RALMONT®
Dichtungssysteme

Safety data sheet

According to Regulation (EC) No. 1907/2006, as amended by Regulation (EU) No. 2015/830

Date of creation: 2005-04-27
Revision date: 2019-08-24

RALMO-ZACK 400/550 2K

Section 1: Name of the substance or mixture and the company

1.1 Product identifier:

Trade name:	RALMO-ZACK 400/550 2K
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

Adhesive
Sealant
Polyurethane

1.2.2 Uses, to be avoided

No known uses advised against

1.3 Details of the supplier who provides the safety data sheet:

Company name:	Ralmont GmbH
Street:	Pavelsbacher Straße 17
City:	D-92361 Berngau
Telephone:	+49 (0)9181 5120240 · Telefax:+ 49 (0)9181 5120241
E-Mail:	info@ralmont.de · Contact Person: Mr. Thomas Eckstein
Internet:	http://www.ralmont.de

1.4 Emergency number: Poison Center Bonn, 24 hours, Tel. +49 (0) 228-19240

Section 2: Hazard Identification

2.1 Classification of the substance or mixture:

Class	Category	Hazard warnings
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.
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.
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: polymethylene polyphenyl isocyanate.
Signal word: Danger

H-Wording

H222	Extremely flammable aerosols.
H229	Pressurized container: May burst if heated.
H315	Causes skin irritation.
H317	Can cause allergic reactions to your skin.
H319	Causes serious eye irritation.
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.

P-Wording

P101	If medical advice is needed, have container or label ready.
P102	Keep out of the reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Do not smoke.
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 and do not expose to temperatures exceeding 50 ° C / 122 ° F.
P501	Dispose of contents / container to in accordance with local regulations.

Additional labeling:

- The handling of this product can cause allergic reactions in people who are already sensitized to diisocyanates.
- Avoid contact, including skin contact, with the product in the event of asthma, eczematous skin diseases or skin problems.
- Do not use the product if there is insufficient ventilation or wear a protective mask with an appropriate gas filter (type A1 according to EN 14387).

2.3 Other dangers:

Gas / vapor spreads on the floor: danger of ignition

Section 3: Composition/ information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name REACH Registrationno.	CAS-No. EG-No.	Conc. (C)	Classification according to CLP	Footnote	Comment
Propane 01-2119486944-21	74-98-6 200-827-9	C 1 %	Flam. gas 1; H220 Press. gas - Liquefied Gas; H280	(1)(2)(10)	Propellant
Dimethyl ether 01-2119472128-37	115-10-6 204-065-8	C 1 %	Flam. gas 1; H220 Press. Ggs - Liquefied Gas; H280	(1)(2)(10)	Propellant
Isobutane 01-2119485395-27	75-28-5 200-857-2	C 1 %	Flam. gas 1; H220 Press. gas - Liquefied Gas; H280	(1)(2)(10)(21)	Propellant
Ethanediol 01-2119456816-28	107-21-1 203-473-3	1%<C<10%	Acute Tox. 4; H302 STOT RE 2; H373	(1)(2)(6)(10)	Component

Name REACH Registrationno.	CAS-No. EG-No.	Conc. (C)	Classification according to CLP	Footnote	Comment
Reaction product of Tris(2-chlorpropyl)phosphate und Tris(2-chlor-1-methylethyl) phosphate und phosphoric acid, Bis(2-chlor-1-methylethyl) 2- chlorpropyl ester und phosphoric acid, 2-chlor-1- methylethyl bis(2-chlorpropyl)ester 01-2119486772-26		10%<C<20%	Acute Tox. 4; H302	(1)(10)	Component
polymethylene polyphenyl isocyanate	9016-87-9	25%<C<50%	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

(1) For the full wording of the H-phrases: see point 16
(2) Substance for which a Community limit value for exposure at the workplace applies
(6) Listed in Annex VI of Regulation (EC) No. 1272/2008 but the classification was adjusted after evaluating the available experimental data
(8) Specific concentration limit values, see point 16
(10) Subject to the restrictions in Annex XVII of Regulation (EC) No. 1907/2006
(18) Polymethylene polyphenyl isocyanate, contains 0.1% MDI isomers
(21) 1,3-butadiene <0.1%

(V) Exempt from registration under REACH (Regulation (EC) No. 1907/2006, Article 2 (9), Polymers)

Section 4: First aid measures

4.1. Description of first aid measures:

General information:
Monitor the vital functions. Unconscious victim: keep airways clear. If breathing has stopped: artificial respiration / addition of oxygen. If cardiac arrest: perform resuscitation. If you are conscious and have difficulty breathing: half-sitting position. In case of shock, it is recommended: body flat, legs raised. If vomiting: Prevent suffocation / aspiration pneumonia. Protect against heat loss (cover, do not warm up). Constantly watch the victim. Provide psychological support. Keep victim calm, avoid exertion. Depending on the condition: to the doctor / hospital.

After inhalation:
Move victim to fresh air. Breathing difficulties: consult a doctor / medical service.

After skin contact:
Rinse immediately with plenty of water. Do not use any (chemical) neutralizing agents without prior medical advice.
Consult a doctor if irritation persists.

After eye contact:
Rinse immediately with plenty of water. Remove any existing contact lenses if possible. Continue rinsing.
Do not use any (chemical) neutralizing agents without prior medical advice.

