SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2020/878

FOAMTACK

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

1.1. Product identifier

Product name : FOAMTACK
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

Sealing compound

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

TEC7*
Industrielaan 5B
B-2250 Olen
☎ +32 14 85 97 37
🖷 +32 14 85 97 38
info@tec7.be
*TEC7 is a registered trademark of Novatech International N.V.

Manufacturer of the product

Novatech International N.V.
Industrielaan 5B
B-2250 Olen
☎ +32 14 85 97 37
🖷 +32 14 85 97 38
info@novatech.be

1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch) :
+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	category 1	H229: Pressurised container: May burst if heated.
Carc.	category 2	H351: Suspected of causing cancer.
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	H302: Harmful if swallowed.
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.

2.2. Label elements

Contains: 4,4'-methylenediphenyl diisocyanate, isomers and homologues; reaction products of phosphoryl trichloride and 2-methyloxirane; Glycerol, propoxylated.

Signal word Danger

H-statements

H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.

H351	Suspected of causing cancer.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H302	Harmful if swallowed.
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.

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

EUH204 Contains isocyanates. May produce an allergic reaction.

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

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

2.3. Other hazards

Gas/vapour spreads at floor level: ignition hazard
Caution! Substance is absorbed through the skin

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	M-factors and ATE
4,4'-methylenediphenyl diisocyanate, isomers and homologues	9016-87-9	40% ≤C<60%	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 Resp. Sens. 1; H334: C≥0.1%, (analogous to Annex VI) Skin Irrit. 2; H315: C≥5%, (analogous to Annex VI) Eye Irrit. 2; H319: C≥5%, (analogous to Annex VI) STOT SE 3; H335: C≥5%, (analogous to Annex VI)	(1)(2)(10)	Constituent	
reaction products of phosphoryl trichloride and 2-methyloxirane 01-2119486772-26	1244733-77-4	10% ≤C<20%	Acute Tox. 4; H302 Aquatic Chronic 3; H412	(1)(10)	Constituent	
Glycerol, propoxylated	25791-96-2 500-044-5	10% ≤C<20%	Acute Tox. 4; H302	(1)	Constituent	
dimethyl ether 01-2119472128-37	115-10-6 204-065-8	5%≤C<10%	Flam. Gas 1A; H220 Press. Gas - Liquefied gas; H280	(1)(2)(10)	Propellant	
isobutane 01-2119485395-27	75-28-5 200-857-2	5%≤C<10%	Flam. Gas 1A; H220 Press. Gas - Liquefied gas; H280	(1)(2)(10)(21)	Propellant	
propane 01-2119486944-21	74-98-6 200-827-9	1%≤C<2.5%	Flam. Gas 1A; H220 Press. Gas - Liquefied gas; H280	(1)(2)(10)	Propellant	

(1) For H- and EUH-statements in full: see section 16
(2) Substance with a Community workplace exposure limit
(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006
(21) 1,3-butadiene <0.1%

SECTION 4: First aid measures

4.1. Description of first aid measures

General:
Observe (own) safety. If possible, approach victim and check vital functions. In case of injury and/or intoxication, call the European emergency number 112. Treat symptoms starting with most life-threatening injuries and disorders. Keep victim under observation, possibility of delayed symptoms.

After inhalation:
Remove victim into fresh air. In case of respiratory problems, consult a doctor/medical service.

After skin contact:
If possible, wipe up/dry remove chemical. Then rinse/shower immediately with (lukewarm) water. If irritation persists, consult a doctor/medical service.

After eye contact:
Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, consult a doctor/medical service.

After ingestion:
Rinse mouth with water. Immediately consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.

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

4.2.1 Acute symptoms

After inhalation:
Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Headache. Nausea. Dizziness. Vomiting.

After skin contact:
Tingling/irritation of the skin.

After eye contact:
Irritation of the eye tissue.

After ingestion:
Dry/sore throat. Abdominal pain. Nausea. Vomiting.

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.

Major fire: Adapt extinguishing media to the environment for surrounding fires.

