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

1.1. Product identifier

Commercial Product Name (s)	fischer FireStop Gun Foam
Product Part number (s)	43712

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

Relevant identified uses	Linear joint sealant for sealing gaps in walls, ceilings, floors, window / door joints, sills and frames.
Recommended restrictions	No uses advised against known

1.3. Details of supplier of the safety data sheet

Name of Supplier:	fischer fixings (UK) Ltd
Address of Supplier:	Whitely Road, Wallingford, Oxfordshire, OX10 9AT
Telephone:-	01491 827920
Fax:	01491 827950
Responsible Person:	Mrs Mirka Valovicova MSc (Hons) Technical Manager
E-mail:	Technical@fischer.co.uk

1.4. Emergency telephone number

Emergency Telephone number	01491 827 920 (office hours only)

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Classified as dangerous according to the criteria of Regulation (EC) 1272/2008

Class	Category	Hazard statement
Aerosol	Category 1	H222. Extremely flammable aerosol
Aerosol	Category 1	H229: Pressurized container: May burst if heated
Carc.	Category 2	H351: Suspected of causing cancer
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
Eye Irrit.	Category 2	H319: Causes serious eye irritation
STOT SE	Category 3	H335: May cause respiratory irritation
Skin Irrit.	Category 2	H315: Causes skin irritation
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

2.2 Label elements

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

GHS02 GHS07 GHS08

Signal word	Danger
Contains;-	polymethylene polyphenyl isocyanate
Hazard Statements	H222: Extremely flammable aerosol. H229: Pressurized 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 if inhaled.
Precautionary 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/sparks/open flames/hot surfaces. No smoking. P211: Do not spray on an open flame or other ignition source. P251: Pressurized container: Do not pierce or burn, even after use. P280: Wear protective gloves/protective clothing/eye protection/face protection. P405: Store locked up P410 + P412: Protect from sunlight. Do no expose to temperatures exceeding 50°C / 122°F. P501: Dispose of contents / container in accordance with local / national / international regulation.
Further 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 or 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 Contains component (s) included in the fluorinated greenhouse gases (Regulation (EU) No 517/2014).

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
dimethyl ether 01-2119472128-37	115-10-6 204-065-8	1%<C<10%	Flam. gas 1; H220 Press. Gas-Liquefied gas; H280	(1)(2)(10)	Propellant
1,1-difluoroethane 01-2119474440-43	75-37-6 200-866-1	1%<C<10%	Flam. Gas 1; H220 Press. Gas - Liquefied gas; H280	(1)(10)	Propellant
polymethylene polyphenyl isocyanate	9016-87-9	C>25%	Carc.2; H351 Acute Tox. 4; H332 STOT RE 2; H373 Eye Irrit. 2: H319 STOT SE 3; H335 Skin Irrit. 2; H315 Resp. Sens.1; H334 Skin Sens. 1; H317	(1)(2)(8) (10)	Constituent
Isobutane 01-2119485395-27	75-28-5 200-857-2	1%<C<10%	Flam. gas 1; H220 Press. Gas-Liquefied gas; H280	(1)(2)(10)	Propellant
(1,3-butadiene, conc<0.1%)					
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 01-2119486772-26		10%<C<25%	Acute Tox. 4; H302	1)(10)	Constituent
triethyl phosphate 01-2119492852-28	78-40-0 201-114-5	1%<C<10%	Acute Tox. 4; H302 Eye Irrit. 2; H319	(1)(10)	Constituent

(1) For H-statements in full: see heading 16
(2) Substances 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.

SECTION 4: First aid measures.

4.1 Description of first aid measures

General advice:

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 their 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: Contact doctor / hospital

After Inhalation:
Remove 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 eye contact:
Rinse immediately with plenty of water.
Do not apply neutralising 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 unwell.

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: No effects known

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 BC powder. Carbon dioxide, Sand / earth

5.1.2 Unsuitable extinguishing media Solid water jet ineffective as extinguishing medium..

5.2 Special hazards arising from the substance or mixture.

Special hazards arising from the substance or mixture.
On burning: release of toxic and corrosive gases / vapours (phosphorous oxides, nitrous vapours, hydrogen bromide, hydrofluoric acid, hydrogen chloride), (carbon monoxide-carbon dioxide).
Pressurised container: May burst if heated.