After swallowing:
Rinse mouth with water. Do not use any (chemical) neutralizing agents without prior medical advice.
If you feel unwell: consult a doctor / medical service.

4.2 Important acute symptoms and delayed symptoms:
4.2.1 Acute symptoms after inhalation:
THE FOLLOWING SYMPTOMS MAY APPEAR LATER: Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Difficulty breathing. To cough. Dry throat / sore throat. Pulmonary edema possible. Inflammation of the airways possible. Runny nose.

After skin contact:
Tingling / irritation of the skin.

After eye contact:
Eye tissue irritation. Lacrimation.

After swallowing:

4.2.2 Delayed symptoms:
No known effects.

4.3 Indication of any immediate medical attention and special treatment needed:
If applicable and available, this is indicated below.

Section 5: Firefighting measures

5.1 Extinguishing media:
5.1.1 Suitable extinguishing media:
Small fire: fast-acting ABC extinguishing powder, fast-acting BC extinguishing powder.

5.1.2 Unsuitable extinguishing media:
Small fire: fast-acting CO2 extinguisher, water (water can be used to control the jet flame), foam. Large fire: water (water can be used to control the jet flame), foam.

5.2 Special hazards arising from the substance or mixture:
On burning: release of toxic and corrosive gases / vapors (phosphorus oxide, nitrous gases). Container is under pressure: Can with Burst warming. Can polymerize when the temperature rises. On heating: formation of toxic / combustible gases / vapors (Hydrogen cyanide).

5.3 Advice for firefighting:
5.3.1 Measures:
Cool closed containers with water if exposed to fire. Physical explosion hazard: from cover cool / delete. Do not move loads that are at risk of heat. After cooling, there is still a physical risk of explosion. Dilute toxic gases with water mist. Expect poisonous / caustic rainwater.

5.3.2 Special protective equipment for fire-fighters:
Gloves. Tightly fitting protective goggles. Head / neck protection. Protective suit.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:
Turn off engines and do not smoke. No open fire and no sparks. Non-sparking and explosion-proof devices and lights.

6.1.1 Protective equipment for non-emergency personnel
See point 8.2

6.1.2 Protective equipment for emergency services
Gloves. Tightly fitting protective goggles. Head / neck protection. Protective suit.
Suitable protective clothing: See point 8.2

6.2. Environmental protection measures:
Contain released material. Avoid environmental pollution through suitable containment.

6.3. Methods and material for containment and cleaning up:
Let the product harden and remove it mechanically. Carefully collect spilled solids / residues. Clean (treat) soiled surfaces with acetone. Deliver groupage to the manufacturer / responsible body. Clean clothes and equipment after work.

6.4. Reference to other sections:
See point 13.

Section 7: Handling and storage

The information in this section is a general description. If applicable and available, the exposure scenarios are included in the annex. You must always use exposure scenarios related to the topic that correspond to your identified uses.

7.1 Precautions for save handling:
Use spark-free / explosion-proof devices / lights. Keep away from open flames / heat sources.
Keep away from ignition sources / sparks. Gas / vapor heavier than air at 20 ° C. Follow very strict hygiene - avoid contact. Take off contaminated clothing immediately.

7.2 Conditions for safe storage taking into account incompatibilities:
7.2.1 Conditions for safe storage:
Storage temperature: <50 ° C. Keep in a cool place. Protect from direct sunlight.
Keep container in a well-ventilated place. Fireproof storage room. Entry is prohibited to unauthorized persons.
Comply with the legal requirements. Max. Storage time: 1 year (s).

7.2.2 Keep away from:
Heat sources, ignition sources, (strong) acids, (strong) bases, amines.

7.2.3 Suitable packaging material:
Pressurized gas pack.

7.2.4 Unsuitable packaging material:
No data available

7.3 Specific end uses:
If applicable and available, the exposure scenarios are included in the annex.
Follow the manufacturer's instructions.

Section 8: Exposure controls / personal protection

8.1 Parameters to be monitored:
8.1.1 Workplace exposure

a) Limits for occupational exposure:

The limit values are listed below where available and applicable.

EU

Dimethyl ether	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
Ethanediol	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	20 ppm
	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	52 mg/m³
	Short term value (Indicative occupational exposure limit value)	40 ppm
	Short term value (Indicative occupational exposure limit value)	104 mg/m³

Belgium

4,4'-diisocyanate de diphenylmethane (MDI)	Time-weighted average exposure limit 8 h	0.005 ppm
	Time-weighted average exposure limit 8 h	0.052 mg/m³
Ethylene glycol (en aerosol)	Time-weighted average exposure limit 8 h	20 ppm (M)
	Time-weighted average exposure limit 8 h	52 mg/m³ (M)
	Short term value	40 ppm (M)
	Short term value	104 mg/m³ (M)
Hydrocarbures aliphatic sous forme gazeuse: (Alcanes C1- C3)	Time-weighted average exposure limit 8 h	1000 ppm
	Short term value	980 ppm
	Short term value	2370 mg/m³
Oxides de dimethyle	Time-weighted average exposure limit 8 h	1000 ppm
	Time-weighted average exposure limit 8 h	1920 mg/m³

The indication „M" indicates that at exposure above the limit value, irritation occurs or a danger.
acute poisoning exists. The working process must be designed in such a way that the exposure never exceeds the limit value. When making measurements, the sampling period should be as short as possible in order to be able to perform reliable measurements. The result of the measurements is calculated according to the sampling period.