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 (phosphorus oxides, nitrous vapours, hydrogen chloride, carbon monoxide - carbon dioxide). Pressurised container: May burst if heated. 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: self-contained breathing 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. Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

6.1.1 Protective equipment for non-emergency personnel
See section 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 section 8.2

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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 section 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. Take precautions against electrostatic charges. 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 temperature: < 50 °C. Meet the legal requirements. Store in a cool area. Keep container in a well-ventilated place. Keep out of direct sunlight. Fireproof storeroom. Max. storage time: 1 year(s).

7.2.2 Keep away from:

Heat sources, ignition sources, (strong) acids.

7.2.3 Suitable packaging material:

Aerosol.

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

Butane, tous isomères: iso-butane	Short time value	980 ppm
	Short time value	2370 mg/m³
Hydrocarbures aliphatiques sous forme gazeuse: (Alcanes C1-C3)	Time-weighted average exposure limit 8 h	1000 ppm
Oxyde de diméthyle	Time-weighted average exposure limit 8 h	
	Time-weighted average exposure limit 8 h	1920 mg/m³

The Netherlands

Dimethylether	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	495 ppm
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	950 mg/m³
	Short time value (Public occupational exposure limit value)	781 ppm
	Short time value (Public occupational exposure limit value)	1500 mg/m³

France

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

Germany

Dimethylether	Time-weighted average exposure limit 8 h (TRGS 900)	1000 ppm **(1)**
	Time-weighted average exposure limit 8 h (TRGS 900)	1900 mg/m³ **(1)**
Isobutan	Time-weighted average exposure limit 8 h (TRGS 900)	1000 ppm **(2)**
	Time-weighted average exposure limit 8 h (TRGS 900)	2400 mg/m³ **(2)**
pMDI (als MDI berechnet)	Time-weighted average exposure limit 8 h (TRGS 900)	0.05 mg/m³ **(3)**
	Der Arbeitsplatzgrenzwert gilt in der Regel nur für die Monomeren. Zur Beurteilung von Oligomeren oder Polymeren siehe TRGS 430 „Isocyanate“	
Propan	Time-weighted average exposure limit 8 h (TRGS 900)	1000 ppm **(2)**
	Time-weighted average exposure limit 8 h (TRGS 900)	1800 mg/m³ **(2)**

(1) UF: 8 (II)
(2) UF: 4 (II)
(3) Einatembare Fraktion; UF: 1 (I) =2=

Austria

Butan (beide Isomeren): n-Butan (R 600) Isobutan (R 600a)	Tagesmittelwert (MAK)	800 ppm
	Tagesmittelwert (MAK)	1900 mg/m³
	Kurzzeitwert 60(Mow) 3x (MAK)	1600 ppm
	Kurzzeitwert 60(Mow) 3x (MAK)	3800 mg/m³
Dimethylether	Tagesmittelwert (MAK)	1000 ppm
	Tagesmittelwert (MAK)	1910 mg/m³
	Kurzzeitwert 60(Mow) 3x (MAK)	2000 ppm
	Kurzzeitwert 60(Mow) 3x (MAK)	3820 mg/m³
Propan (R 290)	Tagesmittelwert (MAK)	1000 ppm
	Tagesmittelwert (MAK)	1800 mg/m³
	Kurzzeitwert 60(Mow) 3x (MAK)	2000 ppm
	Kurzzeitwert 60(Mow) 3x (MAK)	3600 mg/m³

UK

Dimethyl ether	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	400 ppm
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	766 mg/m³
	Short time value (Workplace exposure limit (EH40/2005))	500 ppm
	Short time value (Workplace exposure limit (EH40/2005))	958 mg/m³
Isocyanates, all (as -NCO) Except methyl isocyanate	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	0.02 mg/m³
	Short time value (Workplace exposure limit (EH40/2005))	0.07 mg/m³

USA (TLV-ACGIH)

Butane, isomers	Short time value (TLV - Adopted Value)	1000 ppm
	Explosion hazard	
Propane	*See Appendix F: Minimal Oxygen Content; Simple asphyxiant, Explosion hazard*	

b) National biological limit values

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

UK

Isocyanates (applies to HDI, IPDI, TDI and MDI) (isocyanate-derived diamine)	Urine: at the end of the period of exposure	1 µmol/mol creatinine	