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: persistent 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.
Protective goggles.
Head/neck protection.
Protective clothing
Heat / fire exposure: compressed air / oxygen apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	Stop engines and no smoking. No naked flames or sparks. Spark- and explosion proof 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. Protective goggles. Head/neck protection. Protective Clothing. Suitable protective clothing- **See** heading 8.2

6.2 Environmental precautions.

Environmental precautions	Dam up the liquid spill. Use appropriate containment to avoid environmental contamination.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	Allow products 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 sections13

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.

Advice on safe handling:	Use spark-/ explosion proof appliances and lighting system. Keep away from naked flames / heat. Keep away from ignition sources / sparks. Gas / vapour heavier than air at 20°C 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 temperatures: < 50°C. Store in a cool dry area. Keep out of direct sunlight. Ventilation at floor level. Fireproof storeroom. Unauthorised persons not admitted. Meet the legal requirements. Max. storage time: 1 year (s).
7.2.2 Keep away from:	Heat sources, ignition sources.
7.2.3 Suitable packaging material:	Aerosol
7.2.4 Non-suitable packaging material:	No data available

7.3 Specific end use (s).

Specific 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 8h (Indicative occupational exposure limit value)	1000 ppm
	Time-weighted average exposure limit 8h (Indicative occupational exposure limit value)	1920mg/m^3
Belgium		
Hydrocarbures aliphatiques sous forme gazeuse: (Alcanes C1-C4)	Time-weighted average exposure limit 8h	1000 ppm
Oxyde de dimethyle	Time-weighted average exposure limit 8h	1000 ppm
	Time-weighted average exposure limit 8h	1920 mg/m^3
The Netherlands		
Dimethylether	Time-weighted average exposure limit 8h (Public occupational exposure limit value)	496 ppm
	Time-weighted average exposure limit 8h (Public occupational exposure limit value)	950 mg/m^3
	Short time value (Public occupational exposure limit value)	783 ppm
	Short time value (Public occupational exposure limit value)	1500 mg/m^3
France		
Oxyde de dimethyle	Time-weighted average exposure limit 8h (VRI: Valeur reglementaire indicative)	1000 ppm
	Time-weighted average exposure limit 8h (VRI: Valeur reglementaire indicative)	1920mg/m^3
Germany		
Dimethylether	Time-weighted average exposure limit 8h (TRGS 900)	1000 ppm
	Time-weighted average exposure limit 8h (TRGS 900)	1900 mg/m^3
Isobutan	Time-weighted average exposure limit 8h (TRGS 900)	1000 ppm
	Time-weighted average exposure limit 8h (TRGS 900)	2400 mg/m^3
pMDI (als MDI berechnet)	Time-weighted average exposure limit 8h (TRGS 900)	0.05 mg/m^3
UK		
Dimethyl ether	Time-weighted average exposure limit 8h (Workplace exposure limit (EH40/2005))	400 ppm
	Time-weighted average exposure limit 8h (Workplace exposure limit (EH40/2005))	766 mg/m^3
	Short time value (Workplace exposure limit (EH40/2005))	500 ppm
	Short time value (Workplace exposure limit (EH40/2005))	958 mg/m^3
Isocyanates, all (as-NCO) Except methyl isocyanate	Time-weighted average exposure limit 8h (Workplace exposure limit (EH40/2005))	0.02mg/m^3
	Short time value (Workplace exposure limit (EH40/2005))	0.07 mg/m^3
USA (TLV-ACGIH)		
Butane, all isomers	Short time value (TLV-Adopted Value)	1000 ppm

b) National biological limit values — If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

If applicable and available it will be listed below.

