxicity aquatic crustacea Toxicity aquatic micro- organisms clusion lay cause long lasting harmful 2. Persistence and degrolymethylene polyphenyl isocy Biodegradation water Method OECD 302C: Inherent Biodeg Modified MITI Test (II) kanes, C14-17, chloro	effect rada yanate	ts to aquati	ISO 8192 c life.			3 h	Acti		system	ystem Val	Fresh water	Data waiving Experimental v GLP Experimental v GLP
plants Long-term toxicity fish Long-term toxicity aquatic crustacea Toxicity aquatic micro- organisms clusion lay cause long lasting harmful 2. Persistence and degrolymethylene polyphenyl isocy Biodegradation water Method OECD 302C: Inherent Biodeg Modified MITI Test (II) kanes, C14-17, chloro Biodegradation water	effect rada yanate	ts to aquati	ISO 8192 c life. Value < 60 %			3 h	Acti		system	vstem Val Exp	Fresh water ue determinat erimental valu	Data waiving Experimental v GLP Experimental v GLP
plants Long-term toxicity fish Long-term toxicity aquatic crustacea Toxicity aquatic micro- organisms clusion lay cause long lasting harmful 2. Persistence and degrolymethylene polyphenyl isocy Biodegradation water Method OECD 302C: Inherent Biodeg Modified MITI Test (II) kanes, C14-17, chloro Biodegradation water Method	effect rada yanate	ts to aquati	ISO 8192 c life. Value < 60 %			Dura Dura	ation		system	Val Exp	resh water ue determinaterimental valu ue determinat	Data waiving Experimental v GLP Experimental v GLP tion
plants Long-term toxicity fish Long-term toxicity aquatic crustacea Toxicity aquatic micro- organisms clusion lay cause long lasting harmful 2. Persistence and degrolymethylene polyphenyl isocy Biodegradation water Method OECD 302C: Inherent Biodeg Modified MITI Test (II) kanes, C14-17, chloro Biodegradation water Method OECD 301D: Closed Bottle T	effect rada yanate	ts to aquati	ISO 8192 c life. Value < 60 %			Dura Dura	Acti		system	Val Exp	Fresh water ue determinat erimental valu	Data waiving Experimental v GLP Experimental v GLP tion
plants Long-term toxicity fish Long-term toxicity aquatic crustacea Toxicity aquatic micro- organisms clusion lay cause long lasting harmful 2. Persistence and degrolymethylene polyphenyl isocy Biodegradation water Method OECD 302C: Inherent Biodeg Modified MITI Test (II) kanes, C14-17, chloro Biodegradation water Method OECD 301D: Closed Bottle T Biodegradation soil	effect rada yanate	ts to aquati	ISO 8192 c life. Value < 60 % Value 37 %; GLP			Dura Dura 28 d	ation ation		system	Val Exp	ue determinativerimental valu	Data waiving Experimental v GLP Experimental v GLP tion ue
plants Long-term toxicity fish Long-term toxicity aquatic crustacea Toxicity aquatic micro- organisms clusion lay cause long lasting harmful 2. Persistence and degrolymethylene polyphenyl isocy Biodegradation water Method OECD 302C: Inherent Biodeg Modified MITI Test (II) kanes, C14-17, chloro Biodegradation water Method OECD 301D: Closed Bottle T	effect rada yanate	ts to aquati	ISO 8192 c life. Value < 60 % Value 37 %; GLP			Dura Dura Dura Dura	Action ation		system	Val Exp Val Exp	ue determinatierimental valuue determinatierimental valuue determinatierimental valuue determinatierimental valuue determinatierimental valuue determinatierimental	Data waiving Experimental of GLP Experimental of GLP Experimental of GLP tion te tion
plants Long-term toxicity fish Long-term toxicity aquatic crustacea Toxicity aquatic micro- organisms clusion lay cause long lasting harmful 2. Persistence and degrolymethylene polyphenyl isocy Biodegradation water Method OECD 302C: Inherent Biodeg Modified MITI Test (II) kanes, C14-17, chloro Biodegradation water Method OECD 301D: Closed Bottle T Biodegradation soil	effect rada yanate	ts to aquati	ISO 8192 c life. Value < 60 % Value 37 %; GLP			Dura Dura 28 d	Action ation		system	Val Exp Val Exp	ue determinativerimental valu	Data waiving Experimental v GLP Experimental v GLP tion te
plants Long-term toxicity fish Long-term toxicity aquatic crustacea Toxicity aquatic micro- organisms clusion lay cause long lasting harmful 2. Persistence and degrolymethylene polyphenyl isocy Biodegradation water Method OECD 302C: Inherent Biodeg Modified MITI Test (II) kanes, C14-17, chloro Biodegradation water Method OECD 301D: Closed Bottle T Biodegradation soil	effect rada yanate	ts to aquati	ISO 8192 c life. Value < 60 % Value 37 %; GLP			Dura Dura Dura Dura	Action ation		system	Val Exp Val Exp	ue determinatierimental valuue determinatierimental valuue determinatierimental valuue determinatierimental valuue determinatierimental valuue determinatierimental	Data waiving Experimental v GLP Experimental v GLP tion te