8.1.2 Sampling methods

Product name	Test	Number
Isocyanates	NIOSH	5521
Isocyanates	NIOSH	5522
Polymeric 4-4'-Methylene Diisocyanate	OSHA	5002

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 Threshold values

DNEL/DMEL - Workers

reaction products of phosphoryl trichloride and 2-methyloxirane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	8.2 mg/m³	
	Acute systemic effects inhalation	22.6 mg/m³	
	Long-term systemic effects dermal	2.91 mg/kg bw/day	

DNEL/DMEL - General population

reaction products of phosphoryl trichloride and 2-methyloxirane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	1.45 mg/m³	
	Acute systemic effects inhalation	5.6 mg/m³	
	Long-term systemic effects dermal	1.04 mg/kg bw/day	
	Long-term systemic effects oral	0.52 mg/kg bw/day	
	Acute systemic effects oral	2 mg/kg bw/day	

PNEC

reaction products of phosphoryl trichloride and 2-methyloxirane

Compartments	Value	Remark
Fresh water	0.32 mg/l	
Marine water	0.032 mg/l	
Fresh water (intermittent releases)	0.51 mg/l	
STP	19.1 mg/l	
Fresh water sediment	11.5 mg/kg sediment dw	
Marine water sediment	1.15 mg/kg sediment dw	
Soil	0.34 mg/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. Take precautions against electrostatic charges. 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).

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 sections 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical form	Foam aerosol
Colour	Orange
Odour	No data available on odour
Odour threshold	No data available in the literature
Melting point	Not applicable (aerosol)
Boiling point	-12 °C ; Propellant
Flammability	Extremely flammable aerosol.
Explosion limits	No data available in the literature
Flash point	Not applicable (aerosol)
Auto-ignition temperature	Not applicable (aerosol)
Decomposition temperature	No data available in the literature
pH	Not applicable (non-soluble in water)
Kinematic viscosity	Not applicable (aerosol)
Dynamic viscosity	Not applicable (aerosol)
Solubility	Water ; insoluble
Log Kow	Not applicable (mixture)
Vapour pressure	< 3000 hPa ; 50 °C
Absolute density	1019 kg/m³ ; 20 °C ; Liquid
Relative density	1.02 ; 20 °C ; Liquid
Relative vapour density	> 1
Particle size	Not applicable (aerosol)

9.2. Other information

No data available

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

Precautionary measures

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks.

10.5. Incompatible materials

(strong) acids.

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

11.1.1 Test results

Acute toxicity

FOAMTACK

No (test)data on the mixture available

Classification is based on the relevant ingredients

4,4'-methylenediphenyl diisocyanate, isomers and homologues

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		> 2000 mg/kg			Literature study	
Dermal	LD50		> 2000 mg/kg			Literature study	
Inhalation (vapours)	LC50		11 mg/l	4 h		Literature study	

reaction products of phosphoryl trichloride and 2-methyloxirane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
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	

Glycerol, propoxylated

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral			category 4			Literature study	

Conclusion

Harmful if swallowed.

Not classified as acute toxic in contact with skin

Not classified as acute toxic if inhaled

Corrosion/irritation

FOAMTACK

No (test)data on the mixture available

Classification is based on the relevant ingredients

4,4'-methylenediphenyl diisocyanate, isomers and homologues

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	

reaction products of phosphoryl trichloride and 2-methyloxirane

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405	24 h	24; 48; 72 hours	Rabbit	Experimental value	Single treatment with rinsing
Skin	Not irritating	OECD 404	4 h	24; 48; 72 hours	Rabbit	Experimental value	

Conclusion

Causes skin irritation.
Causes serious eye irritation.
May cause respiratory irritation.

