SAFETY DATA SHEET

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



NOVA POWER GRIP 403 2-K prepolymer

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

1.1. Product identifier

Product name Registration number REACH Product type REACH : NOVA POWER GRIP 403 2-K prepolymer

: Not applicable (mixture) : Mixture

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

1.2.1 Relevant identified uses Adhesive

Adhesive

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

Novatio* Industrielaan 5B B-2250 Olen **2** +32 14 25 76 40 **4** +32 14 22 02 66 info@novatio.be *NOVATIO is a registered trademark of Novatech International N.V.

Manufacturer of the product

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 Hazard statements Category 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 H332: Harmful if inhaled. STOT RE H373: May cause damage to organs (respiratory system) through prolonged or repeated exposure if inhaled. category 2 Skin Irrit category 2 H315: Causes skin irritation.

> H319: Causes serious eye irritation. H335: May cause respiratory irritation.

STOT SE

Eye Irrit



category 2

category 3

Contains: polymethylene polyphenyl isocyanate; 4,4'-methylenediphenyl diisocyanate, oligomers; isocyanic acid, polymethylenepolyphenylene ester, polymer with alpha-hydro-omega-hydroxypoly[oxy(methyl-1,2-ethanediyl)]; 4,4'-methylenediphenyl diisocyanate; 4,4'-methylenediphenyl diisocyanate, oligomeric reaction products with alpha-hydro-omega-hydroxypoly(oxy-1,2-ethanediyl); reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate; isocyanic acid, polymethylenpolyphenylene ester, polymer with alpha, alpha, alpha-1,2,3-propanetriyltris[omega-hydroxypoly[oxy(methyl-1,2-ethanediyl)]]; 4,4'-methylenediphenyl diisocyanate, oligomeric reaction products with glycerol, propoxylated.

Signal word H-statements	Danger	
Created by: Brandweerinformatiece Technische Schoolstraat 43 A, B-24 http://www.big.be © BIG vzw	entrum voor gevaarlijke stoffen vzw (BIG) 40 Geel	Publication date: 2006-02-02 Date of revision: 2019-04-15
Reason for revision: 2; 3; 5; 15		
Revision number: 0402		Product number: 32189

134-16239-648-en

H351	Suspected of causing cancer.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H373	May cause damage to organs (respiratory system) through prolonged or repeated exposure if inhaled.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
P-statements	
P280	Wear protective gloves, protective clothing and eye protection/face protection.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.

2.3. Other hazards

No other hazards known

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
polymethylene polyphenyl isocyanate	9016-87-9	15%≤C<20%	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)(V)	Constituent
4,4'-methylenediphenyl diisocyanate, oligomers 01-2119457013-49	25686-28-6 500-040-3	10%≤C<15%	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	(10)	Constituent
socyanic acid, polymethylenepolyphenylene ester, oolymer with alpha-hydro-omega-hydroxypoly[oxy (methyl-1,2-ethanediyl)]	53862-89-8	10%≤C<15%	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)(10)	Constituent
4,4'-methylenediphenyl diisocyanate 01-2119457014-47	101-68-8 202-966-0	10%≤C<15%	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)	Constituent
4,4'-methylenediphenyl diisocyanate, oligomeric reaction products with alpha-hydro-omega- hydroxypoly(oxy-1,2-ethanediyl)	9048-57-1 500-028-8	5%≤C<10%	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)	Constituent

Reason for revision: 2; 3; 5; 15

Publication date: 2006-02-02 Date of revision: 2019-04-15

reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate 01-2119457015-45		5%≤C<10%	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)(10)	Constituent
isocyanic acid, polymethylenpolyphenylene ester, polymer with alpha, alpha, alpha-1,2,3- propanetriyltris[omega-hydroxypoly[oxy(methyl- 1,2-ethanediyl)]]	57029-46-6	3%≤C<5%	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)(8)	Constituent
4,4'-methylenediphenyl diisocyanate, oligomeric reaction products with glycerol, propoxylated	52409-10-6 500-115-0	1%≤C<2.5%	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)	Constituent
Talc (Mg3H2(SiO3)4)	14807-96-6 238-877-9	5%≤C<10%		(2)	Constituent

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

(2) Substance with a Community workplace exposure limit

(8) Specific concentration limits, see heading 16

(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

(V) Exempted 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:

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

After inhalation:

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

After skin contact:

Wash immediately with lots of water. Do not apply (chemical) neutralizing agents without medical advice. Take victim to a doctor if irritation persists. After eve contact:

After eye contact:

Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply (chemical) neutralizing agents without medical advice. Take victim to an ophthalmologist if irritation persists.

After ingestion:

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Do not apply (chemical) neutralizing agents without medical advice. Consult a doctor/medical service if you feel unwell.

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

4.2.1 Acute symptoms After inhalation:

Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Headache. FOLLOWING SYMPTOMS MAY APPEAR LATER: Risk of lung oedema.

- After skin contact:
- Tingling/irritation of the skin.

After eye contact:

Irritation of the eye tissue. After ingestion:

Irritation of the gastric/intestinal mucosa. Nausea. Vomiting. Diarrhoea.

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:

Reason for revision: 2; 3; 5; 15

Publication date: 2006-02-02 Date of revision: 2019-04-15

Small fire: Quick-acting ABC powder extinguisher, Quick-acting BC powder extinguisher, Quick-acting class B foam extinguisher, Quick-acting CO2 extinguisher.

Major fire: Class B foam (not alcohol-resistant).

5.1.2 Unsuitable extinguishing media:

Small fire: Water (quick-acting extinguisher, reel); risk of puddle expansion.

Major fire: Water; risk of puddle expansion.

5.2. Special hazards arising from the substance or mixture

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide - carbon dioxide). On heating: release of toxic/combustible gases/vapours (hydrogen cyanide, isocyanates). Decomposes on exposure to water (moisture).

5.3. Advice for firefighters

5.3.1 Instructions:

If exposed to fire cool the closed containers by spraying with water. Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water.

5.3.2 Special protective equipment for fire-fighters:

Gloves. Face-shield. Protective clothing. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No naked flames.

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

6.1.2 Protective equipment for emergency responders

Gloves. Face-shield. Protective clothing. Suitable protective clothing

See heading 8.2

6.2. Environmental precautions

Contain released product. Dam up the liquid spill. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

Take up liquid spill into inert absorbent material, e.g.: sand, saw dust. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

See heading 13.

SECTION 7: Handling and storage

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

7.1. Precautions for safe handling

Keep away from naked flames/heat. Gas/vapour heavier than air at 20°C. Observe very strict hygiene - avoid contact. Remove contaminated clothing immediately. Do not discharge the waste into the drain. Keep container tightly closed.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Store in a cool area. Store in a dry area. Protect against frost. Ventilation at floor level. Keep only in the original container. Meet the legal requirements. **7.2.2 Keep away from:**

Heat sources, (strong) acids, (strong) bases, oxidizing agents, water/moisture, metals.

- 7.2.3 Suitable packaging material:
 - No data available

7.2.4 Non suitable packaging material:

Aluminium, copper, iron, zinc.

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.

Belgium

4,4'-Diisocyanate de diphénylméthane (MDI)	Time-weighted average exposure limit 8 h	0.005 ppm
	Time-weighted average exposure limit 8 h	0.052 mg/m ³
Talc (sans fibre d'amiante)	Time-weighted average exposure limit 8 h	2 mg/m³