Germany

4,4'-Methylene diphenyl-diisocyanate	Time-weighted average exposure limit 8 h (TRGS 900)	0.05 mg/m³
Dimethyl ether	Time-weighted average exposure limit 8 h (TRGS 900)	1000 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	1900 mg/m³
Ethanediol	Time-weighted average exposure limit 8 h (TRGS 900)	10 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	26 mg/m³
Isobutane	Time-weighted average exposure limit 8 h (TRGS 900)	1000 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	2400 mg/m³
pMDI(calculated as MDI)	Time-weighted average exposure limit 8 h (TRGS 900)	0.05 mg/m³
Propane	Time-weighted average exposure limit 8 h (TRGS 900)	1000 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	1800 mg/m³

b) National biological limit values
The limit values are listed below where available and applicable.

8.1.2 Sampling method

Working substance	Test	Number
1,2-ethanediol	NIOSH	5500
Ethylene Glycol	NIOSH	5523
Ethylene Glycol	OSHA	2024
Isocyanates	NIOSH	5521
Isocyanates	NIOSH	5522

8.1.3 Applicable limit values for the intended use

The limit values are listed below where available and applicable.

8.1.4 Thresholds

DNEL/DMEL - Employee

Ethanediol

Thresholds (DNEL/DMEL)	Type	Value	Comment
DNEL	Long-term local effects, inhalation	35 mg/m³	
	Systemic long-term effects, dermal	106 mg/kg bw/day	

Reaction product 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

Thresholds (DNEL/DMEL)	Type	Value	Comment
DNEL	Systemische Langzeitwirkungen, Inhalation	8.2 mg/m³	
	Acute systemic effects, inhalation	22.6 mg/m³	
	Systemic long-term effects, dermal	2.91 mg/kg bw/day	

DNEL/DMEL - General population

Ethandiol

Thresholds (DNEL/DMEL)	Type	Value	Comment
DNEL	Long-term local effects, inhalation	7 mg/m³	
	Systemic long-term effects, dermal	53 mg/kg bw/day	

Reaction product 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

PNEC

Ethanediol

Medien	Value	Comment
Fresh water	10 mg/l	
Sea water	1 mg/l	
Water (intermittent release)	10 mg/l	
Fresh water sediment	37 mg/kg sediment dw	
Sea water sediment	3.7 mg/kg sediment dw	
STP	199.5 mg/l	
Ground	1.53 mg/kg ground dw	

Reaction product 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

Media	Value	Comment
Fresh water	0.32 mg/l	
Water (intermittent release)	0.51 mg/l	
Sea water	0.032 mg/l	
STP	19.1 mg/l	
Fresh water sediment	11.5 mg/kg sediment dw	
Sea water sediment	1.15 mg/kg sediment dw	
Ground	0.34 mg/kg ground dw	
Oral	11.6 mg/kg sustenance	

8.1.5 Control banding
If applicable and available, this is indicated below.

8.2. Exposure limit and monitoring exposure:
The information in this section is a general description. If applicable and available, the exposure scenarios are included in the appendix. You must always use exposure scenarios that are related to the topic and their identified uses

8.2.1 Suitable technical control equipment
Use spark-free / explosion-proof devices / lights. Keep away from open flames / heat sources. Keep away from ignition sources / sparks. Take regular airborne concentration measurements.

8.2.2 Individual protection measures, for example personal protective equipment
Follow very strict hygiene - avoid contact. Do not eat, drink or smoke at work.

a) Respiratory protection:

Full face mask with filter type A.

b) Hand protection:
Protective gloves against chemicals (EN 374).

Material selection	Measured breakthrough time	Comment	Degree of protection
LDPE (polyethylene lower density))	> 10 minutes 0.025 mm	Class 1	

- choice of material (good protection)
LDPE (low density polyethylene).

c) Eye protection:
Tightly fitting protective goggles.

d) Skin protection:
Head / neck protection. Protective suit.

8.2.3 Limitation and monitoring of the environmental exposition:
See points 6.2, 6.3 and 13

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Form of appearance	Foam aerosol
Odor Characteristic	Odor
Odor threshold	No data available (test not performed)
Color Product	Color depends on the composition
Particle size	No data available (test not performed)
Explosion limits	No data available (test not carried out)
Flammability	Extremely flammable aerosol.
Log Kow	Not applicable (mixture)
Dynamic viscosity	No data available (test not performed)
Kinematic viscosity	No data available (test not performed)
Melting point	No data available (test not performed)
Boiling point	No data available (test not carried out)
Evaporation rate	No data available (test not performed)
Relative vapor density	> 1
Vapor pressure	No data available (test not carried out)
Solubility	Water; insoluble
	Organic solvents ; soluble
Relative density	0.948
Decomposition temperature	No data available (test not performed)
Auto-ignition temperature	No data available (test not performed)
Flash point	Not applicable (aerosol)
Explosion hazard	Not a chemical group associated with explosive properties
Oxidising properties	Not a chemical group associated with oxidising properties
pH	No data available (test not performed)

9.2 Additional information:

Absolute density: 948 kg/m^3

Section 10: Stability and reactivity

10.1 Reactivity:

Possible ignition by sparks. Gas / vapor spreads on the floor: danger of ignition.

