SAFETY DATA SHEET

novatech

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

TWINBOND SIP 1K

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

1.1. Product identifier

Product name : TWINBOND SIP 1K
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
Sealing compound

1.2.2 Uses advised against

No uses advised against known

1.3. Details of the supplier of the safety data sheet

Supplier of the safety data sheet

Twinbond*
Industrielaan 5B
B-2250 Olen
☎ +32 14 25 76 40
🖷 +32 14 22 02 66
info@novatech.be
* Twinbond is a registered trademark of Novatech International N.V.

Manufacturer of the product

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

1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch) :
+32 14 58 45 45 (BIG)
24h/24h :
Nederland - Nationaal Vergiftigingen Informatie Centrum (NVIC): +31 88 755 8000
(Uitsluitend bestemd om artsen te informeren bij accidentele vergiftigingen)
(Only for the purpose of informing medical personnel in cases of acute intoxications)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Class	Category	Hazard statements
Flam. Liq.	category 2	H225: Highly flammable liquid and vapour.
Repr.	category 2	H361d: Suspected of damaging the unborn child.
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	H336: May cause drowsiness or dizziness.

2.2. Label elements

Contains: toluene.
Signal word Danger
H-statements
H225 Highly flammable liquid and vapour.
H361d Suspected of damaging the unborn child.

H373	May cause damage to organs through prolonged or repeated exposure if inhaled.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

P-statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves, protective clothing and eye protection/face protection.
P260	Do not breathe vapours/mist.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

Supplemental information

EUH208	Contains: n-butyl methacrylate; methyl methacrylate. May produce an allergic reaction.

2.3. Other hazards

May build up electrostatic charges: risk of ignition
Caution! Substance is absorbed through the skin

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark	M-factors and ATE
toluene 01-2119471310-51	108-88-3 203-625-9	50%<C<75%	Flam. Liq. 2; H225 Repr. 2; H361d Asp. Tox. 1; H304 STOT RE 2; H373 Skin Irrit. 2; H315 STOT SE 3; H336	(1)(2)(10)	Constituent	
butan-1-ol 01-2119484630-38	71-36-3 200-751-6	C<3%	Flam. Liq. 3; H226 Acute Tox. 4; H302 Eye Dam. 1; H318 Skin Irrit. 2; H315 STOT SE 3; H335 STOT SE 3; H336	(1)(2)(10)	Constituent	
n-butyl methacrylate	97-88-1 202-615-1	C<1%	Flam. Liq. 3; H226 Skin Sens. 1; H317 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335	(1)(2)(10)	Constituent	
methyl methacrylate 01-2119452498-28	80-62-6 201-297-1	C<1%	Flam. Liq. 2; H225 Skin Sens. 1; H317 Skin Irrit. 2; H315 STOT SE 3; H335	(1)(2)(10)	Constituent	

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

SECTION 4: First aid measures

4.1. Description of first aid measures

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

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

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

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

After ingestion:
Rinse mouth with water. If you feel unwell, consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.

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

4.2.1 Acute symptoms

After inhalation:
EXPOSURE TO HIGH CONCENTRATIONS: Nausea. Headache. Dizziness. Drowsiness. Disturbances of consciousness. Central nervous system depression. Feeling of weakness. Coordination disorders. Mental confusion. Drunkenness.

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

After eye contact:
Irritation of the eye tissue.

After ingestion:
Nausea. Abdominal pain. Symptoms similar to those listed under inhalation.

4.2.2 Delayed symptoms
No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.1.1 Suitable extinguishing media:
Small fire: Quick-acting ABC powder extinguisher, Quick-acting BC powder extinguisher, 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

Upon combustion: CO and CO2 are formed. Reacts slowly on exposure to water (moisture): formation of small quantities of methanol.

5.3. Advice for firefighters

5.3.1 Instructions:
If exposed to fire cool the closed containers by spraying with water. Do not move the load if exposed to heat.