Reason for revision: 2; 3; 5; 15

alk (respirabel)		Time-weighted av	verage exposure limit 8 h (Public occu	pational exposure 0.	25 mg/m³
· (limit value)			- 0,
rance					
,4'-Diisocyanate de diphénylmé	thane	Time-weighted av	verage exposure limit 8 h (VL: Valeur i	non 0.	01 ppm
		réglementaire ind			
		-	verage exposure limit 8 h (VL: Valeur i	non 0.	1 mg/m³
		réglementaire ind	(VL: Valeur non réglementaire indicat	ive) 0	02 ppm
			VL: Valeur non réglementaire indicat		2 mg/m ³
iermany					o= / 3
,4'-Methylendiphenyldiisocyana MDI (als MDI berechnet)	IT	×	verage exposure limit 8 h (TRGS 900) verage exposure limit 8 h (TRGS 900)		05 mg/m ³ 05 mg/m ³
		Time-weighted av		0.	
IK					
socyanates, all (as -NCO) Except	methyl isocyanate	-	verage exposure limit 8 h (Workplace	exposure limit 0.	02 mg/m³
		(EH40/2005))	Workplace expecting limit (EH40/200	NE))	07 mg/m ³
alc, respirable dust			Workplace exposure limit (EH40/200 verage exposure limit 8 h (Workplace	,,	07 mg/m ² mg/m ³
		(EH40/2005))			
ISA (TLV-ACGIH)		Time weighted			005
Aethylene bisphenyl isocyanate alc (containing no asbestos fibe			verage exposure limit 8 h (TLV - Adopt		005 ppm
1 0	1	×	verage exposure limit 8 h (TLV - Adopt	ted value) 2	mg/m³ (R,E)
R,E: Respirable fraction. The valu	le is for particulate matter	containing no aspesto	s and < 1% crystalline silica		
) National biological limit value	S				
limit values are applicable and		d below.			
Sampling methods					
roduct name		Test	Number		
,4-Methylene Bisphenyl Isocyan	ate (MDI) (Isocyanates)	NIOSH	5521		
,4'-Methylenebis(phenylisocyan	ate)	NIOSH	5525		
socyanates		NIOSH	5521		
socyanates		NIOSH	5522		
1ethylene Bisphenyl Isocyanate	- (MDI)	OSHA	18		
1ethylene Bisphenyl Isocyanate	(MDI)	OSHA	47		
1ethylene Bisphenyl Isocyanate		OSHA	33		
Applicable limit values when u	ising the substance or mivi		**		
limit values are applicable and	-				
	available these will be liste				
Threshold values	-				
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Threshold values NEL/DMEL - Workers 4'-methylenediphenyl diisocyar	available these will be liste			Remark	
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Threshold values NEL/DMEL - Workers 4'-methylenediphenyl diisocyar	available these will be liste nate, oligomers Type Long-term systemic e	d below. ffects inhalation	Value 0.05 mg/m³	Remark	
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Threshold values NEL/DMEL - Workers .4'-methylenediphenyl diisocyar Effect level (DNEL/DMEL) DNEL .4'-methylenediphenyl diisocyar Effect level (DNEL/DMEL) DNEL eaction mass of 4,4'-methylened Effect level (DNEL/DMEL) DNEL Effect level (DNEL/DMEL) Effect level (DNEL/DMEL)	available these will be listen nate, oligomers Type Long-term systemic effect Long-term local effect Acute systemic effects ini Acute local effects defined Acute local effects defined Acute local effects defined tog-term local effects ini diphenyl diisocyanate and co Type Long-term local effects ini Acute local effects ini diphenyl diisocyanate and co Type Long-term local effects ini Cong-term systemic effect Acute systemic effect	d below. ffects inhalation is inhalation ts inhalation is dermal is dermal ts inhalation alation -(p-isocyanatobenzyl) ts inhalation halation ffects inhalation is inhalation ts inhalation ts inhalation	Value 0.05 mg/m³ 0.1 mg/m³ 0.05 mg/m³ 0.05 mg/m³ 0.1 mg/m³ 50 mg/kg bw/day 28.7 mg/cm³ Value 0.05 mg/m³ 0.1 mg/m³ 2.16 mg/m³ 2.16 mg/m³ 3.6 mg/m³	Remark Remark	
Threshold values NEL/DMEL - Workers .4'-methylenediphenyl diisocyar Effect level (DNEL/DMEL) DNEL .4'-methylenediphenyl diisocyar Effect level (DNEL/DMEL) DNEL eaction mass of 4,4'-methylened Effect level (DNEL/DMEL) DNEL Effect level (DNEL/DMEL) Effect level (DNEL/DMEL)	available these will be listen hate, oligomers Type Long-term systemic effect Long-term local effect Acute systemic effect Acute local effects ini Acute local effects de hate Type Long-term local effects ini diphenyl diisocyanate and co Type Long-term local effects ini Acute local effects ini diphenyl diisocyanate and co Acute local effects ini diphenyl disocyanate and co Acute local effects ini diphenyl disocyanate and co Acute local effects ini Acute local effects ini Acute systemic effect Long-term local effects ini	d below. ffects inhalation is inhalation ts inhalation nalation is dermal ts inhalation nalation ts inhalation ts inhalation ffects inhalation is inhalation ts inhalation ffects inhalation ts inhalation halation	Value 0.05 mg/m³ 0.1 mg/m³ 0.05 mg/m³ 0.05 mg/m³ 0.1 mg/m³ 50 mg/kg bw/day 28.7 mg/cm³ Value 0.05 mg/m³ 0.1 mg/m³ 2.16 mg/m³ 2.16 mg/m³ 3.6 mg/m³ 3.6 mg/m³	Remark Remark	
Threshold values NEL/DMEL - Workers .4'-methylenediphenyl diisocyar Effect level (DNEL/DMEL) DNEL .4'-methylenediphenyl diisocyar Effect level (DNEL/DMEL) DNEL eaction mass of 4,4'-methylened Effect level (DNEL/DMEL) DNEL Effect level (DNEL/DMEL) Effect level (DNEL/DMEL)	available these will be listen nate, oligomers Type Long-term systemic effect Long-term local effect Acute systemic effects ini Acute local effects defined Acute local effects defined Acute local effects defined tog-term local effects ini diphenyl diisocyanate and co Type Long-term local effects ini Acute local effects ini diphenyl diisocyanate and co Type Long-term local effects ini Cong-term systemic effect Acute systemic effect	d below. ffects inhalation s inhalation ts inhalation nalation s dermal ts inhalation nalation -(p-isocyanatobenzyl) ts inhalation halation ffects inhalation ts inhalation ts inhalation ffects dermal	Value 0.05 mg/m³ 0.1 mg/m³ 0.05 mg/m³ 0.05 mg/m³ 0.1 mg/m³ 50 mg/kg bw/day 28.7 mg/cm³ Value 0.05 mg/m³ 0.1 mg/m³ 2.16 mg/m³ 2.16 mg/m³ 3.6 mg/m³	Remark Remark	

Effect level (DNEL/DMEL)	Type		Value	Remark
DNEL		emic effects inhalation	0.025 mg/m ³	
		effects inhalation	0.05 mg/m ³	
		l effects inhalation	0.025 mg/m ³	
	Acute local effe		0.05 mg/m ³	
		effects dermal	25 mg/kg bw/day	
	Acute local effe		17.2 mg/cm ³	
	Acute systemic		20 mg/kg bw/day	
4'-methylenediphenyl diisocyar				
Effect level (DNEL/DMEL)	Туре		Value	Remark
DNEL		l effects inhalation	0.025 mg/m ³	
		effects inhalation	0.05 mg/m ³	
action mass of 4,4'-methylened		and o-(p-isocyanatobenzyl)phe	nyl isocyanate	
Effect level (DNEL/DMEL)	Туре		Value	Remark
DNEL	Long-term loca	l effects inhalation	0.025 mg/m ³	
	Acute local effe		0.05 mg/m ³	
alc (Mg3H2(SiO3)4)			L =	•
Effect level (DNEL/DMEL)	Туре		Value	Remark
DNEL	Long-term syst	emic effects inhalation	1.08 mg/m ³	
	Acute systemic	effects inhalation	1.08 mg/m ³	
	Long-term loca	l effects inhalation	1.8 mg/m ³	
	Acute local effe	ects inhalation	1.8 mg/m ³	
	Long-term syst	emic effects dermal	21.6 mg/kg bw/day	
		l effects dermal	2.27 mg/kg bw/day	
	Long-term syst	emic effects oral	160 mg/kg bw/day	
	Acute systemic	effects oral	160 mg/kg bw/day	
4'-methylenediphenyl diisocyai Compartments	late, oligomers	Value	Remark	
Fresh water		1 mg/l		
Salt water		0.1 mg/l		
Aqua (intermittent releases)		10 mg/l		
STP		1 mg/l		
Soil		1 mg/kg soil dw		
4'-methylenediphenyl diisocyar	<u>nate</u>			
Compartments		Value	Remark	
Fresh water		1 mg/l		
Marine water		0.1 mg/l		
Aqua (intermittent releases)		10 mg/l		
STP		1 mg/l		
Soil		1 mg/kg soil dw		
action mass of 4,4'-methylened	diphenyl diisocyanate	and o-(p-isocyanatobenzyl)phe	nyl isocyanate	
Compartments		Value	Remark	
		1 mg/l		
Fresh water				
Fresh water		10 mg/l		
Fresh water Aqua (intermittent releases)				
Fresh water Aqua (intermittent releases) Marine water		10 mg/l		
Fresh water Aqua (intermittent releases) Marine water STP		10 mg/l 0.1 mg/l		
Fresh water Aqua (intermittent releases) Marine water STP Soil alc (Mg3H2(SiO3)4)		10 mg/l 0.1 mg/l 1 mg/l 1 mg/kg soil dw		
Fresh water Aqua (intermittent releases) Marine water STP Soil alc (Mg3H2(SiO3)4) Compartments		10 mg/l 0.1 mg/l 1 mg/l 1 mg/kg soil dw Value	Remark	
Fresh water Aqua (intermittent releases) Marine water STP Soil alc (Mg3H2(SiO3)4) Compartments Fresh water		10 mg/l 0.1 mg/l 1 mg/l 1 mg/kg soil dw Value 597.97 mg/l	Remark	
Fresh water Aqua (intermittent releases) Marine water STP Soil alc (Mg3H2(SiO3)4) Compartments Fresh water	ses)	10 mg/l 0.1 mg/l 1 mg/l 1 mg/kg soil dw Value	Remark	
Fresh water Aqua (intermittent releases) Marine water STP Soil alc (Mg3H2(SiO3)4) Compartments Fresh water Fresh water (intermittent relea	ses)	10 mg/l 0.1 mg/l 1 mg/l 1 mg/kg soil dw Value 597.97 mg/l	Remark	
Fresh water Aqua (intermittent releases) Marine water STP Soil alc (Mg3H2(SiO3)4) Compartments Fresh water Fresh water Fresh water Marine water	,	10 mg/l 0.1 mg/l 1 mg/l 1 mg/kg soil dw Value 597.97 mg/l 597.97 mg/l	Remark	
Fresh water Aqua (intermittent releases) Marine water STP Soil <u>lc (Mg3H2(SiO3)4)</u> Compartments Fresh water Fresh water Fresh water (intermittent relea Marine water (intermittent relea	,	10 mg/l 0.1 mg/l 1 mg/l 1 mg/kg soil dw Value 597.97 mg/l 597.97 mg/l 141.26 mg/l	Remark	
Fresh water Aqua (intermittent releases) Marine water STP Soil alc (Mg3H2(SiO3)4) Compartments Fresh water Fresh water (intermittent relea Marine water Marine water (intermittent relea Marine water sediment Marine water sediment	,	10 mg/l 0.1 mg/l 1 mg/l 1 mg/kg soil dw Value 597.97 mg/l 597.97 mg/l 141.26 mg/l 141.26 mg/l	Remark	