10.2 Chemical stability:

Not stable when exposed to heat.

10.3 Possibility of hazardous reactions:

Can 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-free / explosion-proof devices / lights. Keep away from open flames / heat sources. Keep away from ignition sources / sparks.

10.5 Incompatible materials:
(strong) acids, (strong) bases, amines.

10.6 Hazardous decomposition products:
On heating: formation of toxic / combustible gases / vapors (hydrogen cyanide). On burning: release of toxic and corrosive gases / vapors (phosphorus oxide, nitrous gases).

Section 11: Toxicological information

11.1 Information on toxicological effects:
11.1.1 Testing results

Acute toxicity:
RALMO-ZACK 400/550 2K
No (experimental) data on the mixture available, assessment is based on the relevant ingredients

Ethanediol

Route of exposure	Parameter	Method	Value	Exposure time	Species	Valuation	Comment
Oral			Category 4			Annex VI	
Oral	LD50	BASF internal standards	7712 mg/kg bw		Rat (male/ female)	Experimental value	
Dermal	LD50	Developmental Toxicity Study	> 3500 mg/kg bw		Mouse (male/ female)	Experimental value	
Inhalation (Fog)	LC50	Teratogenicity testing	> 2.5 mg/l air	6 hrs	Rat (male/ female)	Experimental value	

On the basis of practical experience, this substance was classified more strictly in comparison with the test results of the test organisms used. Reaction product 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	Valuation	Comment
Oral	LD50	EU Method B.1	632 mg/kg bw		Rat (male/ female)	Experimental value	
Dermal	LD50	OECD 402	> 2000 mg/kg bw	24 hrs	Rat (male/ female)	Experimental value	
Inhalation (Aerosol)	LC50	OECD 403	> 7 mg/l	4 Stdn	Rat (male/ female)	Experimental value	

polymethylene polyphenyl isocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Valuation	Comment
Oral	LD50		> 10000 mg/kg		Rat	Literature study	
Dermal	LD50		> 5000 mg/kg		Rabbit	Literature study	
Inhalation (Vapors)	LC50		11 mg/l	4 Stdn		Literature study	

Conclusion
Nicht für akute Toxizität eingestuft

Irritation and etch effects on the skin
RALMO-ZACK 400/550 2K
No (experimental) data on the mixture available, assessment is based on the relevant ingredients

Ethandiol

Route of exposure	Result	Method	Exposure time	Timing	Species	Valuation	Comment
Eye	No irritant effect	BASF internal standards		1; 24 hrs	Rabbit	Experimental value	
Skin	No irritant effect	BASF internal standards		8 hrs	Rabbit	Experimental value	

Reaction product 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	Timing	Species	Valuation	Comment
Eye	No irritant effect	OECD 405	24 hrs	24; 48; 72 hrs	Rabbit	Experimental value	
Skin	No irritant effect	OECD 404	4 hrs	24; 48; 72 hrs	Rabbit	Experimental value	

polymethylene polyphenyl isocyanate

Route of exposure	Result	Method	Exposure time	Timing	Species	Valuation	Comment
Eye	Irritant effect; Category 2					Literature study	
Skin	Irritant effect; Category 2					Literature study	
Inhalation	Irritant effect; STOT SE Kat.3					Literature study	

Conclusion
Causes skin irritation.

Causes serious eye irritation.
May cause respiratory irritation.

Sensitization of the respiratory system and skin
RALMO-ZACK 400/550 2K
No (experimental) data on the mixture available, assessment is based on the relevant ingredients

Ethanediol

Route of exposure	Result	Method	Exposure time	Observation time	Species	Valuation	Comment
Skin	Not sensitizing	Guinea Pig Maximization Test			Guinea pig (female)	Experimental value	

Reaction product 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	Species	Valuation	Comment
Skin	Not sensitizing	OECD 429			Mouse (female)	Experimental value	

polymethylene polyphenyl isocyanate

Route of exposure	Result	Method	Exposure time	Observation time	Species	Valuation	Comment
Skin	Sensitizing; Category 1					Literature study	
Inhalation	Sensitizing; Category 1					Literature study	

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

Specific target organ toxicity
RALMO-ZACK 400/550 2K
No (experimental) data on the mixture available, assessment is based on the relevant ingredients

Ethanediol

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Valuation
Oral (Diet)	NOEL	Equivalent to OECD 408	150 mg/kg bw/day	Kidney	No effect	16 weeks (daily)	Rat (male)	Experimental value
Oral (Diet)	Dose level	Equivalent to OECD 408	500 mg/kg bw/day	Kidney	Histopathological changes	16 weeks (daily)	Rat (male)	Experimental value
Dermal	NOAEL	OECD 410	> 2200 mg/kg bw		No effect	4 weeks (daily, 5 days / week)	Dog (male)	Experimental value

Reaction product 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	Valuation
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 changes	13 weeks (daily)	Rat (male)	Experimental value
Inhalation	Dose level		0.586 mg/l air		No effect		Mouse (male)	Experimental value

polymethylene polyphenyl isocyanate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Valuation
Inhalation			STOT RE Kat.2					Literature study

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

Germ cell mutagenicity (in vitro)
RALMO-ZACK 400/550 2K
No (experimental) data on the mixture available, assessment is based on the relevant ingredients