5.3.2 Special protective equipment for fire-fighters:
Gloves (EN 374). Protective goggles (EN 166). Head/neck protection. Protective clothing (EN 14605 or EN 13034). Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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

6.1.1 Protective equipment for non-emergency personnel
See section 8.2

6.1.2 Protective equipment for emergency responders
Gloves (EN 374). Protective goggles (EN 166). Head/neck protection. Protective clothing (EN 14605 or EN 13034).

Suitable protective clothing
See section 8.2

6.2. Environmental precautions

Contain released product. Dam up the liquid spill. Try to reduce evaporation. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

Take up liquid spill into inert absorbent material. 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 section 13.

SECTION 7: Handling and storage

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

7.1. Precautions for safe handling

Keep away from naked flames/heat. Insufficient ventilation: keep naked flames/sparks away. Insufficient ventilation: take precautions against electrostatic charges. Insufficient ventilation: use spark-/explosionproof appliances and lighting system. Gas/vapour heavier than air at 20°C. Observe strict hygiene. Keep container tightly closed. Do not discharge the waste into the drain.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:
Meet the legal requirements. Store in a dry area. Fireproof storeroom.

7.2.2 Keep away from:

Heat sources, ignition sources, oxidizing agents.

7.2.3 Suitable packaging material:
Metal.

7.2.4 Non suitable packaging material:
No data available

7.3. Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 Occupational exposure

a) Occupational exposure limit values

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

EU

Methyl methacrylate	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	50 ppm
	Short time value (Indicative occupational exposure limit value)	100 ppm
Toluene	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	50 ppm
	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	192 mg/m³
	Short time value (Indicative occupational exposure limit value)	100 ppm
	Short time value (Indicative occupational exposure limit value)	384 mg/m³

Belgium

Alcool n-butylique	Time-weighted average exposure limit 8 h	20 ppm
	Time-weighted average exposure limit 8 h	62 mg/m³
Méthacrylate de méthyle	Time-weighted average exposure limit 8 h	50 ppm
	Time-weighted average exposure limit 8 h	208 mg/m³
	Short time value	100 ppm
	Short time value	416 mg/m³
Toluène	Time-weighted average exposure limit 8 h	20 ppm
	Time-weighted average exposure limit 8 h	77 mg/m³
	Short time value	100 ppm
	Short time value	384 mg/m³

The Netherlands

Methylmethacrylaat	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	49.2 ppm
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	205 mg/m³
	Short time value (Public occupational exposure limit value)	98.5 ppm
	Short time value (Public occupational exposure limit value)	410 mg/m³
Tolueen	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	39 ppm
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	150 mg/m³
	Short time value (Public occupational exposure limit value)	100 ppm
	Short time value (Public occupational exposure limit value)	384 mg/m³

France

Alcool n-butylique	Short time value (VL: Valeur non réglementaire indicative)	50 ppm
	Short time value (VL: Valeur non réglementaire indicative)	150 mg/m³
Méthacrylate de méthyle	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	50 ppm
	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	205 mg/m³
	Short time value (VRC: Valeur réglementaire contraignante)	100 ppm
	Short time value (VRC: Valeur réglementaire contraignante)	410 mg/m³
Toluène	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	20 ppm
	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	76.8 mg/m³
	Short time value (VRC: Valeur réglementaire contraignante)	100 ppm
	Short time value (VRC: Valeur réglementaire contraignante)	384 mg/m³

Germany

Butan-1-ol	Time-weighted average exposure limit 8 h (TRGS 900)	100 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	310 mg/m³
Methyl-methacrylat	Time-weighted average exposure limit 8 h (TRGS 900)	50 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	210 mg/m³
Toluol	Time-weighted average exposure limit 8 h (TRGS 900)	50 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	190 mg/m³