Sampling Methods		
Isocyanates	NIOSH	5521
Isocyanates	NIOSH	5522

8.1.3 Applicable limit values when using the substance or mixture as intended. — If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

DNEL/DMEL- Workers

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		
Effect level (DNEL/DMEL)	**Type**	**Value**
DNEL	Long-term systemic effects inhalation	5.82 mg/m^3
	Acute systemic effects inhalation	22.4 mg/m^3
	Long-term systemic effects dermal	2.08 mg/kg bw/day
	Acute systemic effects dermal	8mg/kg bw/day

triethyl phosphate		
Effect level (DNEL/DMEL)	**Type**	**Value**
DNEL	Long-term systemic effects inhalation	11.81 mg/m3
	Acute systemic effects inhalation	94.5 mg/m3
	Long-term systemic effects dermal	3.35 mg/kg bw/day
	Acute systemic effects dermal	26.8 mg/kg bw/day

DNEL/DMEL- General Population

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		
Effect level (DNEL/DMEL)	**Type**	**Value**
DNEL	Long-term systemic effects inhalation	1.46 mg/m^3
	Acute systemic effects inhalation	11.2 mg/m^3
	Long-term systemic effects dermal	1.04 mg/kg bw/day
	Acute systemic effects dermal	4 mg/kg bw/day
	Long-term systemic effects oral	0.52 mg/kg bw/day

triethyl phosphate		
Effect level (DNEL/DMEL)	**Type**	**Value**
DNEL	Long-term systemic effects inhalation	2.91 mg/m3
	Acute systemic effects inhalation	23.28 mg/m3
	Long-term systemic effects dermal	1.67 mg/kg bw/day
	Acute systemic effects dermal	13.36 mg/kg bw/day
	Long-term systemic effects oral	1.67 mg/kg bw/day
	Acute systemic effects oral	13.36 mg/kg bw/day

PNEC

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**
Fresh water	0.64 mg/l
Marine water	0.064 mg/l
Aqua (intermittent releases)	0.51 mg/l
STP	7.84 mg/l
Fresh water sediment	13.4 mg/kg sediment dw
Marine water sediment	1.34 mg/kg sediment dw
Soil	1.7 mg/kg soil dw
Oral	11.6 mg /kg food

triethyl phosphate		
Compartments	**Value**	**Remark**
Fresh water	0.632 mg/l	
Salt water	0.063 mg/l	
Aqua (intermittent releases)	9 mg/l	
STP	298.5 mg/l	

Fresh water sediment	5 mg/kg sediment dw	
Marine water sediment	0.5 mg/kg sediment dw	
Soil	0.64 mg/kg soil dw	

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 / explosion proof appliances and lighting system.
Keep away from ignition sources / sparks.
Keep away from naked flames / heat
Measure the concentration in the air regularly

8.2.2 Individual protection measures, such as personal protective equipment

General protective and hygiene measures: Observe very strict hygiene-avoid contact.
Do not eat, drink or smoke during work

Respiratory protection: Wear gas mask with filter type A if conc. In air> exposure limit.

Hand protection: Gloves

Materials	Breakthrough time	Thickness
LDPE (low Density Poly Ethylene)	10 minutes	0.025mm

Eye protection: Protective goggles

Skin and body protection: Head / neck protection.
Protective clothing

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	No data available
Explosive 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	No data available
Flash point	No data available
Evaporation rate	No data available
Relative vapour density	1.1
Vapour pressure	No data available
Solubility	water; insoluble
Relative density	1.1; 20°C
Decomposition temperature	No data available
Auto-ignition temperature	No data available
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with explosive properties
pH	No data available

9.2 Other Information

Absolute density	1100 kg / m^3; 20 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

May be ignited by sparks.
Gas / vapour spreads at floor level: Ignition hazard.

10.2 Chemical stability

Stable under normal conditions

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Conditions to avoid

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

10.5 Incompatible materials

Materials to avoid

No data available

10.6 Hazardous decomposition products

Hazardous decomposition products

On burning: release of toxic and corrosive gases / vapours (phosphorous oxides, nitrous vapours, hydrofluoric acid, hydrogen bromide, hydrogen chloride), (carbon monoxide-carbon dioxide).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

11.1.1 Test results

Acute Toxicity

No (test) data on the mixture available

polymethylene polyphenyl isocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination
Oral	LD50		>10000 mg/kg		Rat	Literature Study
Dermal	LD50		>5000 mg/kg		Rabbit	Literature Study
Inhalation (vapours)	LD50		10 mg/l-20 mg/l	4h	Rat	Literature Study
Inhalation			category 4			Literature Study

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 determination
Oral	LD50	EU Method B.1 tris	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

triethyl phosphate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination
Oral	LD50		1600 mg/kg		Rat	Inconclusive, insufficient data
Oral	LD50		1370 mg/kg bw		Mouse	Experimental value
Dermal	LD50		> 20000 mg/kg bw		Rabbit	Inconclusive, insufficient data
Inhalation (aerosol)	LC50	OECD 403	> 8.817 mg/l air	4 h	Rat (male/female)	Experimental value