Respiratory or skin sensitisation

FOAMTACK

No (test)data on the mixture available
Classification is based on the relevant ingredients
4,4'-methylenediphenyl diisocyanate, isomers and homologues

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing; category 1					Literature study	
Inhalation	Sensitizing; category 1					Literature study	

reaction products of phosphoryl trichloride and 2-methyloxirane

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Dermal (on the ears)	Not sensitizing	OECD 429			Mouse (female)	Experimental value	

Conclusion

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

Specific target organ toxicity

FOAMTACK

No (test)data on the mixture available
Classification is based on the relevant ingredients
4,4'-methylenediphenyl diisocyanate, isomers and homologues

Route of exposure	Parameter	Method	Value	Organ/Effect	Exposure time	Species	Value determination	Remark
Inhalation			STOT RE cat.2				Literature study	

reaction products of phosphoryl trichloride and 2-methyloxirane

Route of exposure	Parameter	Method	Value	Organ/Effect	Exposure time	Species	Value determination	Remark
Oral (diet)	NOAEL	Subchronic toxicity test	171 mg/kg bw/day	No effect	13 weeks (daily)	Rat (female)	Experimental value	
Oral (diet)	Dose level	Subchronic toxicity test	52 mg/kg bw/day	Liver (enlargement /affection of the liver)	13 weeks (daily)	Rat (male)	Experimental value	

Conclusion

May cause damage to organs through prolonged or repeated exposure if inhaled.
Not classified as sub-chronically toxic if swallowed
Not classified as sub-chronically toxic in contact with skin

Mutagenicity (in vitro)

FOAMTACK

No (test)data on the mixture available
Judgement is based on the relevant ingredients
reaction products of phosphoryl trichloride and 2-methyloxirane

Result	Method	Test substrate	Effect	Value determination	Remark
Negative without metabolic activation, positive with metabolic activation	OECD 476	Mouse (lymphoma L5178Y cells)		Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S. typhimurium and E. coli)		Experimental value	

Mutagenicity (in vivo)

FOAMTACK

No (test)data on the mixture available

Judgement is based on the relevant ingredients

reaction products of phosphoryl trichloride and 2-methyloxirane

Result	Method	Exposure time	Test substrate	Organ/Effect	Value determination	Remark
Negative (Oral (stomach tube))			Rat (male)	No effect	Experimental value	Single treatment

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

FOAMTACK

No (test)data on the mixture available

Classification is based on the relevant ingredients

4,4'-methylenediphenyl diisocyanate, isomers and homologues

Route of exposure	Parameter	Method	Value	Organ/Effect	Exposure time	Species	Value determination	Remark
Inhalation			category 2				Literature study	
Dermal			category 2				Literature study	
Oral			category 2				Literature study	

Conclusion

Suspected of causing cancer.

Reproductive toxicity

FOAMTACK

No (test)data on the mixture available

Judgement is based on the relevant ingredients

reaction products of phosphoryl trichloride and 2-methyloxirane

Category	Parameter	Method	Value	Exposure time	Species	Effect	Value determination	Remark
Developmental toxicity (Oral (stomach tube))	NOAEL	OECD 414	500 mg/kg bw/day	23 days (gestation, daily)	Rabbit	Foetus (no effect)	Experimental value	
Maternal toxicity (Oral (stomach tube))	NOAEL	OECD 414	500 mg/kg bw/day	23 days (gestation, daily)	Rabbit	No effect	Experimental value	
Effects on fertility (Oral (diet))	LOAEL	OECD 416	99 mg/kg bw/day		Rat (male / female)	Reproductive performance	Experimental value	

Conclusion

Not classified for reprotoxic or developmental toxicity

Aspiration hazard

FOAMTACK

Judgement is based on the relevant ingredients

Not classified for aspiration toxicity

Toxicity other effects

FOAMTACK

No (test)data on the mixture available

Chronic effects from short and long-term exposure

FOAMTACK

Skin rash/inflammation. Respiratory difficulties.