UK

Butan-1-ol	Short time value (Workplace exposure limit (EH40/2005))	50 ppm
	Short time value (Workplace exposure limit (EH40/2005))	154 mg/m³
Methyl methacrylate	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	50 ppm
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	208 mg/m³
	Short time value (Workplace exposure limit (EH40/2005))	100 ppm
	Short time value (Workplace exposure limit (EH40/2005))	416 mg/m³
Toluene	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	50 ppm
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	191 mg/m³
	Short time value (Workplace exposure limit (EH40/2005))	100 ppm
	Short time value (Workplace exposure limit (EH40/2005))	384 mg/m³

USA (TLV-ACGIH)

Methyl methacrylate	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	50 ppm
	Short time value (TLV - Adopted Value)	100 ppm
n-Butanol	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	20 ppm
Toluene	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	20 ppm

b) National biological limit values

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

Germany

Butan-1-ol (1-Butanol) (Butan-1-ol (1-Butanol) (nach Hydrolyse))	Urin: expositionsende, bzw. schichtende	10 mg/g Kreatinin	
Butan-1-ol (1-Butanol) (Butan-1-ol (1-Butanol) (nach Hydrolyse))	Urin: vor nachfolgender schicht	2 mg/g Kreatinin	
Toluol (o-Kresol (nach Hydrolyse))	Urin: expositionsende, bzw. schichtende bei langzeitexposition: nach mehreren vorangegangenen schichten	1,5 mg/l	
Toluol (Toluol)	Urin: expositionsende, bzw. schichtende	75 µg/l	
Toluol (Toluol)	Vollblut: unmittelbar nach exposition	600 µg/l	

USA (BEI-ACGIH)

Toluene (o-Cresol)	Urine: end of shift	0,3 mg/g creatinine	Background, With hydrolysis
Toluene (Toluene)	Blood: prior to last shift of workweek	0,02 mg/L	
Toluene (Toluene)	urine: end of shift	0,03 mg/L	

8.1.2 Sampling methods

Product name	Test	Number
Butanol (Volatile Organic compounds)	NIOSH	2549
Butyl Alcohol	OSHA	7
Methyl ester of methacrylic acid	NIOSH	2537
Methyl Methacrylate	NIOSH	2537
Methyl Methacrylate	NON	36
Methyl Methacrylate	OSHA	94
n-Butyl Alcohol (Alcohols Combined)	NIOSH	1405
n-Butyl Alcohol (Alcohols II)	NIOSH	1401
Toluene (Hydrocarbons, aromatic)	NIOSH	1501
Toluene (organic and inorganic gases by Extractive FTIR)	NIOSH	3800
Toluene (Volatile Organic compounds)	NIOSH	2549
Toluene in blood	NIOSH	8007
Toluene	NIOSH	4000
Toluene	NIOSH	8002
Toluene	OSHA	1021
Toluene	OSHA	111

8.1.3 Applicable limit values when using the substance or mixture as intended

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

8.1.4 Threshold values

DNEL/DMEL - Workers

toluene

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	192 mg/m³	
	Acute systemic effects inhalation	384 mg/m³	
	Long-term local effects inhalation	192 mg/m³	
	Acute local effects inhalation	384 mg/m³	
	Long-term systemic effects dermal	384 mg/kg bw/day	

butan-1-ol

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	310 mg/m³	

n-butyl methacrylate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	415.9 mg/m³	
	Long-term local effects inhalation	409 mg/m³	
	Long-term systemic effects dermal	5 mg/kg bw/day	
	Long-term local effects dermal	1 %	
	Acute local effects dermal	1 %	

methyl methacrylate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	348.4 mg/m³	
	Long-term local effects inhalation	208 mg/m³	
	Acute local effects inhalation	146 mg/m³	
	Long-term systemic effects dermal	13.67 mg/kg bw/day	
	Long-term local effects dermal	1.5 mg/cm²	
	Acute local effects dermal	1.5 mg/cm²	