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

Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

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:

Reason for revision: 2; 3; 5; 15

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

b) Hand protection:

Protective gloves against che	<u>micals (EN374), Change g</u>	loves frequently.	
	Measured breakthrough time	Thickness	Protection index
nitrile rubber	> 480 minutes	> 0.5 mm	Class 6

c) Eye protection:

Face shield.

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical form	Liquid
Odour	No data available on odour
Odour threshold	No data available
Colour	Beige
Particle size	Not applicable (liquid)
Explosion limits	No data available
Flammability	Not classified as flammable
Log Kow	Not applicable (mixture)
Dynamic viscosity	20000 mPa.s ; 20 °C
Kinematic viscosity	No data available
Melting point	No data available
Boiling point	> 200 °C
Evaporation rate	< 1 ; Butyl acetate
Relative vapour density	>1
Vapour pressure	< 0.01 hPa ; 25 °C
Solubility	Water ; insoluble
Relative density	1.3
Decomposition temperature	No data available
Auto-ignition temperature	No data available
Flash point	203 °C
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
рН	No data available

9.2. Other information

Absolute density

1288 kg/m³

SECTION 10: Stability and reactivity

10.1. Reactivity

Temperature above flashpoint: higher fire/explosion hazard.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Decomposes on exposure to water (moisture).

10.4. Conditions to avoid

Precautionary measures

Keep away from naked flames/heat.

10.5. Incompatible materials

(strong) acids, (strong) bases, oxidizing agents, water/moisture, metals.

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

11.1.1 Test results

Acute toxicity

Reason for revision: 2; 3; 5; 15

Publication date: 2006-02-02 Date of revision: 2019-04-15

Revision number: 0402

NOVA POWER GRIP 403 2-K prepolymer

No (test)data on the mixture available

Classification is based on the relevant ingredients polymethylene polyphenyl isocyanate

Route of exposu		Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		> 10000 mg/kg		Rat	Literature study	
Dermal	LD50		> 5000 mg/kg		Rabbit	Literature study	
Inhalation (vapo	urs) LD50		10 mg/l - 20 mg/l	4 h	Rat	Literature study	
Inhalation			category 4			Literature study	
,4 ['] -methylenediphe		oligomers		•			
Route of exposu	re Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 425	> 5000 mg/kg bw		Rat (female)	Read-across	
Dermal	LD50	Equivalent to OECD 402	> 9400 mg/kg bw	24 h	Rabbit (male / female)	Read-across	
Inhalation (aero		OECD 403	310 mg/m³ air	4 h	Rat (male / female)	Read-across	
socyanic acid, polyn	nethylenepolypho	enylene ester, polyme	with alpha-hydro-o	mega-hydroxypoly	oxy(methyl-1,2-eth)	anediyl)]	-
Route of exposu	re Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Inhalation (mist)			0.49 mg/lcategory 4	4 h	Rat	Literature study	
,4'-methylenediphe							
Route of exposu		Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	> 7616 mg/kg		Rat (female)	Read-across	
Dermal	LD50	Equivalent to OECD 402	> 9400 mg/kg bw	24 h	Rabbit (male / female)	Read-across	
Inhalation (aero	sol) LC50	Equivalent to OECD 403	0.49 mg/l air	4 h	Rat (male / female)	Read-across	
Inhalation			category 4			Annex VI	
,4 ^{'-methylenediphe}	nyl diisocyanate	oligomeric reaction p	roducts with alpha-h	ydro-omega-hydro	oxypoly(oxy-1,2-etha	nediyl)	
Route of exposu	re Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Inhalation			category 4			Literature	
		enyl diisocyanate and o	1	1 1 1			
Route of exposu		Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Other	> 2000 mg/kg bw		Rat (male / female)	Data waiving	
Dermal	LD50	Equivalent to OECD 402	> 9400 mg/kg bw	24 h	Rabbit (male / female)	Read-across	
Inhalation (aero	sol) LC50	OECD 403	0.368 mg/l	4 h	Rat (male / female)	Experimental value	
Inhalation			category 4			Expert judgement	
		debatable as it does n					
		í	1	1	triyltris[omega-hydro	oxypoly[oxy(methyl-1,2	1
Route of exposu	re Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Inhalation		alizamanis	category 4		1	Literature	
Route of exposu		oligomeric reaction p	Value	Exposure time	Species	Value determination	Remark
Inhalation			category 4			Literature study	
alc (Mg3H2(SiO3)4)		I	1		1		I
Route of exposu	re Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 423	> 5000 mg/kg bw		Rat (male)	Experimental value	
Dermal	LD50	OECD 402	> 2000 mg/kg bw	24 h	Rat (male / female)	Experimental value	
Inhalation (aero	sol) LC50	OECD 403	> 2.1 mg/l	4 h	Rat (male / female)	Experimental value	
nclusion		1	<u>I</u>	<u>I</u>	1 '		I
larmful if inhaled. Iot classified as acu	te toxic in contac	t with skin					
n for revision: 2; 3; !	5; 15				Publication date:	2006-02-02	