11.2. Information on other hazards

No evidence of endocrine disrupting properties

SECTION 12: Ecological information

12.1. Toxicity

FOAMTACK

No (test)data on the mixture available

Judgement of the mixture is based on the relevant ingredients

reaction products of phosphoryl trichloride and 2-methyloxirane

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		56 mg/l	96 h	Danio rerio	Static system	Fresh water	Experimental value; Nominal concentration
Acute toxicity crustacea	LC50		131 mg/l	48 h	Daphnia magna	Static system	Fresh water	Nominal concentration
Toxicity algae and other aquatic plants	ErC50	OECD 201	82 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Nominal concentration
	NOEC	OECD 201	13 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Growth rate
Long-term toxicity aquatic crustacea	NOEC	OECD 202	32 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; GLP

Conclusion

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

12.2. Persistence and degradability

reaction products of phosphoryl trichloride and 2-methyloxirane

Biodegradation water

Method	Value	Duration	Value determination
EU Method C.4-D	14 %; GLP	28 day(s)	Experimental value

Glycerol, propoxylated

Biodegradation water

Method	Value	Duration	Value determination
OECD 301B	38 % - 41 %; GLP	28 day(s)	Experimental value

Conclusion

Water

Contains non readily biodegradable component(s)

12.3. Bioaccumulative potential

FOAMTACK

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

4,4'-methylenediphenyl diisocyanate, isomers and homologues

BCF other aquatic organisms

Parameter	Method	Value	Duration	Species	Value determination
BCF	BCFBAF v3.01	268.1 l/kg; Fresh weight			Estimated value

Log Kow

Method	Remark	Value	Temperature	Value determination
KOWWIN		10.46		Estimated value

reaction products of phosphoryl trichloride and 2-methyloxirane

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		2.7	30 °C	Experimental value

Conclusion

Does not contain bioaccumulative component(s)

12.4. Mobility in soil

4,4'-methylenediphenyl diisocyanate, isomers and homologues

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	9.078 - 10.597	Calculated value

reaction products of phosphoryl trichloride and 2-methyloxirane

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	3.2	QSAR

Conclusion

Contains component(s) that adsorb(s) into 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.

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties

12.7. Other adverse effects

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Greenhouse gases

Contains component(s) included in the list of substances which may contribute to the greenhouse effect (IPCC)

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)

Groundwater

Groundwater pollutant

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).
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. Dispose of at authorized waste collection point.

13.1.3 Packaging/Container

European Union

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

Proper shipping name	aerosols

14.3. Transport hazard class(es)

Hazard identification number	
Class	2
Classification code	5F

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
Special provisions	344
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

UN number	1950

14.2. UN proper shipping name

Proper shipping name	aerosols

14.3. Transport hazard class(es)

Hazard identification number	23
Class	2
Classification code	5F

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
Special provisions	344
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).

Inland waterways (ADN)

14.1. UN number/ID number

UN number/ID number	1950

14.2. UN proper shipping name

Proper shipping name	aerosols

14.3. Transport hazard class(es)

Class	2
Classification code	5F

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
Special provisions	344
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).

Sea (IMDG/IMSBC)

14.1. UN number

UN number	1950

14.2. UN proper shipping name

Proper shipping name	aerosols

14.3. Transport hazard class(es)

Class	2.1

14.4. Packing group

Packing group	
Labels	2.1

14.5. Environmental hazards

Marine pollutant	-
Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	190
Special provisions	277
Special provisions	327
Special provisions	344
Special provisions	381
Special provisions	63
Special provisions	959
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).

14.7. Maritime transport in bulk according to IMO instruments

Annex II of MARPOL 73/78	Not applicable

Air (ICAO-TI/IATA-DGR)

14.1. UN number/ID number

UN number/ID number	1950

14.2. UN proper shipping name

Proper shipping name	aerosols, flammable

14.3. Transport hazard class(es)

Class	2.1

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	A145
Special provisions	A167
Special provisions	A802

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
11 % - 22.5 %	
112 g/l - 229 g/l	

Directive 2012/18/EU (Seveso III)

Threshold values under normal circumstances

Substance or category	Low tier (tonnes)	Top tier (tonnes)	Group	For this substance or mixture the summation rule has to be applied for:
P3b FLAMMABLE AEROSOLS	5000 (net)	50000 (net)	None	Flammability