DNEL/DMEL - General population

toluene

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	56.5 mg/m³	
	Acute systemic effects inhalation	226 mg/m³	
	Long-term local effects inhalation	56.5 mg/m³	
	Acute local effects inhalation	226 mg/m³	
	Long-term systemic effects dermal	226 mg/kg bw/day	
	Long-term systemic effects oral	8.13 mg/kg bw/day	

butan-1-ol

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	55.357 mg/m³	
	Long-term local effects inhalation	155 mg/m³	
	Long-term systemic effects dermal	3.125 mg/kg bw/day	
	Long-term systemic effects oral	1.562 mg/kg bw/day	

n-butyl methacrylate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	66.5 mg/m³	
	Long-term local effects inhalation	366.4 mg/m³	
	Long-term systemic effects dermal	3 mg/kg bw/day	
	Long-term local effects dermal	1 %	
	Acute local effects dermal	1 %	

methyl methacrylate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	74.3 mg/m³	
	Long-term local effects inhalation	104 mg/m³	
	Acute local effects inhalation	208 mg/m³	
	Long-term systemic effects dermal	8.2 mg/kg bw/day	
	Long-term local effects dermal	1.5 mg/cm²	
	Acute local effects dermal	1.5 mg/cm²	
	Long-term systemic effects oral	8.2 mg/kg bw/day	

PNEC

toluene

Compartments	Value	Remark
Fresh water	0.68 mg/l	
Fresh water (intermittent releases)	0.68 mg/l	
Marine water	0.68 mg/l	
STP	13.61 mg/l	
Fresh water sediment	16.39 mg/kg sediment dw	
Marine water sediment	16.39 mg/kg sediment dw	
Soil	2.89 mg/kg soil dw	

butan-1-ol

Compartments	Value	Remark
Fresh water	0.082 mg/l	
Marine water	0.008 mg/l	
Fresh water (intermittent releases)	2.25 mg/l	
STP	2476 mg/l	
Fresh water sediment	0.324 mg/kg sediment dw	
Marine water sediment	0.032 mg/kg sediment dw	
Soil	0.017 mg/kg soil dw	

n-butyl methacrylate

Compartments	Value	Remark
Fresh water	0.017 mg/l	
Fresh water (intermittent releases)	0.056 mg/l	
Marine water	0.002 mg/l	
STP	31.7 mg/l	
Fresh water sediment	4.73 mg/kg sediment dw	
Marine water sediment	0.473 mg/kg sediment dw	
Soil	0.935 mg/kg soil dw	

methyl methacrylate

Compartments	Value	Remark
Fresh water	0.94 mg/l	
Fresh water (intermittent releases)	0.94 mg/l	
Marine water	0.94 mg/l	
STP	10 mg/l	
Fresh water sediment	5.74 mg/kg sediment dw	
Soil	1.47 mg/kg soil dw	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2. Exposure controls

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

8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. Insufficient ventilation: keep naked flames/sparks away. Insufficient ventilation: take precautions against electrostatic charges. Insufficient ventilation: use spark-/explosionproof appliances and lighting system. Measure the concentration in the air regularly. Work under local exhaust/ventilation.

8.2.2 Individual protection measures, such as personal protective equipment

Observe strict hygiene. Do not eat, drink or smoke during work.

a) Respiratory protection:

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

b) Hand protection:

Protective gloves against chemicals (EN 374).