Not classified as acute toxic if swallowed

Corrosion/irritation

NOVA POWER GRIP 403 2-K prepolymer

No (test)data on the mixture available

Classification is based on the relevant ingredients

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	
-methylenediphen		<u>somers</u>					
Route of exposure		Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405	24 h	24; 48; 72 hours	Rabbit	Read-across	
Skin	Irritating	OECD 404	4 h	24; 48; 72 hours	Rabbit	Read-across	
Skin	Corrosive	OECD 404	4 h	24; 48; 72 hours	Rabbit	Read-across	
Skin	Irritating; category 2					Annex VI	
cyanic acid, polyme	thylenepolyphenyl	ene ester, polym	er with alpha-hydro-on	nega-hydroxypoly[ox	y(methyl-1,2-eth	nanediyl)]	
Route of exposure	Result	Method	Exposure time	Time point	Species	Value	Remark
						determination	
Eye	Irritating					Literature study	
Skin	Irritating					Literature study	
Inhalation	Irritating					Literature study	
-methylenedipheny				_	- ·		-
Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Slightly irritating				Rabbit	Experimental value	
Eye	Irritating				Human	Weight of evidence	
Skin	Irritating	OECD 404	4 h	24; 48; 72 hours	Rabbit	Read-across	
Skin	Irritating				Human	Weight of evidence	
Inhalation	Irritating				Human	Weight of evidence	
-methylenedipheny	yl diisocyanate, olig	omeric reaction	products with alpha-hy	dro-omega-hydroxy	ooly(oxy-1,2-eth	anediyl)	
Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating; category 2					Literature	
Skin	Irritating; category 2					Literature	
Inhalation	Irritating; STOT SE cat.3					Literature	
ction mass of 4,4'-n	nethylenediphenyl	diisocyanate and	o-(p-isocyanatobenzy)phenyl isocyanate			_
Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405	24 h		Rabbit	Read-across	Single treatme with rinsing
Eye	Irritating; category 2					Literature	
Skin	Irritating	OECD 404	4 h	24; 48; 72 hours	Rabbit	Read-across	
Inhalation (aerosol)	Irritating		4 h		Mouse	Experimental value	

Route of exposure	Result	Method	Exposure time	Time point	Species	Value	Remark
Eye	Irritating;					determination Literature	
Skin	category 2 Irritating;					Literature	
Inhalation	category 2 Irritating;					Literature	
 4'-methylenedinhen	STOT SE cat.3	bligomeric reaction pro	ducts with glycerol	nronoxylated			
Route of exposure		Method	Exposure time	Time point	Species	Value	Remark
			•••••			determination	
Eye	Irritating; category 2					Literature study	
Skin	Irritating; category 2					Literature study	
Inhalation	Irritating; STOT SE cat.3					Literature study	
lc (Mg3H2(SiO3)4)							
Route of exposure		Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405		1; 24; 48; 72 hours	Rabbit	Experimental value	
Not applicable (in vitro test)	Not irritating	EU Method B.46			Reconstructed human epidermis	Experimental value	
tory or skin sensitis A POWER GRIP 403 2 o (test)data on the r assification is based plymethylene polyph	mixture available on the relevant i <u>nenyl isocyanate</u>						
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polyph Route of exposure	mixture available on the relevant i <u>nenyl isocyanate</u>	ngredients Method	Exposure time	Observation time point	Species	Value determination	Remark
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polyph	mixture available on the relevant i <u>nenyl isocyanate</u>		Exposure time		Species	Value determination	Remark
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polyph Route of exposure Skin	mixture available on the relevant i <u>nenyl isocyanate</u> Result Sensitizing; category 1 Sensitizing; category 1	Method	Exposure time		Species		Remark
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polypf Route of exposure Skin Inhalation 4'-methylenedipher	mixture available on the relevant i <u>nenyl isocyanate</u> Result Sensitizing; category 1 Sensitizing; category 1 nyl diisocyanate, c	Method		point		Literature study Literature study	
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polyph Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure	mixture available on the relevant i nenyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 nyl diisocyanate, c Result	Method	Exposure time	point Observation time point	Species	Literature study Literature study Value determination	
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polyph Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure	mixture available on the relevant i <u>nenyl isocyanate</u> Result Sensitizing; category 1 Sensitizing; category 1 nyl diisocyanate, c	Method		point Observation time	Species Guinea pig (male / female)	Literature study Literature study Value determination Read-across	
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polyph Route of exposure Skin Inhalation A'-methylenedipher Route of exposure Skin Inhalation	mixture available on the relevant i <u>nenyl isocyanate</u> Result Sensitizing; category 1 Sensitizing; category 1 nyl diisocyanate, c Result Sensitizing Sensitizing	Method	Exposure time	point Observation time point 24; 48 hours	Species Guinea pig (male / female) Rat (male)	Literature study Literature study Value determination Read-across Experimental value	
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polyph Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure Skin Inhalation ocyanic acid, polyme	mixture available on the relevant i nenyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 nyl diisocyanate, c Result Sensitizing Sensitizing thylenepolypher	Method Digomers Method OECD 406	Exposure time	point Observation time point 24; 48 hours nega-hydroxypoly[oxy Observation time	Species Guinea pig (male / female) Rat (male) r(methyl-1,2-ethan	Literature study Literature study Value determination Read-across Experimental value	Remark
A POWER GRIP 403 3 o (test)data on the r assification is based lymethylene polyph Route of exposure Skin Inhalation A'-methylenedipher Route of exposure Skin Inhalation ocyanic acid, polyme Route of exposure	mixture available on the relevant i nenyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 nyl diisocyanate, c Result Sensitizing Sensitizing thylenepolypher Result	Method ligomers Method OECD 406 Other ylene ester, polymer y	Exposure time	point Observation time point 24; 48 hours nega-hydroxypoly[oxy	Species Guinea pig (male / female) Rat (male) /(methyl-1,2-ethan	Literature study Literature study Value determination Read-across Experimental value ediy[]] Value determination	Remark
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polyph Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure Skin Inhalation ocyanic acid, polyme Route of exposure Skin	mixture available on the relevant i nenyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 nyl diisocyanate, c Result Sensitizing Sensitizing thylenepolypher	Method ligomers Method OECD 406 Other ylene ester, polymer y	Exposure time	point Observation time point 24; 48 hours nega-hydroxypoly[oxy Observation time	Species Guinea pig (male / female) Rat (male) /(methyl-1,2-ethan	Literature study Literature study Value determination Read-across Experimental value ediy[]]	Remark
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polypf Route of exposure Skin Inhalation A ¹ -methylenediphen Route of exposure Skin Inhalation Skin Skin Inhalation Skin Skin Inhalation Skin Inhalation	mixture available on the relevant i nenyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 Sensitizing Sensitizing Sensitizing ethylenepolypher Result Sensitizing Sensitizing Sensitizing	Method ligomers Method OECD 406 Other ylene ester, polymer y	Exposure time	point Observation time point 24; 48 hours nega-hydroxypoly[oxy Observation time	Species Guinea pig (male / female) Rat (male) /(methyl-1,2-ethan	Literature study Literature study Value determination Read-across Experimental value ediy[]] Value determination Literature study	Remark
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polyph Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure Skin Inhalation coyanic acid, polyme Route of exposure Skin Inhalation 4'-methylenedipher	mixture available on the relevant i nenyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 syl diisocyanate, co Result Sensitizing thylenepolypher Result Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing yl diisocyanate	Method ligomers Method OECD 406 Other ylene ester, polymer y	Exposure time	point Observation time point 24; 48 hours mega-hydroxypoly[oxy Observation time point	Species Guinea pig (male / female) Rat (male) /(methyl-1,2-ethan Species	Literature study Literature study Value determination Read-across Experimental value ediy[]] Value determination Literature study	Remark
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polypf Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure Skin Inhalation ocyanic acid, polyme Route of exposure Skin Inhalation d'-methylenedipher Route of exposure	mixture available on the relevant i nenyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 syl diisocyanate, co Result Sensitizing thylenepolypher Result Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing yl diisocyanate	Method	Exposure time vith alpha-hydro-or Exposure time	point Observation time point 24; 48 hours nega-hydroxypoly[oxy Observation time point Observation time point	Species Guinea pig (male / female) Rat (male) /(methyl-1,2-ethan Species Species Species	Literature study Literature study Value determination Read-across Experimental value ediy[]] Value determination Literature study Literature study	Remark
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polyph Route of exposure Skin Inhalation A'-methylenedipher Route of exposure Skin Inhalation	mixture available on the relevant i nenyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 Sensitizing; category 1 nyl diisocyanate, co Result Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Nyl diisocyanate Result	Method	Exposure time vith alpha-hydro-or Exposure time	point Observation time point 24; 48 hours nega-hydroxypoly[oxy Observation time point Observation time point	Species Guinea pig (male / female) Rat (male) /(methyl-1,2-ethan Species Species Guinea pig (male / female)	Literature study Literature study Value determination Read-across Experimental value ediyl)] Value determination Literature study Literature study Value determination	Remark
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polypf Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure Skin Inhalation cyanic acid, polyme Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure Skin Inhalation d'-methylenedipher Route of exposure Skin	mixture available on the relevant i nenyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 Sensitizing; category 1 Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Not sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing	Method	Exposure time vith alpha-hydro-or Exposure time Exposure time 12 h	point Observation time point 24; 48 hours Deservation time point Observation time point Observation time point 24; 48 hours	Species Guinea pig (male / female) Rat (male) /(methyl-1,2-ethan Species Guinea pig (male / female) Rat (male) Guinea pig (female) Guinea pig (female)	Literature study Literature study Value determination Read-across Experimental value ediyl)] Value determination Literature study Literature study Value determination Experimental value Experimental value	Remark
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polypf Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure Skin Inhalation cyanic acid, polyme Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure Skin Inhalation d'-methylenedipher Route of exposure Skin	mixture available on the relevant i nenyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 Sensitizing; category 1 Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Not sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing	Method	Exposure time vith alpha-hydro-or Exposure time Exposure time 12 h	point Observation time point 24; 48 hours Deservation time point Observation time point Observation time point 24; 48 hours	Species Guinea pig (male / female) Rat (male) /(methyl-1,2-ethan Species Guinea pig (male / female) Rat (male) Guinea pig (female) Guinea pig (female)	Literature study Literature study Value determination Read-across Experimental value ediyl)] Value determination Literature study Literature study Value determination Experimental value Experimental value	Remark
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polypf Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure Skin Inhalation ocyanic acid, polyme Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure	mixture available on the relevant i nenyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 Sensitizing; category 1 Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Not sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing	Method	Exposure time vith alpha-hydro-or Exposure time Exposure time 12 h	point Observation time point 24; 48 hours nega-hydroxypoly[oxy] Observation time point Observation time point 24; 48 hours 24; 48 hours 24; 48 hours 24; 48 hours	Species Guinea pig (male / female) Rat (male) /(methyl-1,2-ethan Species Guinea pig (male / female) Rat (male) Guinea pig (female) Guinea pig (female) soly(oxy-1,2-ethane	Literature study Literature study Value determination Read-across Experimental value ediyl)] Value determination Literature study Literature study Value determination Experimental value Experimental value	Remark Remark Remark
A POWER GRIP 403 2 o (test)data on the r assification is based lymethylene polypf Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure Skin Inhalation cyanic acid, polyme Route of exposure Skin Inhalation 4'-methylenedipher Route of exposure Skin Inhalation d'-methylenedipher Route of exposure Skin	mixture available on the relevant i nenyl isocyanate Result Sensitizing; category 1 Sensitizing; category 1 Sensitizing; category 1 Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Not sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing Sensitizing	Method	Exposure time vith alpha-hydro-or Exposure time 12 h 12 h	point Observation time point 24; 48 hours Deservation time point Observation time point Observation time point 24; 48 hours Observation time point 24; 48 hours Observation time point 24; 48 hours Observation time point Observation time point Observation time point Observation time point	Species Guinea pig (male / female) Rat (male) /(methyl-1,2-ethan Species Guinea pig (male / female) Rat (male) Guinea pig (female) Guinea pig (female) ooly(oxy-1,2-ethane)	Literature study Literature study Value determination Read-across Experimental value ediyl)] Value determination Literature study Literature study Value determination Experimental value Experimental value Experimental value	Remark Remark Remark