Classification is based on relevant ingredients

Conclusion

Harmful if inhaled
Not classified as toxic in contact with skin
Not classified as acute toxic if swallowed

Corrosion / Irritation No (test) data on the mixture available

polymethylene polyphenyl isocyanate						
Route of exposure	**Result**	**Method**	**Exposure time**	**Time point**	**Species**	**Value determination**
Eye	Irritating; Category 2					Literature Study
Skin	Irritating; Category 2					Literature Study
Inhalation	Irritating; STOT SE cat.3					Literature Study

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	**Result**	**Method**	**Exposure time**	**Time point**	**Species**	**Value determination**
Eye	Not irritating	OECD 405	24 h	7 days	Rabbit	Experimental value
Skin	Not irritating	OECD 404	4 h	7 days	Rabbit	Experimental value

triethyl phosphate						
Route of exposure	**Result**	**Method**	**Exposure time**	**Time point**	**Species**	**Value determination**
Eye	Moderately irritating	OECD 405	24 h		Rabbit	Experimental value
Skin	Not irritating	OECD 404	4 h	1; 24; 48; 72; 168 hrs	Rabbit	Experimental value

Classification is based on the relevant ingredients

Conclusion

Causes skin Irritation.
Causes serious eye irritation.
May cause respiratory irritation
Specific target organ toxicity, single exposure: classified as irritant to respiratory organs

Respiratory or skin sensitisation No (test) data on the mixture available

polymethylene polyphenyl isocyanate						
Route of exposure	**Result**	**Method**	**Exposure Time**	**Observation Time Point**	**Species**	**Value determination**
Skin	Sensitising; Category 1					Literature Study
Inhalation	Sensitising; Category 1					Literature Study

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	**Result**	**Method**	**Exposure time**	**Observation time point**	**Species**	**Value determination**
Skin	Not sensitizing	OECD 429			Mouse (female)	Experimental value

triethyl phosphate						
Route of exposure	**Result**	**Method**	**Exposure time**	**Observation time point**	**Species**	**Value determination**
Skin	Not sensitizing	OECD 429			Mouse (female)	Experimental value
Inhalation						Data waiving

Classification is based on the relevant ingredients

Conclusion

May cause an allergic skin reaction.
May cause allergic or asthma symptoms or breathing difficulties if inhaled.

Specific target organ toxicity No (test) data on the mixture available

polymethylene polyphenyl isocyanate								
Route of exposure	**Parameter**	**Method**	**Value**	**Organ**	**Effect**	**Exposure time**	**Species**	**Value determination**
Inhalation			STOT Re cat.2					Literature Study

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	Organ	Effect	Exposure time	Species	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 (vapours)	Dose level		0.586 mg/l air		No effect		Mouse (male)	Experimental value

triethyl phosphate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL	OECD 407	1000 mg/kg bw/day		No effect	4 weeks (daily)	Rat (male/female)	Experimental value
Dermal								Data waiving
Inhalation (aerosol)	NOAEC	Subchronic toxicity test	366 mg/m3 air		No effect	12 weeks (6h/day, 5 days/week)	Rat (male)	Inconclusive, insufficient data

Classification is based on the relevant ingredients

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)

No (test) data on the mixture available

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
Negative with metabolic activation, negative without metabolic activation	OECD 482	Rat liver cells		Experimental value
Negative without metabolic activation, positive with metabolic activation	OECD 476	Mouse (lymphoma L5178Y cells)		Experimental value

triethyl phosphate

Result	Method	Test substrate	Effect	Value determination
Negative with metabolic activation, negative without metabolic activation	OECD 476	Chinese hamster lung fibroblasts	No effect	Experimental value
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value

Mutagenicity (in vivo)

No (test) data on the mixture available

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

triethyl phosphate

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative			Mouse (male)	Bone marrow	

Carcinogenicity

No (test) data on the mixture available

polymethylene polyphenyl isocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Unknown			Category 2					Literature Study

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**	**Effect**	**Organ**	**Value determination**
Inhalation								Data waiving
Dermal								Data waiving
Oral								Data waiving