Materials	Measured breakthrough time	Thickness	Protection index	Remark
fluor rubber	> 480 minutes	0.7 mm	Class 6	

c) Eye protection:

Protective goggles (EN 166).

d) Skin protection:

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

8.2.3 Environmental exposure controls:

See sections 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical form	Liquid
Odour	Strong odour
Odour threshold	No data available in the literature
Colour	Colourless
Particle size	Not applicable (liquid)
Explosion limits	1.2 - 7 vol %
Flammability	Highly flammable liquid and vapour.
Log Kow	Not applicable (mixture)
Dynamic viscosity	100 mPa.s - 300 mPa.s
Kinematic viscosity	No data available in the literature
Melting point	No data available in the literature
Boiling point	111 °C ; 1013 hPa
Relative vapour density	> 1
Vapour pressure	29 hPa ; 20 °C
Solubility	Water ; insoluble

Relative density	0.95 ; 20 °C
Absolute density	950 kg/m³ ; 20 °C
Decomposition temperature	No data available in the literature
Auto-ignition temperature	420 °C
Flash point	8 °C
pH	Not applicable (non-soluble in water)

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

May be ignited by sparks. May build up electrostatic charges: risk of ignition.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts with (strong) acids/bases.

10.4. Conditions to avoid

Precautionary measures

Keep away from naked flames/heat. Insufficient ventilation: keep naked flames/sparks away. Insufficient ventilation: take precautions against electrostatic charges. Insufficient ventilation: use spark-/explosionproof appliances and lighting system.

10.5. Incompatible materials

Oxidizing agents.

10.6. Hazardous decomposition products

Upon combustion: CO and CO2 are formed. Reacts slowly on exposure to water (moisture): formation of small quantities of methanol.

SECTION 11: Toxicological information

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

11.1.1 Test results

Acute toxicity

TWINBOND SIP 1K

No (test)data on the mixture available

Judgement is based on the relevant ingredients

toluene

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to EU Method B.1	5580 mg/kg bw		Rat (male)	Experimental value	
Dermal	LD50		> 5000 mg/kg bw	24 h	Rabbit (male)	Experimental value	
Inhalation (vapours)	LC50	Equivalent to OECD 403	28.1 mg/l air	4 h	Rat (male / female)	Experimental value	

butan-1-ol

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	2292 mg/kg bw		Rat (female)	Experimental value	
Oral			category 4			Annex VI	
Dermal	LD50	Equivalent to OECD 402	3430 mg/kg bw	24 h	Rabbit (male)	Experimental value	
Inhalation (vapours)	LC50	Equivalent to OECD 403	> 17.76 mg/l air	4 h	Rat (male / female)	Experimental value	

Classification of this substance according to Annex VI is debatable as it does not correspond to the conclusion from the test

n-butyl methacrylate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD0	OECD 401	≥ 2000 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD0	OECD 402	≥ 2000 mg/kg bw	24 h	Rabbit (male / female)	Experimental value	
Inhalation	Min LD	OECD 403	29 mg/l air	4 h	Rat (male / female)	Experimental value	

methyl methacrylate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		9400 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50	Equivalent to OECD 402	> 5000 mg/kg bw	24 h	Rabbit (male)	Experimental value	
Inhalation (vapours)	LC50	Equivalent to OECD 403	29.8 mg/l air	4 h	Rat (male / female)	Experimental value	

Conclusion

Not classified for acute toxicity

Corrosion/irritation

TWINBOND SIP 1K

No (test)data on the mixture available

Classification is based on the relevant ingredients

toluene

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Slightly irritating	OECD 405		24; 48; 72 hours	Rabbit	Experimental value	Single treatment without rinsing
Skin	Irritating	EU Method B.4	4 h	24; 48; 72 hours	Rabbit	Experimental value	

butan-1-ol

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage	OECD 405		24; 48; 72 hours	Rabbit	Experimental value	Single treatment without rinsing
Skin	Irritating	Draize Skin Test	2 h	24; 48; 72 hours	Rabbit	Experimental value	
Inhalation	Irritating	Human observation			Human	Experimental value	

n-butyl methacrylate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating; category 2					Annex VI	
Eye	Slightly irritating	OECD 405		24; 48; 72 hours	Rabbit	Experimental value	
Skin	Irritating		24 h	24; 72 hours	Rabbit	Experimental value	
Inhalation	Irritating; STOT SE cat.3					Annex VI	

In the light of practical experience, the classification for this substance is more stringent than the one based on test results of the used test organisms

methyl methacrylate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating			24; 48; 72 hours	Rabbit	Experimental value	Single treatment without rinsing
Skin	Irritating		4 h	24; 72 hours	Rabbit	Experimental value	
Inhalation	Irritating; STOT SE cat.3					Annex VI	

Conclusion

Causes skin irritation.