Reason for revision: 2; 3; 5; 15

Publication date: 2006-02-02 Date of revision: 2019-04-15

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Dermal (on the ears)	Sensitizing		6 day(s)		Mouse	Experimental value	
Inhalation	Sensitizing				Rat (male)	Read-across	
ocyanic acid, polym	ethylenpolyphen		ner with alpha, alpha, alp	oha-1,2,3-propanetriy	ltris[omega-hyd	roxypoly[oxy(methyl-1,2-	ethanediyl)]]
Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing; category 1					Literature	
Inhalation	Sensitizing; category 1					Literature	
4'-methylenedipher	nyl diisocyanate,	oligomeric reactio	n products with glycero	l, propoxylated			
Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing; category 1					Literature study	
	Sensitizing;					Literature study	
Inhalation	category 1				•		
	category 1						
lc (Mg3H2(SiO3)4)		Method	Exposure time	Observation time point	Species	Value determination	Remark
Inhalation Ilc (Mg3H2(SiO3)4) Route of exposure Skin		Method OECD 406	Exposure time		Species Guinea pig (female)	Value determination	Remark

Conclusion

May cause an allergic skin reaction.

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

Specific target organ toxicity

NOVA POWER GRIP 403 2-K prepolymer

No (test)data on the mixture available

Classification is based on the relevant ingredients

Route of	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value
exposure				8				determination
Inhalation			STOT RE cat.2					Literature stud
1'-methylenedipl	henyl diisocyana	te, oligomers						
Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Inhalation (aerosol)	NOAEC	Equivalent to OECD 453	0.2 mg/m ³	Respiratory tract	No effect	104 weeks (6h / day, 5 days / week)	Rat (male / female)	Read-across
Inhalation (aerosol)	LOAEC	Equivalent to OECD 453	1 mg/m³	Respiratory tract	Histopatholog y	104 weeks (6h / day, 5 days / week)	Rat (male / female)	Read-across
cyanic acid, poly	ymethylenepoly	phenylene ester	, polymer with al	pha-hydro-ome	ga-hydroxypoly[o	xy(methyl-1,2-ethanediyl)	1	
Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Inhalation			STOT RE cat.2					Literature stud
¹ -methylenedipl	henyl diisocyana	ite						
Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Inhalation (aerosol)	LOAEC		0.23 mg/m ³ air	Lungs	Lung tissue affection/deg eneration	≤ 104 weeks (17h / day, 5 days / week)	Rat (female)	Experimental value
¹ -methylenedipl	henyl diisocyana	ite, oligomeric r	eaction products	with alpha-hyd	ro-omega-hydrox	ypoly(oxy-1,2-ethanediyl)		
Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Inhalation			STOT RE cat.2					Literature
action mass of 4,	,4'-methylenedi	phenyl diisocyar	nate and o-(p-iso	yanatobenzyl)	henyl isocyanate			
Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Inhalation (aerosol)	NOAEC	Equivalent to OECD 453	0.2 mg/m ³ air		No effect	104 weeks (6h / day, 5 days / week)	Rat (male / female)	Read-across
Inhalation (aerosol)	LOAEC	Equivalent to OECD 453	1.0 mg/m³ air	Nose		104 weeks (6h / day, 5 days / week)	Rat (male / female)	Read-across

Reason for revision: 2; 3; 5; 15

Publication date: 2006-02-02 Date of revision: 2019-04-15

Revision number: 0402

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determinatio
Inhalation			STOT RE cat.2					Literature
-methylenedipl	nenyl diisocyana	te, oligomeric r	eaction products	with glycerol, p	ropoxylated			
Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determinatio
Inhalation			STOT RE cat.2	Respiratory tract				Literature stu
c (Mg3H2(SiO3)	4)		•	•			-	
Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determinatio
Oral (diet)	NOAEL	Equivalent to OECD 452	100 mg/kg bw/day		No effect	101 day(s)	Rat (male / female)	Experimenta value
Dermal								Data waiving
Inhalation (aerosol)	NOAEC	Equivalent to OECD 452	10.8 mg/m ³ air		No effect	52 weeks (7h / day, 5 days / week)	Rat (male / female)	Experimenta value
c <mark>lusion</mark> ay cause damage t classified as su			through prolong ith skin	ed or repeated	exposure if inha	aled.		

Mutagenicity (in vitro)

NOVA POWER GRIP 403 2-K prepolymer

No (test)data on the mixture available

<u>4,4</u>	-methylenediphenyl diisocy	anate, oligomers									
	Result	Method	Test substrate	Effect	Value determination	Remark					
	Negative	OECD 471	Bacteria (S.typhimurium)	No effect	Read-across						
4,4	I, 4 ¹ -methylenediphenyl diisocyanate										
	Result	Method	Test substrate	Effect	Value determination	Remark					
	Negative with metabolic	Equivalent to OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value						
	activation, negative										
	without metabolic										
	activation										
Tal	<u>c (Mg3H2(SiO3)4)</u>										

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic	Equivalent to OECD 471	Bacteria (S.typhimurium)		Experimental value	
activation, negative					
without metabolic					
activation					

Mutagenicity (in vivo)

NOVA POWER GRIP 403 2-K prepolymer

No (test)data on the mixture available

Classification is based on the relevant ingredients

4,4'-methylenediphenyl diisocyanate, oligomers

interrifience alpheny i ansocianate) on					
Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	OECD 474	3 weeks (1h / day, 1 day	Rat (male)		Read-across
		/ week)			
¹ -methylenediphenyl diisocyanate					
Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	OECD 474	3 weeks (1h / day, 1 day	Rat (male)		Experimental value
		/ week)			
lc (Mg3H2(SiO3)4)					
Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Oral (stomach tube))	Equivalent to OECD	5 days (1x / day)	Rat (male)		Experimental value
	478				