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reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl ester and phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester **Biodegradation water** Value Value determination Method Duration OECD 301E: Modified OECD Screening Test 14 %; GLP 28 day(s) Experimental value Phototransformation air (DT50 air) Method Value Conc. OH-radicals Value determination

AOPWIN v1.92 8.6 h 500000 /cm³ Calculated value

Half-life water (t1/2 water)

Method	V	/alue	Primary degradation/mineralisatio	Value determination
EU Method C.7	>	· 1 year(s)	Primary degradation	Experimental value

Contains non readily biodegradable component(s)

12.3. Bioaccumulative potential

Gun Grade Expanding Foam B3 UK

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

polymethylene polyphenyl isocyanate

BCF fishes

Parameter	Metho	d	Value	Dura	ation	Species	Value determination
BCF			1			Pisces	Literature study

Log Kow

Method	Remark	Value	Temperature	Value determination
	No data available			

alkanes, C14-17, chloro

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF	OECD 305	6660	<mark>35 d</mark> ay(s)	Oncorhynchus mykiss	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
		<mark>5.47</mark> - 8.01		Experimental value
		> 5		

reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl ester and phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF	OECD 305	0.8 - 14; Fresh	6 week(s)	Cyprinus carpio	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
EU Method A.8		<mark>2.68</mark>	30 °C	Experimental value

Conclusion

Contains bioaccumulative component(s)

12.4. Mobility in soil

alkanes, C14-17, chloro

(log) Koc

Parameter	Method	Value	Value determination
log Koc		5	Experimental value

reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl ester and phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester

(log) Koc

Parameter	Method	Value	Value determination
log Koc	EU Method C.19	2.76	Experimental value

Percent distribution

Method	Fraction air		Fraction sediment	Fraction soil	Fraction water	Value determination
Mackay level I	0.01 %	0 %	3.55 %	3.52 %	92.89 %	Read-across

Conclusion

Contains component(s) that adsorb(s) into the soil Contains component(s) with potential for mobility in the soil

12.5. Results of PBT and vPvB assessment

Does not contain component(s) that meet(s) the criteria of PBT and/or vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006.

Reason for revision: 9.1	Publication date: 2002-02-23
	Date of revision: 2019-11-14

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12.6. Other adverse effects

Gun Grade Expanding Foam B3 UK

Greenhouse gases

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

polymethylene polyphenyl isocyanate

Greenhouse gases

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014)

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1. Waste treatment methods

13.1.1 Provisions relating to waste

European Union

Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

08 05 01* (wastes not otherwise specified in 08: waste isocyanates).

16 05 04* (gases in pressure containers and discarded chemicals: gases in pressure containers (including halons) containing hazardous substances). Depending on branch of industry and production process, also other waste codes may be applicable.

13.1.2 Disposal methods

Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Specific treatment. Do not discharge into drains or the environment.

13.1.3 Packaging/Container

European Union

Reason for revision: 9.1

Waste material code packaging (Directive 2008/98/EC).

15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information Road (ADR) 14.1. UN number UN number 1950 14.2. UN proper shipping name Aerosols Proper shipping name 14.3. Transport hazard class(es) Hazard identification number Classification code 14.4. Packing group Packing group Labels 2.1 14.5. Environmental hazards Environmentally hazardous substance mark no 14.6. Special precautions for user Special provisions 190 Special provisions 327 344 Special provisions Special provisions 625 Limited quantities Combination packagings: not more than 1 liter per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass) Rail (RID) 14.1. UN number 1950 UN number 14.2. UN proper shipping name Proper shipping name Aerosols 14.3. Transport hazard class(es) Hazard identification number Class Classification code 14.4. Packing group Packing group 2.1 14.5. Environmental hazards Environmentally hazardous substance mark no