Reproductive toxicity No (test) data on the mixture available

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**	**Organ**	**Value determination**
Developmental toxicity	LOAEL	OECD 416	99 mg/kg bw/day		Rat (female)	Embryotoxicity		Experimental value
Effects on fertility	LOAEL	OECD 416	99 mg/kg bw/day		Rat (male/female)	Weight changes	Female reproductive organ	Experimental value

triethyl phosphate								
	Parameter	**Method**	**Value**	**Exposure time**	**Species**	**Effect**	**Organ**	**Value determination**
Developmental toxicity	NOAEL	OECD 414	625 mg/kg bw/day	10 day(s)	Rat	No effect	Foetus	Experimental value
Maternal toxicity	NOAEL	OECD 414	125 mg/kg bw/day	10 day(s)	Rat	No effect		Experimental value
Effects on fertility	NOEL		335 mg/kg bw/day	120 day(s) - 150 day(s)	Rat (male/female)	No effect		Inconclusive, insufficient data

Classification is based on the relevant ingredients

Conclusion CMR
Suspected of causing cancer.
Not classified for mutagenic or genotoxic toxicity
Not classified for reprotoxic or developmental toxicity.

Toxicity other effects No (test) data on the mixture available

Chronic effects from short and long-term exposure

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 No (test) data on the mixture available

polymethylene polyphenyl isocyanate								
	Parameter	**Method**	**Value**	**Duration**	**Species**	**Test design**	**Fresh / Salt water**	**Value determination**
Acute toxicity other aquatic organisms	LC50		>1000 mg/l	96h				Literature study
Toxicity aquatic micro-organisms	EC50	OECD 209	>100 mg/l		Activated sludge			Literature study

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	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	Other	56.2 mg/l	96 h	Brachydanio rerio	Static system	Fresh water	Experimental value; GLP
Acute toxicity invertebrates	LC50		131 mg/l	48 h	Daphnia magna	Static system	Fresh water	Locomotor effect
Toxicity algae and other aquatic plants	ErC50	OECD 201	82 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; GLP
Long-term toxicity aquatic invertebrates	NOEC	OECD 202	32 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; GLP
Toxicity aquatic micro- organisms	EC50	ISO 8192	784 mg/l	3 h	Activated sludge	Static system	Fresh water	Experimental value; GLP

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	Equivalent to OECD 203	> 100 mg/l	96 h	Danio rerio		Fresh water	Experimental value; Nominal concentration
Acute toxicity invertebrates	EC50	OECD 202	2705 mg/l	24 h	Daphnia magna		Fresh water	Experimental value; Nominal concentration
Toxicity algae and other aquatic plants	EC50	Other	901 mg/l	72 h	Scenedesmus subspicatus	Static system	Fresh water	Experimental value; Nominal concentration
Long-term toxicity aquatic invertebrates	NOEC	Equivalent to OECD 211	31.6 mg/l	21 day(s)	Daphnia magna		Fresh water	Experimental value; Reproduction

Judgement of the mixture is based on test data on the mixture as a whole

Conclusion Not classified as dangerous for the environment according to the criteria of Regulation (EC) No. 1272/2008

12.2 Persistence and degradability

polymethylene polyphenyl isocyanate

Biodegradation water

Method	Value	Duration	Value determination
OECD 302C: Inherent Biodegradability: Modified MITI Test (II)	<60%		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

Biodegradation water

Method	Value	Duration	Value determination
OECD 301E: Modified OECD Screening Test	14 %; GLP	28 day(s)	Experimental value

triethyl phosphate

Biodegradation water

Method	Value	Duration	Value determination
OECD 301C: Modified MITI Test (I)	0 %	28 day(s)	Experimental value
OECD 302B: Inherent Biodegradability: Zahn-Wellens/EMPA Test	97 %	28 day(s)	Experimental value

Conclusion Contains non-readily biodegradable component (s)

12.3 Bioaccumulative potential

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

polymethylene polyphenyl isocyanate

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		1		Pisces	Literature study

Log Kow

Method	Remark	Value	Temperature	Value determination
	No data available			

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	6 week(s)	Cyprinus carpio	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
EU Method A.8		2.68	30 °C	Experimental value

triethyl phosphate

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF	OECD 305	0.5 - 1.3	6 week(s)	Cyprinus carpio	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
EU Method A.8		1.11		Experimental value

Conclusion Does not contain bioaccumalative component (s)

12.4 Mobility in soil

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

Volatility (Henry's Law constant H)

Value	Method	Temperature	Remark	Value determination
0.00042 Pa.m3/mol		25 °C		Read-across

Percent distribution

Method	Fraction air	Fraction biota	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) with potential for mobility in the soil

12.5 Results of PBT and vPvB assessment Due to insufficient data no statement can be made whether the component(s) fulfil(s) the criteria of PBT and vPvB according to Annex XIII of Regulation (EC) No 1907/2006.