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

NOVA POWER GRIP 403 2-K prepolymer

No (test)data on the mixture available

Classification is based on the relevant ingredients polymethylene polyphenyl isocyanate

/								
Route of	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value
exposure								determination
Unknown			category 2					Literature study

Reason for revision: 2; 3; 5; 15

Publication date: 2006-02-02

Date of revision: 2019-04-15

	Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determinat
	Inhalation (aerosol)	NOAEC	Equivalent to OECD 453	1 mg/m³ air	104 weeks (6h / day, 5 days / week)	Rat (male / female)	No carcinogenic effect	Respiratory tract	Read-acros
	Inhalation	LOAEC	Equivalent to	6 mg/m³ air	104 weeks (6h / day,	Rat (male /	Tumor	Respiratory	Read-acros
.4	(aerosol) -methylened	iphenyl diisoc	OECD 453 vanate		5 days / week)	female)	formation	tract	
	Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determinat
	Inhalation (aerosol)	NOAEC	Other	0.7 mg/m³ air	104 weeks (17h / day, 5 days / week)	Rat (female)	No carcinogenic effect		Experiment value
,4	-methylened	iphenyl diisoc	vanate, oligomeric	reaction products	with alpha-hydro-omeg	a-hydroxypoly(oxy	-1,2-ethanediyl)		•
	Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determinat
	Unknown			category 2					Literature
ea	ction mass of	4,4'-methyle	nediphenyl diisocy		cyanatobenzyl)phenyl is	ocyanate		1	
	Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determinat
	Inhalation (aerosol)	NOAEC	Equivalent to OECD 453	1 mg/m³	104 weeks (6h / day, 5 days / week)	Rat (male / female)	No effect		Read-acros
	Inhalation (aerosol)	LOAEC	Equivalent to OECD 453	6 mg/m³ air	104 weeks (6h / day, 5 days / week)	Rat (male / female)	Tumor formation	Lungs	Read-acros
1 500		olymethylenp		, polymer with alp	ha, alpha, alpha-1,2,3-p			xy(methyl-1,2-	ethanediyl)]]
	Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determinat
	Unknown			category 2					Literature
,4		iphenyl diisoc	yanate, oligomeric		with glycerol, propoxyla	ated			
	Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determinat
				category 2				Respiratory tract	Literature s
									_
alc	c (Mg3H2(SiO	(3)4)							
	<u>c (Mg3H2(SiC</u> Route of exposure	<u>13)4)</u> Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determinat
	Route of		Method Carcinogenic toxicity study	Value 8.1 mg/m³ air	Exposure time 30 day(s)	Species Hamster (male / female)	Effect No carcinogenic effect	Organ	Value determinat Experiment value
	Route of exposure Inhalation	Parameter	Carcinogenic	8.1 mg/m ³ air 100 mg/kg		Hamster (male / female) Rat (male /	No carcinogenic effect No carcinogenic	Organ	determinat Experiment value Experiment
nc	Route of exposure Inhalation (aerosol)	Parameter NOAEC NOAEL	Carcinogenic toxicity study	8.1 mg/m³ air	30 day(s)	Hamster (male / female)	No carcinogenic effect	Organ	determinat Experiment value
nc Sus	Route of exposure Inhalation (aerosol) Oral (diet)	Parameter NOAEC NOAEL using cancer.	Carcinogenic toxicity study	8.1 mg/m ³ air 100 mg/kg	30 day(s)	Hamster (male / female) Rat (male /	No carcinogenic effect No carcinogenic	Organ	determinat Experiment value Experiment
onc Sus du	Route of exposure Inhalation (aerosol) Oral (diet) Clusion spected of car inctive toxicity POWER GRIP	Parameter NOAEC NOAEL using cancer. 403 2-K prep	Carcinogenic toxicity study OECD 453	8.1 mg/m ³ air 100 mg/kg	30 day(s)	Hamster (male / female) Rat (male /	No carcinogenic effect No carcinogenic	Organ	determinat Experiment value Experiment
nc Sus du /A No	Route of exposure Inhalation (aerosol) Oral (diet) Cral (diet) Cra	Parameter NOAEC NOAEL using cancer. 403 2-K prep the mixture a based on the r	Carcinogenic toxicity study OECD 453	8.1 mg/m ³ air 100 mg/kg bw/day	30 day(s)	Hamster (male / female) Rat (male /	No carcinogenic effect No carcinogenic	Organ	determinat Experiment value Experiment
nc Sus du /A No	Route of exposure Inhalation (aerosol) Oral (diet) Cral (diet) Cra	Parameter NOAEC NOAEL using cancer. 403 2-K prep the mixture a based on the r iphenyl diisoor	Carcinogenic toxicity study OECD 453	8.1 mg/m ³ air 100 mg/kg bw/day	30 day(s) 101 day(s)	Hamster (male / female) Rat (male / female)	No carcinogenic effect No carcinogenic	Organ	determinat Experiment value Experiment
nc Sus du /A No	Route of exposure Inhalation (aerosol) Oral (diet) Cral (diet) Cra	Parameter NOAEC NOAEL using cancer. 403 2-K prep the mixture a pased on the r iphenyl diisoc F	Carcinogenic toxicity study OECD 453 OECD 453	s settod Valu	30 day(s) 101 day(s)	ne Species	No carcinogenic effect No carcinogenic effect		determinat Experiment value Experiment value

4,4'-methylenediphenyl diisocyanate

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL	OECD 414	3 mg/m³ air	10 days (6h / day)	Rat (female)	No effect		Experimental value
	LOAEL	OECD 414	9 mg/m³ air	10 days (6h / day)	Rat (female)	Embryotoxicity		Experimental value
Maternal toxicity	NOAEL	OECD 414	4 mg/kg bw/day	10 day(s)	Rat (female)	No effect		Read-across
Effects on fertility								Data waiving

Reason for revision: 2; 3; 5; 15

Talc (Mg3H2(SiO3)4)

	Parameter	Method	Value	Exposure time	Species	Effect	 Value determination
Developmental toxicity (Oral (stomach tube))	NOAEL	Developmenta I toxicity study	0, 0	10 days (1x / day)	Rat	No effect	Experimental value
Maternal toxicity (Oral (stomach tube))	NOAEL	Developmenta I toxicity study	0, 0	10 days (1x / day)	Rat	No effect	Experimental value
Effects on fertility (Oral (stomach tube))	NOAEL	Equivalent to OECD 416	> 900 mg/kg bw/day	13 days (1x / day)	Rabbit (female)	No effect	Experimental value

Conclusion

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

NOVA POWER GRIP 403 2-K prepolymer

No (test)data on the mixture available

4,4'-methylenediphe	nyl diisocyanate

Parameter	Method	Value	Organ	Effect	Exposure time	 Value determination
LD50		100 mg/kg bw				 Experimental value Intraperitoneal

Chronic effects from short and long-term exposure

NOVA POWER GRIP 403 2-K prepolymer

Skin rash/inflammation. Respiratory difficulties.

SECTION 12: Ecological information

12.1. Toxicity

NOVA POWER GRIP 403 2-K prepolymer

No (test)data on the mixture available

Judgement of the mixture is based on the relevant ingredients

oolymethylene polyphenyl isocya	nate							
	Parameter	Method	Value	Duration	Species	Test desigr	n Fresh/salt water	Value determination
Acute toxicity other aquatic organisms	LC50		> 1000 mg	/l 96 h				Literature study
Toxicity aquatic micro- organisms	EC50	OECD 209	> 100 mg/		Activated sludge			Literature study
1,4'-methylenediphenyl diisocyan	ate, oligomers							·
	Parameter	Method	Value	Duration	Species	Test desigr	n Fresh/salt water	Value determination
Acute toxicity fishes	LC0	Other	> 3000 mg	/l 96 h	Oryzias latipes	Semi-statio system	Fresh water	Experimental value; Lethal
Acute toxicity crustacea	EC50	OECD 202	129.7 mg/	l 24 h	Daphnia magna	Static syste	em Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	EC50	OECD 201	> 1640 mg	/I 3 day(s)	Scenedesmus subspicatus	Static syste	em Fresh water	Read-across; Growth rate
Long-term toxicity aquatic crustacea	NOEC	OECD 211	≥ 10 mg/l	21 day(s)	Daphnia magna	Semi-statio system	Fresh water	Read-across; Reproduction
Toxicity aquatic micro- organisms	EC50	OECD 209	> 100 mg/	l 3 h	Activated sludge	Static syste	em Fresh water	Read-across; Respiration
	Parameter	Method		Value	Duration	Spe	cies	Value determination
Toxicity soil macro-organisms	NOEC	OECD 20	17	≥ 1000 mg/kg so dw	il 14 day(s)		enia fetida	Read-across
Toxicity terrestrial plants	EC50	Equivale 208	nt to OECD	> 1000 mg/l	14 day(s)	Ave	ena sativa	Read-across