Revision number: 0602 Product number: 51803 13 / 17

Publication date: 2002-02-23 Date of revision: 2019-11-14

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Special provis Limited quant Annex II of M.	cautions for user	
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Special provis Special provis Special provis Special provis Limited quant 14.7. Transport in Annex II of M.	sions	277
Special provis Special provis Special provis Special provis Limited quant 14.7. Transport in Annex II of M.	sions	327
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Limited quant 14.7. Transport in Annex II of M.		959
14.7. Transport in Annex II of M.		Combination packagings: not more than 1 liter per inner packaging for
Annex II of M		liquids. A package shall not weigh more than 30 kg. (gross mass)
	n bulk according to Annex II of Marpol and the IE	Not applicable
		ivot applicable
ir (ICAO-TI/IAT	A-DGR)	
14.1. UN number	-	
UN number		1950
14.2. UN proper s	shipping na <mark>me</mark>	
Proper shippi		Aerosols, flammable
14.3. Transport h	azard class(es)	
Class		2.1
14.4. Packing gro	up	
Packing group	p	
Labels		2.1
14.5. Environmen		
	ally hazardous substance mark	no
14.6. Special prec		
Special provis		A145
Special provis		A167
Special provis		A802
	sions	1002

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Passenger and cargo transport

Limited quantities: maximum net quantity per packaging 30 kg G

SECTION 15: Regulatory information

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

VOC content Directive 2010/75/EU

VOC content		Remark	
23.41 % - 24.06 %			
222.35 g/l - 228.57 g/l			

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

and use of certain dang <mark>erous substances, mixtures and article</mark> s.						
		Designation of the substance, of the grou	p of Conditions of restriction			
		substances or of the mixture				
polymethylene polyphenyl isocyana alkanes, C14-17, chloro reaction mass of tris(2-chloropropy phosphate and tris(2-chloro-1-methyphosphate and phosphoric acid, bis(chloro-1-methylethyl) 2-chloropropy and phosphoric acid, 2-chloro-1-methylethyl) ester	l) ylethyl) 2- yl ester		1. 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, A to 2. Articles not complying with paragraph 1 shall not be placed on the market. 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: - can be used as fuel in decorative oil lamps for supply to the general public, and,			
			ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled H304, intended for supply to the general public. 7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.¹			
			Commission			
polymethylene polyphenyl isocyana		Methylenediphenyl diisocyanate (MDI) including the following specific isomers: 4 Methylenediphenyl diisocyanate; 2,4'-Methylenediphenyl diisocyanate; 2,2'-Methylenediphenyl diisocyanate	1. Shall not be placed on the market after 27 December 2010, as a constituent of mixtures in concentrations equal to or greater than 0,1 % by weight of MDI for supply to the general public, unless suppliers shall ensure before the placing on the market that the packaging: (a) contains protective gloves which comply with the requirements of Council Directive 89/686/EEC; (b) is marked visibly, legibly and indelibly as follows, and without prejudice to other Community legislation concerning the classification, packaging and labelling of substances and mixtures: "— 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. By way of derogation, paragraph 1(a) shall not apply to hot melt adhesives.			
National legislation Belgium	1					

National legislation Belgium

Gun Grade Expanding Foam B3 UK

No data available

National legislation The Netherlands

Gun Grade Expanding Foam I

Waterbezwaarlijkheid Z (2); Algemene Beoordelingsmethodiek (ABM)

Reason for revision: 9.1 Publication date: 2002-02-23
Date of revision: 2019-11-14

Revision number: 0602 Product number: 51803 15 / 17

a	kanes, C14-17, chloro		
	SZW - Lijst van voor de	Alkanen, C14-C17, chloor; May cause harm to breastfed babies	
	voortplanting giftige st <mark>offen</mark>		
	(borstvoeding)		

National legislation France

Gun Grade Expanding Foam B3 UK

No data available

polymethylene polyphenyl isocyanate

Catégorie cancérogène 4,4'-Diisocyanate de diphénylméthane; C2

National legislation Germany

Gun Grade Expanding Foam B3 UK

WGK	2; Classification water polluting based on the components in compliance with Verwaltungsvorschrift
	wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 4)