Ethanediol

Result	Method	Testsubstrat	Effect	Valuation	Comment
Negative	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	

Reaction product 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	Testsubstrat	Effect	Valuation	Comment
Negative with metabolic activation, negative without metabolic activation	OECD 482	Ratliver cells		Experimental value	
Negative without metabolic activation, positive with metabolic activation	OECD 476	Mouse (Lymphoma cells-L5178Y)		Experimental value	

Conclusion
Not classified for mutagenic toxicity or genotoxicity

Germ cell mutagenicity (in vivo)
RALMO-ZACK 400/550 2K
No (experimental) data on the mixture available, assessment is based on the relevant ingredients

Ethanediol

Result	Method	Exposure time	Test substrate	Organ	Valuation
Negative	Chromosome aberration test		Rat (male/female)		Experimental value

Reaction product 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	Valuation
Negative	OECD 474		Mouse (male/female)	Bone marrow	Experimental value

Conclusion
Not classified for mutagenic toxicity or genotoxicity

Carcinogenicity
RALMO-ZACK 400/550 2K
No (experimental) data on the mixture available, assessment is based on the relevant ingredients

Ethanediol

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Valuation
Oral	NOAEL	Carcinogenic toxicity study	1000 mg/kg bw/day	24 months	Rat (male/female)			Experimental value

Reaction product 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	Valuation
Unknown								Data waiver

polymethylene polyphenyl isocyanate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Valuation
Unknown			Category 2					Literature study

Conclusion
Suspected of causing cancer.

Reproduction toxicity:
RALMO-ZACK 400/550 2K
No (experimental) data on the mixture available, assessment is based on the relevant ingredients

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Valuation
Developmental toxicity	NOAEC	Developmental Toxicity Study	150 mg/m3 air	6 days (gestation, daily) - 15 days (gestation, daily)	Rat	No effect		Experimental value
Effects on fertility	NOAEL	Three generation test	> 1000 mg/kg bw/day		Rat (male/female)	No effect		Experimental value

Reaction product 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	Valuation
Developmental Toxicity (Oral (feeding tube))	NOAEL	OECD 414	500 mg/kg bw/day	21 day(s)	Rabbit	No effect		Experimental value
Maternal Toxicity (Oral (feeding tube))	NOAEL	OECD 414	500 mg/kg bw/day	21 day(s)	Rabbit	No effect		Experimental value
Effects on Fertility (Oral (Diet))	LOAEL	OECD 416	99 mg/kg bw/day		Rat (male/female)	Weight changes	Female reproductive organ	Experimental value

Conclusion
Not classified for reproductive or developmental toxicity

Toxicity of other effects
RALMO-ZACK 400/550 2K
No (experimental) data on the mixture available

Chronic effects from short and long-term exposure
RALMO-ZACK 400/550 2K
Rash / inflammation. Difficulty breathing. To cough. Dry skin. Feeling weak. Inflammation of the airways possible. Itch. May create spots on the skin.

ABSCHNITT 12: Umweltbezogene Angaben

12.1 Toxicity:
RALMO-ZACK 400/550 2K
No (experimental) data on the mixture available, assessment is based on the relevant ingredients

Ethanediol

	Parameter	Method	Value	Duration	Species	Test plan	Fresh-/Salt-water	Valuation
Acute toxicity to fish	LC50	EPA 600/4-90/027	72860 mg/l	96 hrs	Pimephales promelas	static system	Fresh water	Experimental value
Acute toxicity crustaceans	EC50	OECD 202	> 100 mg/l	48 hrs	Daphnia magna	static system	Fresh water	Experimental value
Toxicity to algae and other aquatic plants	EC50	EPA 600/9-78-018	6500 mg/l -13000 mg/l	96 hrs	Pseudo-kirchnerie lla subcapitata			Experimental value; Growth rate
Chronic toxicity to fish	NOEC	EPA 600/4-90/027	15380 mg/l	7 day(s)	Pimephales promelas			Experimental value
Chronic toxicity of aquatic crustaceans	NOEC	EPA 600/4-90/027	8590 mg/l	7 day(s)	Ceriodaphnia sp.		Fresh water	Experimental value
Toxicity of aquatic microorganisms	EC20	ISO 8192	> 1995 mg/l	30 minutes	Activated sludge	static system	Fresh water	Read-across
	EC5	DIN 38412-8	> 10000 mg/l	16 hrs	Pseudomonas putida			Experimental value

Reaction product 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 plan	Fresh-/Salt-water	Valuation
Acute toxicity to fish	LC50	other	56.2 mg/l	96 hrs	Brachydanio rerio	static system	Fresh water	Experimental value; GLP
Acute toxicity crustaceans	LC50		131 mg/l	48 hrs	Daphnia magna	static system	Fresh water	Experimental value; progression
Toxicity to algae and other aquatic plants	ErC50	OECD 201	82 mg/l	72 hrs	Pseudo-kirchnerie lla subcapitata	static system	Fresh water	Experimental value; GLP
Chronic toxicity to fish								Data waiver
Chronic toxicity of aquatic crustaceans	NOEC	OECD 202	32 mg/l	21 day(s)	Daphnia magna	semi-static system	Fresh water	Experimental value; GLP
Toxicity of aquatic microorganisms	EC50	ISO 8192	784 mg/l	3 hrs	Activated sludge	static system	Fresh water	Experimental value GLP

polymethylene polyphenyl isocyanate

	Parameter	Method	Value	Duration	Species	Test plan	Fresh-/Salt-water	Valuation
Acute toxicity to other aquatic organisms	LC50		> 1000 mg/l	96 hrs				Literature study
Toxicity of aquatic microorganisms	EC50	OECD 209	> 100 mg/l		Activated sludge			Literature study