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	> 1000 mg/l	96 h	Danio rerio	Static system	Fresh water	Read-across; Nominal concentration
Acute toxicity crustacea	EC50	OECD 202	129.7 mg/l	24 h	Daphnia magna	Static system	Fresh water	Read-across; Locomotor effect
Toxicity algae and other aquatic plants	EC50	OECD 201	> 1640 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Read-across; Growth rate
Long-term toxicity aquatic crustacea	NOEC	OECD 211	≥ 10 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Read-across; Reproduction
Toxicity aquatic micro- organisms	EC50	OECD 209	> 100 mg/l	3 h	Activated sludge	Static system	Fresh water	Read-across; Nominal concentration
alc (Mg3H2(SiO3)4)								
	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	ECOSAR v1.00	89581 mg/l	96 h	Pisces		Fresh water	QSAR
Acute toxicity crustacea	LC50	ECOSAR v1.00	36812 mg/l	48 h	Daphnia sp.		Fresh water	QSAR
Acute toxicity crustacea Toxicity algae and other aquatic plants	LC50 EC50		36812 mg/l 7203 mg/l	48 h 96 h	Daphnia sp. Algae		Fresh water Fresh water	QSAR QSAR
, Toxicity algae and other		v1.00 ECOSAR						
, Toxicity algae and other	EC50	v1.00 ECOSAR v1.00 ECOSAR	7203 mg/l	96 h	Algae		Fresh water	QSAR

Conclusion

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

12.2. Persistence and degradability

polymethylene polyphenyl isocyanate

Biodegradation water			
Method	Value	Duration	Value determination
OECD 302C: Inherent Biodegradability: Modified MITI Test (II)	< 60 %		Experimental value
Phototransformation air (DT50 air)			
Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	/IN v1.92 3.221 h 150000 /cm³ Calculated value		Calculated value
,4 -methylenediphenyl diisocyanate, oligome	rs		
Biodegradation water			
Method	Value	Duration	Value determination
OECD 302C: Inherent Biodegradability: Modified MITI Test (II)	0 %	28 day(s)	Read-across
Phototransformation air (DT50 air)			
Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	0.92 day(s)		QSAR
Half-life water (t1/2 water)			L
Method	Value	Primary degradation/mineralisation	Value determination
	20 h		Read-across
4 -methylenediphenyl diisocyanate	•	•	•
Biodegradation water			
Method	Value	Duration	Value determination
OECD 302C: Inherent Biodegradability:	0 %	28 day(s)	Read-across

Modified MITI Test (II)	0 %	20 Udy(S)	Read-across
hototransformation air (DT50 air)			
Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	0.92 day(s)		QSAR
alf-life water (t1/2 water)			
Method	Value	Primary degradation/mineralisation	Value determination
	20 h		Read-across

Reason for revision: 2; 3; 5; 15

Phototransforma Method			Value				I-radicals			letermination
AOPWIN v1.92			18.602 h		1.5	E6 /cn	n³		QSAR	
iclusion ontains non readil 3. Bioaccumu l A POWER GRIP 40 Kow	ative pote	ential	onent(s)							
ethod	R	emark		Value		Te	emperature		Value	determination
	N	lot applic	able (mixture)							
olymethylene poly BCF fishes	phenyl isocya	<u>anate</u>								
Parameter	Method		Value	Duratio	n Sp	pecies	;			Value determination
BCF			1		Pi	isces				Literature study
Log Kow										
Method		Remar	k	Value			Temperature	2		lue determination
KOWWIN	onul diice are	nato ali-	omore	10.46					Ca	lculated
4 ['] -methylenediph	enyi alisocya	nate, olig	omers							
BCF fishes				_						
Parameter	Method	r	Value	Duratio		pecies				Value determination
BCF 4'-methylenediph	OECD 30		92 - 200	28 day(s) [Cy	yprinu	is carpio			Experimental value
<u>4 -methylenediph</u> BCF fishes	criyi ulisucyd	nate								
Parameter	Mather		Value	Duratio		noniar				
BCF	OECD 30	5	92 - 200; GLP			pecies				Value determination
		J	192 - 200; GLP	4 week(γριπά	is carpio			Experimental value
Log Kow Method		Remar	k	Value			Temperature	•	V	lue determination
OECD 117		Kennar	ĸ	4.51			22 °C	8		
ICECD 117 alc (Mg3H2(SiO3)4	.)			4.31			122 U		IEX.	perimental value
BCF other aquatic										
Parameter	Method		Value	Duratio	n c.	pecies				Value determination
BCF	BCFBAF	v3.01	3.162 l/kg	Duratio	. 3					QSAR
Log Kow			10.202 1/ 1/6		I					-(
Method		Remar	k	Value			Temperature	2	V	lue determination
KOWWIN				-9.4			25 °C			SAR
oes not contain bi 4. Mobility in blymethylene poly (log) Koc Parameter	soil	·		Met	hod		Val	ue		Value determination
log Koc					PCKOCWIN v2.0)		78 - 10.597		Calculated value
Percent distributi	on								I	
Method	Fraction	air	Fraction biota	Fraction sediment	Fraction so	oil	Fraction wat	er Value d	letermi	nation
Fugacity Model	0.0387 %	, D		64.4 %	34.2 %		1.32 %	Calculat	ted valu	e
Level III		nata								
4 ['] -methylenediph										
Volatility (Henry's	Law constai			-						
Value	/m ol	Method		Temperat	ure		Remark			e determination
8.95E-7 atm m ³ / alc (Mg3H2(SiO3)4		I		25 °C					Esti	mated value
(IOg) KOC				Met	hod		Val	ue	,	Value determination
(log) Koc Parameter					PCKOCWIN v2.0)	1.5			QSAR
Parameter log Koc		nt H)								
Parameter	s Law constai	Method		Temperat	ure		Remark		Valu	e determination
Parameter log Koc									QSA	
Parameter log Koc Volatility (Henry's			RYWIN v3.20	25 °C						
Parameter log Koc Volatility (Henry's Value	n³/mol		RYWIN v3.20	25 C						
Parameter log Koc Volatility (Henry's Value 5.539E-29 atm r	n³/mol	SRC HEN	RYWIN v3.20 Fraction biota	Fraction	Fraction so	bil	Fraction wat	er Value d	letermi	nation
Parameter log Koc Volatility (Henry's Value 5.539E-29 atm r Percent distributi	n³/mol on	SRC HEN		Fraction	Fraction so	bil	Fraction wat		letermii	nation
Parameter log Koc Volatility (Henry's Value 5.539E-29 atm r Percent distributi Method	n³/mol on Fraction	SRC HEN	Fraction biota	Fraction sediment		bil		er Value d QSAR	letermii	nation

Conclusion

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

12.5. Results of PBT and vPvB assessment

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

12.6. Other adverse effects

NOVA POWER GRIP 403 2-K prepolymer

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-depleting potential (ODP)

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

SECTION 13: Disposal considerations

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

13.1. Waste treatment methods

13.1.1 Provisions relating to waste

European Union

Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997. Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

08 05 01* (wastes not otherwise specified in 08: waste isocyanates). 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. 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), Rail (RID), Inland waterways (ADN), Sea (IMDG/IMSBC), Air (ICAO-TI/IATA-DGR)

Transport	Not subject	
14.2. UN proper shipping name		
14.3. Transport hazard class(es)		
14.4. Packing group		
14.5. Environmental hazards		
Environmentally hazardous substance mark	no	
14.6. Special precautions for user		
14.7. Transport in bulk according to Annex II of Marpol and the	IBC Code	
Annex II of MARPOL 73/78	Not applicable, based on available data	

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

European legislation:

SEC

VOC content Directive 2010/75/EU

VOC content	Remark
	Insufficient data

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
polymethylene polyphenyl isocyanate 4,4'-methylenediphenyl diisocyanate, oligomers isocyanic acid, polymethylenepolyphenylene ester, polymer with alpha-hydro-omega- hydroxypoly[oxy(methyl-1,2-ethanediyl)] reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl) phenyl isocyanate	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	 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, Articles not complying with paragraph 1 shall not be placed on the market. 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,