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.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
· 4,4'-methylenediphenyl diisocyanate, isomers and homologues · reaction products of phosphoryl trichloride and 2-methyloxirane	Liquid substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: (a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F; (b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10; (c) hazard class 4.1; (d) hazard class 5.1.	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, 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, — present an aspiration hazard and are labelled with H304, 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN). 5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met: a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: “Keep lamps filled with this liquid out of the reach of children”; and, by 1 December 2010, “Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life- threatening lung damage”; b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: “Just a sip of grill lighter may lead to life threatening lung damage”; c) lamp oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
· 4,4'-methylenediphenyl diisocyanate, isomers and homologues	Diisocyanates, O = C=N-R-N = C=O, with R an aliphatic or aromatic hydrocarbon unit of unspecified length	1. Shall not be used as substances on their own, as a constituent in other substances or in mixtures for industrial and professional use(s) after 24 August 2023, unless: (a) the concentration of diisocyanates individually and in combination is less than 0,1 % by weight, or (b) the employer or self-employed ensures that industrial or professional user(s) have successfully completed training on the safe use of diisocyanates prior to the use of the substance(s) or mixture(s). 2. Shall not be placed on the market as substances on their own, as a constituent in other substances or in mixtures for industrial and professional use(s) after 24 February 2022, unless: (a) the concentration of diisocyanates individually and in combination is less than 0,1 % by weight, or (b) the supplier ensures that the recipient of the substance(s) or mixture(s) is provided with information on the requirements referred to in point (b) of paragraph 1 and the following statement is placed on the packaging, in a manner that is visibly distinct from the rest of the label information: “As from 24 August 2023 adequate training is required before industrial or professional use”. 3. For the purpose of this entry “industrial and professional user(s)” means any worker or self-employed worker handling diisocyanates on their own, as a constituent in other substances or in mixtures for industrial and professional use(s) or supervising these tasks. 4. The training referred to in point (b) of paragraph 1 shall include the instructions for the control of dermal and inhalation exposure to diisocyanates at the workplace without

		prejudice to any national occupational exposure limit value or other appropriate risk management measures at national level. Such training shall be conducted by an expert on occupational safety and health with competence acquired by relevant vocational training. That training shall cover as a minimum: (a) the training elements in point (a) of paragraph 5 for all industrial and professional use(s). (b) the training elements in points (a) and (b) of paragraph 5 for the following uses: — handling open mixtures at ambient temperature (including foam tunnels); — spraying in a ventilated booth; — application by roller; — application by brush; — application by dipping and pouring; — mechanical post treatment (e.g. cutting) of not fully cured articles which are not warm anymore; — cleaning and waste; — any other uses with similar exposure through the dermal and/or inhalation route; (c) the training elements in points (a), (b) and (c) of paragraph 5 for the following uses: — handling incompletely cured articles (e.g. freshly cured, still warm); — foundry applications; — maintenance and repair that needs access to equipment; — open handling of warm or hot formulations (> 45 °C); — spraying in open air, with limited or only natural ventilation (includes large industry working halls) and spraying with high energy (e.g. foams, elastomers); — and any other uses with similar exposure through the dermal and/or inhalation route. 5. Training elements: (a) general training, including on-line training, on: — chemistry of diisocyanates; — toxicity hazards (including acute toxicity); — exposure to diisocyanates; — occupational exposure limit values; — how sensitisation can develop; — odour as indication of hazard; — importance of volatility for risk; — viscosity, temperature, and molecular weight of diisocyanates; — personal hygiene; — personal protective equipment needed, including practical instructions for its correct use and its limitations; — risk of dermal contact and inhalation exposure; — risk in relation to application process used; — skin and inhalation protection scheme; — ventilation; — cleaning, leakages, maintenance; — discarding empty packaging; — protection of bystanders; — identification of critical handling stages; — specific national code systems (if applicable); — behaviour-based safety; — certification or documented proof that training has been successfully completed (b) intermediate level training, including on-line training, on: — additional behaviour-based aspects; — maintenance; — management of change; — evaluation of existing safety instructions; — risk in relation to application process used; — certification or documented proof that training has been successfully completed (c) advanced training, including on-line training, on: — any additional certification needed for the specific uses covered; — spraying outside a spraying booth; — open handling of hot or warm formulations (> 45 °C); — certification or documented proof that training has been successfully completed 6. The training shall comply with the provisions set by the Member State in which the industrial or professional user(s) operate. Member States may implement or continue to apply their own national requirements for the use of the substance(s) or mixture(s), as long as the minimum requirements set out in paragraphs 4 and 5 are met. 7. The supplier referred to in point (b) of paragraph 2 shall ensure that the recipient is provided with training material and courses pursuant to paragraphs 4 and 5 in the official language(s) of the Member State(s) where the substance(s) or mixture(s) are supplied. The training shall take into consideration the specificity of the products supplied, including composition, packaging, and design. 8. The employer or self-employed shall document the successful completion of the training referred to in paragraphs 4 and 5. The training shall be renewed at least every five years. 9. Member States shall include in their reports pursuant to Article 117(1) the following information: (a) any established training requirements and other risk management measures related to the industrial and professional uses of diisocyanates foreseen in national law; (b) the number of cases of reported and recognised occupational asthma and occupational respiratory and dermal diseases in relation to diisocyanates; (c) national exposure limits for diisocyanates, if there are any; (d) information about enforcement activities related to this restriction. 10. This restriction shall apply without prejudice to other Union legislation on the protection of safety and health of workers at the workplace.