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

12.2 Persistence and degradability:
Ethanediol
Biological degradability water

Method	Value	Duration	Valuation
OECD 301A: DOC Die-Away test	90 % - 100 %	10 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH radicals	Valuation
SRC AOP v1.92	46.3 day(s)	500000 /cm³	Calculation value

Reaction product 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
Biological degradability water

Method	Value	Duration	Valuation
OECD 301E: modified OECD screening-test	14 %; GLP	28 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH radicals	Valuation
AOPWIN v1.92	8.6 hrs	500000 /cm3	Calculation value

Half-life water (t1 / 2 water)

Method	Value	Primary mining / mineralization	Valuation
EU Method C.7	> 1 year(s)	Primary degradation	Experimental value

polymethylene polyphenyl isocyanate
Biological degradability water

Method	Value	Duration	Valuation
OECD 302C	< 60 %		Experimental value

Conclusion
Contains components difficult to degrade

12.3. Bio accumulative potential
RALMO-ZACK 400/550 2K
Log Kow

Method	Comment	Value	Temperature	Valuation
	Not applicable (mixture)			

Ethanediol
Log Kow

Method	Comment	Value	Temperature	Valuation
		-1.36		Calculated

Reaction product 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 Fische

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

Log Kow

Method	Comment	Value	Temperature	Valuation
EU Method A.8		2.68	30 °C	Experimental value

polymethylene polyphenyl isocyanate
BCF Fische

Parameter	Method	Value	Duration	Species	Valuation
BCF		1		Pisces	Literature study

Log Kow

Method	Comment	Value	Temperature	Valuation
	No data available			

Conclusion
Based on the available numerical values, no clear conclusion can be drawn

12.4. Mobility in soil:
Ethanediol
(log) Koc

Parameter	Method	Value	Valuation
log Koc	SRC PCKOCWIN v1.66	0	Calculation value

Volatility (Henry's constant H)

Value	Method	Temperature	Comment	Valuation
0.1327 Pa.m3/mol	SRC HENRYWIN v3.10	25 °C		Calculation value

Percentage distribution

Methode	Fraktion air	Fraktion biota	Fraktion sediment	Fraktion soil	Fraktion water	Valuation
Others	0.03 %		0 %	0 %	100 %	Calculation value

Reaction product 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	Valuation
log Koc	EU Method C.19	2.76	Experimental value

Percentage distribution

Method	Fraktion air	Fraktion biota	Fraktion sediment	Fraktion soil	Fraktion water	Valuation
Mackay Level I	0.01 %	0 %	3.55 %	3.52 %	92.89 %	Read-across

Conclusion
Contains component (s) with potential for mobility in soil

12.5 Results of PBT- and vPvB-assessment:
Due to insufficient information, no statement can be made as to whether the component (s) meet or fulfill the criteria for PBT and vPvB according to Annex XIII of Regulation (EC) No. 1907/2006.

12.6 Other harmful effects:
RALMO-ZACK 400/550 2K
Fluorinated greenhouse gases (Regulation (EU) No. 517/2014)
None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No. 517/2014).
Ozone Depletion Potential (ODP) (ODP)
Not classified as dangerous for the ozone layer (Regulation (EC) No. 1005/2009)

Ethanediol
Groundwasser
Hazardous to groundwater

polymethylene polyphenyl isocyanate
Fluorinated greenhouse gases (Regulation (EU) No. 517/2014)
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, the exposure scenarios are included in the annex. You must always use exposure scenarios related to the topic that correspond to your identified uses.

13.1 Waste treatment methods:
13.1.1 Waste regulations
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 code (Directive 2008/98 / EC, Decision 2000/0532 / EC).
08 05 01 * (waste not listed under 08: isocyanate waste).
16 05 04 * (gases in pressure containers and used chemicals: gases in pressure containers (including halons) containing dangerous substances).
Other waste codes may apply depending on the industry and production process.

13.1.2 Disposal information
Specific waste recycling. Dispose of waste in compliance with local and / or national regulations. Hazardous waste should not be mixed with other waste. Different types of hazardous waste should not be mixed if this could result in pollution or lead to problems with the further processing of the waste. Hazardous waste must be handled responsibly. All facilities that store, transport or handle hazardous waste must take the necessary measures to avoid the risk of contamination or harm to people or animals. Do not discharge into drains or the environment. Deliver to an approved hazardous waste collection point.

13.1.3 Packaging European Union
Waste code container (Directive 2008/98 / EC).
15 01 10 * (packaging containing residues of or contaminated by dangerous substances).