Reason for revision: 2; 3; 5; 15

	development, 3.8 effects other than narcotic effects, 3.9 and 3.10; (c) hazard class 4.1; (d) hazard class 5.1.	 present an aspiration hazard and are labelled with H304, 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). S. 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 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. 6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled H304, intended for supply to the general public. 7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled H304 to the competent autho
 4,4'-methylenediphenyl diisocyanate, oligomeric reaction products with alpha- hydro-omega-hydroxypoly(oxy-1,2- ethanediyl) reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl) phenyl isocyanate 	Methylenediphenyl diisocyanate (MDI) including the following specific isomers: 4,4'- Methylenediphenyl diisocyanate; 2,4'- Methylenediphenyl diisocyanate; 2,2'- Methylenediphenyl diisocyanate	 Shall not be placed on the market after 27 December 2010, as a constituent of mixtures in concentrations equal to or greater than 0,1 % by weight of MDI for supply to the general public, unless suppliers shall ensure before the placing on the market that the packaging: (a) contains protective gloves which comply with the requirements of Council Directive 89/686/EEC; (b) is marked visibly, legibly and indelibly as follows, and without prejudice to other Community legislation concerning the classification, packaging and labelling of substances and mixtures: — Persons already sensitised to diisocyanates may develop allergic reactions when using this product. — Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. — This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used. 2. By way of derogation, paragraph 1(a) shall not apply to hot melt adhesives.
· 4,4'-methylenediphenyl diisocyanate	Methylenediphenyl diisocyanate (MDI) including the following specific isomers: 4,4'- Methylenediphenyl diisocyanate; 2,4'- Methylenediphenyl diisocyanate; 2,2'- Methylenediphenyl diisocyanate	 Shall not be placed on the market after 27 December 2010, as a constituent of mixtures in concentrations equal to or greater than 0,1 % by weight of MDI for supply to the general public, unless suppliers shall ensure before the placing on the market that the packaging: (a) contains protective gloves which comply with the requirements of Council Directive 89/686/EEC; (b) is marked visibly, legibly and indelibly as follows, and without prejudice to other Community legislation concerning the classification, packaging and labelling of substances and mixtures: — Persons already sensitised to diisocyanates may develop allergic reactions when using this product. — Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. — This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used. 2. By way of derogation, paragraph 1(a) shall not apply to hot melt adhesives.
<u>National legislation Belgium</u> <u>NOVA POWER GRIP 403 2-K pre</u> No data available		
National legislation The Netherland NOVA POWER GRIP 403 2-K pre		
Waterbezwaarlijkheid	B (4); Algemene Beoordelingsmethodie	k (ABM)
National legislation France NOVA POWER GRIP 403 2-K pre No data available 4,4'-methylenediphenyl diisocya Catégorie cancérogène National legislation Germany	i <u>nate</u> 4,4'-Diisocyanate de diphénylméthane;	C2
NOVA POWER GRIP 403 2-K pre		ng mit wassargafährdandan Staffan (Aws)/) 19 April 2017
WGK	וב; veroranung uber Anlagen zum Umga	ang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017
eason for revision: 2; 3; 5; 15		Publication date: 2006-02-02 Date of revision: 2019-04-15
		Date of revision, 2013-04-13

TA-Luft	5.2.5/I
TRGS900 - Risiko der	pMDI (als MDI berechnet); Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und de
Fruchtschädigung	biologischen Grenzwertes nicht befürchtet zu werden
Sensibilisierende Stoffe	pMDI (als MDI berechnet); Sa; Atemwegssensibilisierende Stoffe
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 -	Techn. ("Polymeres") MDI (pMDI) (in Form atembarer Aerosole, A-Fraktion); -
Fruchtbarkeitsgefährdend	
TRGS905 - Fruchtschädigend	Techn. ("Polymeres") MDI (pMDI) (in Form atembarer Aerosole, A-Fraktion); -
Hautresorptive Stoffe	pMDI (als MDI berechnet); H; Hautresorptiv
4'-methylenediphenyl diisocya	nate, oligomers
TA-Luft	5.2.5/I
4'-methylenediphenyl diisocya	nate
TA-Luft	5.2.5/I
TRGS900 - Risiko der	4,4'-Methylendiphenyldiisocyanat; Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes
Fruchtschädigung	und des biologischen Grenzwertes nicht befürchtet zu werden
Sensibilisierende Stoffe	4,4'-Methylendiphenyldiisocyanat; Sah; Atemwegssensibilisierende Stoffe Und Hautsensibilisierende Stoffe, an beider
	Zielorganen Allergien auslösende
Hautresorptive Stoffe	4,4'-Methylendiphenyldiisocyanat; H; Hautresorptiv
<u>lc (Mg3H2(SiO3)4)</u>	
TA-Luft	5.2.1

Nova Power GRIP 403 2-K prepolymer

No data available

polymethylene polyphenyl isocyanate					
Skin Sensitisation	lsocyanates, all (as -NCO) Except methyl isocyanate; Sen				
Respiratory sensitisation	Isocyanates, all (as -NCO) Except methyl isocyanate; Sen				
4,4'-methylenediphenyl diisocyana	ate				
Skin Sensitisation	lsocyanates, all (as -NCO) Except methyl isocyanate; Sen				
Respiratory sensitisation	lsocyanates, all (as -NCO) Except methyl isocyanate; Sen				
4,4'-methylenediphenyl diisocyana Skin Sensitisation	lsocyanates, all (as -NCO) Except methyl isocyanate; Sen				

Other relevant data NOVA POWER GRIP 403 2-K prepolymer

No data available

polymethylene polyphenyl iso	cyanate				
IARC - classification 3; Polymethylene polyphenyl isocyanate					
4,4'-methylenediphenyl diisoc	<u>vanate</u>				
IARC - classification	3; 4,4'-methylenediphenyl diisocyanate and polymeric 4,4'-methylenediphenyl diisocyanate				
Talc (Mg3H2(SiO3)4)					
IARC - classification	3; Talc				
TLV - Carcinogen	Talc (containing no asbestos fibers); A4				

15.2. Chemical safety assessment

No chemical safety assessment has been conducted for the mixture.

SECTION 16: Oth	er information					
Full text of any H-st	atements referred to under heading 3:					
H315 Causes sl	H315 Causes skin irritation.					
H317 May caus	H317 May cause an allergic skin reaction.					
	319 Causes serious eye irritation.					
H332 Harmful	2 Harmful if inhaled.					
H334 May caus	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 (respiratory system) through prolonged or repeated exposure if inhaled.					
	H373 May cause damage to organs through prolonged or repeated exposure if inhaled.					
H373 May caus	H373 May cause damage to organs (lungs) through prolonged or repeated exposure if inhaled.					
(*)	INTERNAL CLASSIFICATION BY BIG					
ADI	Acceptable daily intake					
AOEL	Acceptable operator exposure level					
CLP (EU-GHS)	EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)					
DMEL	Derived Minimal Effect Level					
DNEL	Derived No Effect Level					
EC50	Effect Concentration 50 %					
ErC50	EC50 in terms of reduction of growth rate					
LC50	Lethal Concentration 50 %					
LD50	Lethal Dose 50 %					
NOAEL	No Observed Adverse Effect Level					
NOEC	No Observed Effect Concentration					
Reason for revision: 2; 3; 5;	15	Publication date: 2006-02-02				
		Date of revision: 2019-04-15				
Revision number: 0402		Product number: 32189	19 / 20			

Organisation for Economic Co-operation and Development

- Persistent, Bioaccumulative & Toxic
- Predicted No Effect Concentration
- PNEC Sludge Treatment Process
 - very Persistent & very Bioaccumulative

Specific concentration limits CLP

OECD

PBT

STP

vPvB

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
4,4'-methylenediphenyl diisocyanate	C ≥ 5%	Eye Irrit. 2; H319	CLP Annex VI (ATP 0)
	C ≥ 5 %	Skin Irrit. 2; H315	CLP Annex VI (ATP 0)
	C ≥ 5 %	STOT SE 3; H335	CLP Annex VI (ATP 0)
reaction mass of 4,4'-methylenediphenyl diisocyanate and o- (p-isocyanatobenzyl)phenyl isocyanate	C ≥ 5 %	STOT SE 3; H335	ECHA
	C≥0.1 %	Resp. Sens. 1; H334	ECHA

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.

Reason for revision: 2; 3; 5; 15