National legislation Belgium
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No data available

National legislation The Netherlands

FOAMTACK

Waterbezwaarlijkheid	A (4); Algemene Beoordelingsmethodiek (ABM)

National legislation France

FOAMTACK

No data available

National legislation Germany

FOAMTACK

Lagerklasse (TRGS510)	2B: Aerosolpackungen und Feuerzeuge
WGK	2; Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017

4,4'-methylenediphenyl diisocyanate, isomers and homologues

TA-Luft	5.2.5/I
TRGS900 - Risiko der Fruchtschädigung	pMDI (als MDI berechnet); Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes nicht befürchtet zu werden
TRGS905 - Krebserzeugend	Techn. ("Polymeres") MDI (pMDI) (in Form atembarer Aerosole, A-Fraktion); 2
TRGS905 - Erbgutverändernd	Techn. ("Polymeres") MDI (pMDI) (in Form atembarer Aerosole, A-Fraktion); -
TRGS905 - Fruchtbarkeitsgefährdend	Techn. ("Polymeres") MDI (pMDI) (in Form atembarer Aerosole, A-Fraktion); -
TRGS905 - Fruchtschädigend	Techn. ("Polymeres") MDI (pMDI) (in Form atembarer Aerosole, A-Fraktion); -
Hautresorptive Stoffe	pMDI (als MDI berechnet); H; Hautresorptiv

reaction products of phosphoryl trichloride and 2-methyloxirane

TA-Luft	5.2.5

National legislation Austria

FOAMTACK

No data available

National legislation United Kingdom

FOAMTACK

No data available

4,4'-methylenediphenyl diisocyanate, isomers and homologues

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

Other relevant data

FOAMTACK

No data available

4,4'-methylenediphenyl diisocyanate, isomers and homologues

IARC - classification	3; Polymethylene polyphenyl isocyanate

15.2. Chemical safety assessment

No chemical safety assessment is required for a mixture.

SECTION 16: Other information

Full text of any H- and EUH-statements referred to under section 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.
H412 Harmful to aquatic life with long lasting effects.
EUH204 Contains isocyanates. May produce an allergic reaction.

(*)	INTERNAL CLASSIFICATION BY BIG
ADI	Acceptable daily intake
AOEL	Acceptable operator exposure level
ATE	Acute Toxicity Estimate
BCF	Bioconcentration Factor
BEI	Biological Exposure Indices
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)
DMEL	Derived Minimal Effect Level
DNEL	Derived No Effect Level

EC10	Effect Concentration 10 %
EC50	Effect Concentration 50 %
ErC50	EC50 in terms of reduction of growth rate
GLP	Good Laboratory Practice
LC0	Lethal Concentration 0 %
LC50	Lethal Concentration 50 %
LD50	Lethal Dose 50 %
LOAEC/LOAEL	Lowest Observed Adverse Effect Concentration/Lowest Observed Adverse Effect Level
NOAEC/NOAEL	No Observed Adverse Effect Concentration/No Observed Adverse Effect Level
NOEC/NOEL	No Observed Effect Concentration/No Observed Effect Level
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

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