ABSCHNITT 14: Angaben zum Transport

Street (ADR)

14.1. UN-Number

UN-Number	1950

14.2 UN proper shipping name:

UN proper shipping name:	Pressurized gas packs

14.3	**Transport hazard classes:**	
	Number to identify the hazard	
	Class	2
	Classification code	5F
14.4	**Packing group:**	
	Packing group	
	Danger label	2.1
14.5	**Environmental hazards:**	
	Label for environmentally hazardous substances	No
14.6	**Special precautions for users:**	
	Special regulations	190
	Special regulations	327
	Special regulations	344
	Special regulations	625
	Limited quantities	Combined packaging: up to 1 liter per inner packaging for liquids. A package must not weigh more than 30 kg. (Gross weight)

Train (RID)

14.1.	**UN-Number**	
	UN-Number	1950
14.2.	**UN proper shipping name:**	
	UN proper shipping name:	Pressurized gas packs
14.3.	**Transport hazard classes:**	
	Number to identify the hazard	23
	Class	2
	Classification code	5F
14.4.	**Packaging group**	
	Packaging group	
	Danger label	2.1
14.5.	**Enviromental hazards**	
	Label for environmentally hazardous substances	No
14.6	**Special precautions for users:**	
	Special regulations	190
	Special regulations	327
	Special regulations	344
	Special regulations	625
	Limited quantities	Combined packaging: up to 1 liter per inner packaging for liquids. A package must not weigh more than 30 kg. (Gross weight)

Binnenwasserstraßen (ADN)

14.1.	**UN-Number**	
	UN-Nummer	1950
14.2.	**UN proper shipping name:**	
	UN proper shipping name:	Pressurized gas packs
14.3.	**Transport hazard classes:**	
	Number to identify the hazard	
	Class	2
	Classification code	5F
14.4.	**Packaging group**	
	Packaging group	
	Danger label	2.1
14.5.	**Enviromental hazards**	
	Label for environmentally hazardous substances	No

14.6 Special precautions for users:

Special regulations	190
Special regulations	327
Special regulations	344
Special regulations	625
Limited quantities	Combined packaging: up to 1 liter per inner packaging for liquids. A package must not weigh more than 30 kg. (Gross weight)

Sea (IMDG/IMSBC)

14.1. UN-Number

UN-Nummer	1950

14.2. UN proper shipping name:

UN proper shipping name:	Aerosols

14.3. Transport hazard classes:

Number to identify the hazard	
Class	2.1

14.4. Packaging group

Packaging group	
Danger label	2.1

14.5. Enviromental hazards

Marine pollutant	–
Label for environmentally hazardous substances	No

14.6 Special precautions for users:

Special regulations	190
Special regulations	277
Special regulations	327
Special regulations	344
Special regulations	381
Special regulations	63
Special regulations	959
Limited quantities	Combined packaging: up to 1 liter per inner packaging for liquids. A package must not weigh more than 30 kg. (Gross weight)

14.7. Transport in bulk according to Annex II of MARPOL73 / 78 and the IBC Code

Annex II of MARPOL 73/78 — Not applicable

Air (ICAO-TI/IATA-DGR)

14.1. UN-Number

UN-Nummer	1950

14.2. UN proper shipping name:

UN proper shipping name:	Aerosols, flammable

14.3. Transport hazard classes:

Class	2.1

14.4. Packaging group

Packaging group	
Danger label	2.1

14.5. Enviromental hazards

Label for environmentally hazardous substances	No

14.6 Special precautions for users:

Special regulations	A145
Special regulations	A167
Special regulations	A802

Passenger and cargo plane

Limited quantities: maximum total quantity per package 30 kg

ABSCHNITT 15: Rechtsvorschriften

15.1 Safety, health and enviromental regulations/legislation specific for the substance or mixture:

European legislation:
FOV content directive 2010/75 / EU

FOV content:	Comment
21.40 % - 22.42 %	
202.88 g/l - 212.51 g/l	

Indicative occupational exposure limit values (Directive 98/24 / EC, 2000/39 / EC and 2009/161 / EU)

Working substance	Skin absorption
Ethanediol	Skin

REACH Annex XVII - Restriction
Contains component (s) that are subject to the restrictions in 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.

	Name of the substance, the groups of substances or the preparations	Conditions of restriction
• Ethanediol • Reaction product 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 • polymethylene polyphenyliso-cyanate	Liquid substances or mixtures that meet the criteria for one of the following hazard classes or categories set out in Annex I of 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 Impairment of sexual function and fertility as well as development, 3.8 excluding narcotic effects, 3.9 and 3.10; c) hazard class 4.1; d) Hazard class 5.1.	1. Must not be used - in decorative objects that are intended to create light or color effects (through phase changes), e.g. in mood lamps and ashtrays; - in joke games; - in games for one or more participants or in products intended for use as such, including for decoration. 2. Products that do not comply with paragraph 1 may not be placed on the market. 3. May not be placed on the market if they contain a dye and / or a perfume, except for tax reasons - they can be used as a fuel in decorative oil lamps intended for distribution to the general public, and - their aspiration is classified as dangerous and they are marked with H304. 4. Decorative oil lamps intended for sale to the general public may not be placed on the market unless they comply with the European standard for decorative oil lamps (EN 14059) adopted by the European Committee for Standardization (CEN). 5. Without prejudice to the implementation of other Community provisions on the classification, packaging and labeling of dangerous substances and mixtures, the suppliers ensure that the following requirements are met before they are placed on the market: a) Lamp oils marked with H304 and intended for sale to the general public have the following inscriptions clearly visible, legible and indelible: „Lamps filled with this liquid must be kept out of the reach of children“ and, from December 1, 2010, „Already a small sip of lamp oil - or even just sucking on a lamp wick - can lead to life-threatening damage to the lungs ". b) From December 1, 2010, liquid grill lighters marked with H304 and intended for distribution to the general public will be legibly and indelibly marked as follows: „Even a small sip of grill lighter can lead to life-threatening damage to the lungs“. c) Lamp oils and grill lighters marked with H304 and intended for distribution to the general public will be packed in black, opaque containers with a maximum capacity of 1 liter from December 1, 2010. 6. By 1 June 2014 at the latest, the Commission requests the European Chemicals Agency to prepare a dossier in accordance with Article 69 of this Regulation, so that, if necessary, a ban on liquid grill lighters and fuels for decorative lamps marked with H304 and intended for distribution to the general public can be adopted . 7. Natural or legal persons who place lamp oils and liquid grill lighters marked with H304 on the market for the first time shall submit data on alternatives to lamp oils and liquid grill lighters to the competent authority of the Member State concerned by 1 December 2011 and annually thereafter. The Member States shall make these data available to the Commission.