polymethylene polyphenyl isocyanate

orymethylene poryphen	yr isocyui	late_
TA-Luft		5.2.5/I
TRGS900 - Risiko der		4,4'-Methylendiphenyldiisocyanat; Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes
Fruchtschädigung		<mark>und des biologischen Grenzw</mark> ertes nicht befürchtet zu werden
		pMDI (als MDI berechnet); Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des
		<mark>biologischen Grenzwertes ni</mark> cht befürchtet zu werden
Sensibilisierende Stoffe		4,4'-Methylendiphenyldiisocyanat; Sah, Atemwegssensibilisierende Stoffe Und Hautsensibilisierende Stoffe, an beiden
		Zielorganen Allergien auslösende
		pMDI (als MDI berechnet); Sa; Atemwegssensibilisierende Stoffe
TRGS905 - Krebserzeug	end	Techn. ("Polymeres") MDI (pMDI) (in Form atembarer Aerosole, A-Fraktion); 2
TRGS905 - Erbgutverän	dernd	Techn. ("Polymeres") MDI (pMDI) (in Form atembarer Aerosole, A-Fraktion); -
TRGS905 -		Techn. ("Polymeres") MDI (pMDI) (in Form atembarer Aerosole, A-Fraktion); -
Fruchtbarkeitsgefährde	end	
TRGS905 - Fruchtschädigend		Techn. ("Polymeres") MDI (pMDI) (in Form atembarer Aerosole, A-Fraktion); -
Hautresorptive Stoffe		4 <mark>,4'-Methylendiphenyldiisoc</mark> yanat; H; Hautresorptiv
		pMDI (als MDI berechnet); H; Hautresorptiv

alkanes, C14-17, chloro

TA-Luft	5.2.5/I
TRGS900 - Risiko der	Chloralkane, C14-17 (Chlorierte Paraffine C14-17); Y; Risiko der Fruchtschädigung braucht bei Einhaltung des
Fruchtschädigung	Arbeitsplatzgrenzwertes und des biologischen Grenzwertes nicht befürchtet zu werden
Hautresorptive Stoffe	Chloralkane, C14-17 (Chlorierte Paraffine C14-17); H; Hautresorptiv

reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl ester and phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester

TA-Luft 5.2.5

National legislation United Kingdom

Gun Grade Expanding Foam B3 UK

No data available

polymethylene polyphenyl isocyanate

Skin Sensitisation	Isocyanates, all (as -NCO) Except methyl isocyanate; Sen
Respiratory sensitisation	Isocyanates, all (as -NCO) Except methyl isocyanate; Sen

Other relevant data

Gun Grade Expanding Foam B3 UK

No data available

polymethylene polyphenyl isocyanate

IARC - classification	3; Polymethylene polyphenyl	lisocyanate	
alkanes, C14-17, chloro			
IARC - classification	2B; Chlorinated paraffins		

15.2. Chemical safety assessment

No chemical safety assessment has been conducted for the mixture.

SECTION 16: Other information

Full text of any H-statements referred to under heading 3:

H220 Extremely flammable gas.

H222 Extremely flammable aerosol.

H229 Pressurised container: May burst if heated.

H280 Contains gas under pressure; may explode if heated.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

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

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

H362 May cause harm to breast-fed children.

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

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.H413 May cause long lasting harmful effects to aquatic life.

(*) INTERNAL CLASSIFICATION BY BIG

ADI Acceptable daily intake

AOEL Acceptable operator exposure level

CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

DMEL Derived Minimal Effect Level
DNEL Derived No Effect Level
EC50 Effect Concentration 50 %

ErC50 EC50 in terms of reduction of growth rate

LC50 Lethal Concentration 50 %

LD50 Lethal Dose 50 %

NOAEL No Observed Adverse Effect Level

NOEC No Observed Effect Concentration

OECD Organisation for Economic Co-operation and Development

PBT Persistent, Bioaccumulative & Toxic
PNEC Predicted No Effect Concentration
STP Sludge Treatment Process

vPvB very Persistent & very Bioaccumulative

M-factor

alkanes, C14-17, chloro	100	Acute	BIG
alkanes, C14-17, chloro	10	Chronic (NRD)	BIG

Specific concentration limits CLP

polymethylene polypheny <mark>l isocyanate</mark>	C≥0.1%	Resp. Sens. 1; H334	analogous to Annex VI
	C ≥ 5 %	Skin Irrit. 2; H315	analogous to Annex VI
	C≥5%	Eye Irrit. 2; H319	analogous to Annex VI
	C≥5%	STOT SE 3; H335	analogous to Annex VI
alkanes, C14-17, chloro	1,0 % ≤ C ≤ 20 %	Lact. H362	FEICA Position Paper
			on the classification
			and labelling of One
			Component Foam
			(OCF) containing Mid
			Chained Chlorinated
			Paraffin (MCCP) March
			7th 2014)
	1,0 % ≤ C ≤ 20 %	EUH066	FEICA Position Paper
			on the classification
			and labelling of One
			Component Foam
			(OCF) containing Mid
			Chained Chlorinated
			Paraffin (MCCP) March
			7th 2014)
	0,25 % ≤ C ≤ 20 %	Aquatic Chronic 4; H413	FEICA Position Paper
			on the classification
			and labelling of One
			Component Foam
			(OCF) containing Mid
			Chained Chlorinated
			Paraffin (MCCP) March
			7th 2014)

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