12.6 Other Adverse effects

Fluorinated greenhouse gases (Regulation (EU) No 517/2014) Contains components 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 /02009)

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

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

Recycle / reuse 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

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)	Rail (RID)	Inland waterways (ADN)	Sea (IMSBC / IMDG)	Air (ICAO –TI / IATA-DGR)
14.1. UN number					
UN number	1950	1950	1950	1950	1950
14.2. UN proper shipping name					
Proper shipping name	Aerosols	Aerosols	Aerosols	Aerosols	Aerosols, flammable
14.3 Transport Hazard class (es)					
Hazard Identification number		23			
Class	2	2	2	2.1	2.1
Classification code	5F	5F	5F		
14.4. Packing group					
Packing group					
Labels	2.1	2.1	2.1	2.1	2.1
14.5. Environmental hazards					
Marine pollutant				-	
Environmentally hazardous substance mark	no	no	no	no	no
14.6. Special precautions for user					
Special provisions	190	190	190	63	A145
Special provisions	327	327	327	190	A167
Special provisions	344	344	344	277	A802
Special provisions	625	625	625	327	
Special provisions				344	
Special provisions				959	
Limited quantities	Combination packagings: not more than 1 litre per inner packaging for liquids. A package shall not weigh more than 30kg (gross mass).				30 kg G

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

Annex II of MARPOL 73/78	Not Applicable

SECTION 15: Regulatory Information

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

EU legislation: Voc content directive 2010/75/EU

VOC content	Remark
18%	
198 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.

National legislation Belgium No data available

National legislation; The Netherlands

Waste Identification (the Netherlands)	LWCA (the Netherlands): KGA category 06
Waterbezwaarlijkheid	9

National legislation France No data available

National legislation Germany

WGK	1; Classification water polluting based on the components in compliance with Verwaltungsvorschrift wassergefahrdender Stoffe (VwVwS) of 27 July 2005 (Anhang 4)

polymethylene polyphenyl isocyanate

TRGS905 - Krebserzeugend	3
TRGS905 - Erbgutverandernd	-
TRGS905 - Fruchtbarkeitsgefahrdend	-
TRGS905 - Fruchtschadigend	-
TA-Luft	5.2.5; I
TRGS900 - Risiko der Fruchtschadigung	Y; Risiko der Fruchtschadigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes nicht befurchtet zu werden
Sensibilisierende Stoffe	Sa; Atemwegssensibilisierende Stoffe
Hautresorptive Stoffe	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

triethyl phosphate

TA-Luft	5.2.5

National legislation United Kingdom No data available

Polymethylene polyphenyl isocyanate

Skin Sensitisation	Sen
Respiratory Sensitisation	Sen

Other relevant data No data available

Polymethylene polyphenyl isocyanate

IARC - classification	3; Polymethylene polyphenyl isocyanate

15.2 Chemical Safety Assessment No chemical safety assessment is required

SECTION 16: Other Information

Full text of any H-statements referred to under headings 2 and 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.
H373 May cause damage to organs through prolonged or repeated exposure if inhaled.

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

Specific concentration limits CLP

polymethylene polyphenyl isocyanate	C ≥ 5 %	Eye Irrit. 2;H319	analogous to Annex VI
	C ≥ 5 %	Skin Irrit. 2;H315	analogous to Annex VI
	C ≥ 0.1 %	Resp Sens 1;H334	analogous to Annex VI
	C ≥ 5 %	STOT SE 3;H335	analogous to Annex VI

This information is provided in accordance with the current status of our knowledge and experience. The Safety Data Sheet describes products with a view to relevant safety requirements. This information does not constitute a warranty of properties, features or qualities.