• polymethylene polyphenyl isocyanate	Methylenediphenyl diisocyanate (MDI) including the following specific isomers: 4,4'-methylenediphenyl diisocyanate (MDI); 2,4'-methylenediphenyl diisocyanate (MDI); 2,2'-methylenediphenyl diisocyanate (MDI)	1. May not be placed on the market for sale to the general public in mixtures containing this substance in a concentration of ≥ 0.1% by weight MDI after December 27, 2010; unless the supplier guarantees that the packaging will be used before it is placed on the market a) contains protective gloves that meet the requirements of Council Directive 89/686 / EEC; b) without prejudice to other Community legislation on the classification, labeling and packaging of substances and mixtures is clearly visible, legible and indelible with the following inscription: - The handling of this product can cause allergic reactions in people who are already sensitized to diisocyanates. - Avoid contact, including skin contact, with the product in the event of asthma, eczematous skin diseases or skin problems. - Do not use the product if there is insufficient ventilation or wear a protective mask with an appropriate gas filter (type A1 according to EN 14387).' 2. Paragraph 1 letter a does not apply to hot melt adhesives.

National legislation Belgium

RALMO-ZACK 400/550 2K

No data available

Ethanediol

Skin absorption	Ethylene glycol (aerosol); D; "D" means that absorption of the agent, via the skin, mucous membranes or eyes, constitutes an important part of the total exposure. This resorption can be done both by direct contact and by the presence of the agent in the air.

National legislation Germany

RALMO-ZACK 400/550 2K

WGK	1; Ordinance on systems for handling substances hazardous to water (AwSV) - April 18, 2017

Ethandiol

TA-Air	5.2.5
TRGS900 - Risk of Fruit damage	Ethanediol; Y; Risk of fruit damage if the occupational exposure limit and the biological limit value not to be feared Skin resorptive substances ethanediol; H; Skin resorptive

Reaction product 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 -chlorpropyl) ester

TA-Air	5.2.5

polymethylenpolyphenylisocyanat

TA-Luft	5.2.5/I
TRGS900 - Risk of Fruit damage,	4,4'-methylenediphenyl diisocyanate; Y; Risk of fetal damage when adhering to the occupational exposure limit values and the biological limit value are not to be feared pMDI (calculated as MDI); Y; Risk of fruit damage need not be feared if the occupational exposure limit and the biological limit value are observed
Sensitizing substances	4,4'-methylenediphenyl diisocyanate; Saw; Respiratory sensitizing substances and skin sensitizing substances, causing allergies in both target organs pMDI (calculated as MDI); Sa; Respiratory sensitizing substances
TRGS905 - Carcinogenic	Techn. ("Polymeres") MDI (pMDI) (in the form of breathable aerosols, A fraction); 2
TRGS905 - Heritage-Modifying	Techn. („Polymer") MDI (pMDI) (in the form of breathable aerosols, A-fraction); -
TRGS905 - Fertile-Hazardous to health	Techn. („Polymers") MDI (pMDI) (in the form of breathable aerosols, A fraction); -
TRGS905 - Fruit-harmful	Techn. („polymer") MDI (pMDI) (in the form of breathable aerosols, A-fraction); - Skin resorptive substances 4,4'-methylenediphenyl diisocyanate; H; Skin resorptive pMDI (calculated as MDI); H; Skin resorptive

15.2 Chemical safety assessment:

No chemical safety assessment was carried out for this mixture.

Section 16: Other information

Complete wording of all H-statements listed under point 3:

H220 Extremely flammable gas.
H222 Extremely flammable aerosols.
H229 Pressurized container: May burst if heated.
H280 Contains gas under pressure; can explode if heated.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 Can cause allergic reactions to your skin.
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.
H373 May cause damage to organs through prolonged or repeated exposure if inhaled.

(*)	SELF-CLASSIFICATION OF BIG
ADI	Acceptable daily intake
AOEL	Acceptable operator exposure level
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europa)
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, Bioakkumulierbar & Toxisch
PNEC	Predicted No Effect Concentration
STP	Sludge Treatment Process
vPvB	Very Persistent & very Bioaccumulative+

Specific concentration limits CLP

polymethylene polyphenyl isocyanate	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

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(The data on the dangerous ingredients were taken from the most recent safety data sheet of the upstream supplier.)