Causes serious eye irritation.

Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

TWINBOND SIP 1K

No (test)data on the mixture available

Judgement is based on the relevant ingredients

toluene

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	EU Method B.6			Guinea pig (female)	Experimental value	

butan-1-ol

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	Equivalent to OECD 429			Mouse (female)	Experimental value	

n-butyl methacrylate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing	OECD 429			Mouse (female)	Experimental value	
Skin	Sensitizing	OECD 406			Guinea pig (male / female)	Experimental value	

methyl methacrylate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Dermal (on the ears)	Sensitizing	Equivalent to OECD 429			Mouse	Experimental value	

Conclusion

Not classified as sensitizing for inhalation

Not classified as sensitizing for skin

Specific target organ toxicity

TWINBOND SIP 1K

No (test)data on the mixture available

Classification is based on the relevant ingredients

toluene

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL	Equivalent to EU Method B.26	625 mg/kg bw/day		No effect	13 weeks (5 days / week)	Rat (male / female)	Experimental value
Oral (stomach tube)	LOAEL	Equivalent to EU Method B.26	1250 mg/kg bw/day		neurotoxic effects	13 weeks (5 days / week)	Rat (male / female)	Experimental value
Dermal								Data waiving
Inhalation (vapours)	LOAEC	Equivalent to OECD 453	2261 mg/m³ air	Nose	Erosion/degeneration nasal epithelia	103 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value
Inhalation (vapours)	LOAEC	Subchronic toxicity test	4710 mg/m³ air	Blood	Change in the haemogramme/blood composition	13 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value
Inhalation			STOT RE cat.2	Central nervous system	neurotoxic effects			Literature study
Inhalation			STOT SE cat.3		Drowsiness, dizziness			Annex VI

butan-1-ol

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOEL	Subchronic toxicity test	125 mg/kg bw/day		No effect	13 weeks (daily)	Rat (male / female)	Experimental value
Oral (stomach tube)	LOEL	Subchronic toxicity test	500 mg/kg bw/day	Central nervous system	Central nervous system depression	13 weeks (daily)	Rat (male / female)	Experimental value
Skin	Dose level	Subacute toxicity test	100 %	Skin	Irritation	3 week(s)	Rabbit	Experimental value
Inhalation (vapours)	NOAEL	EPA OTS 798.2450	500 ppm		No effect	13 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value
Inhalation (vapours)	Dose level	EPA OTS 798.2450	1500 ppm	Central nervous system	Drowsiness, dizziness	13 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value

n-butyl methacrylate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL	OECD 408	120 mg/kg bw/day	Liver; kidney	No effect	3 month(s)	Rat (male / female)	Experimental value
Dermal								Data waiving
Inhalation (aerosol)	NOAEC local effects	OECD 412	310 ppm	Nose	No effect	4 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value
Inhalation (aerosol)	NOAEC systemic effects	OECD 412	1891 ppm		No adverse systemic effects	4 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value

methyl methacrylate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (drinking water)	NOAEL		≥ 124.1 mg/kg bw/day		No effect	104 week(s)	Rat (male)	Experimental value
Oral (drinking water)	NOAEL		≥ 164 mg/kg bw/day		No effect	104 week(s)	Rat (female)	Experimental value
Inhalation (vapours)	NOAEC systemic effects	Equivalent to OECD 453	1640 mg/m³ air		No adverse systemic effects	104 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value
Inhalation (vapours)	LOAEC local effects	Equivalent to OECD 453	416 mg/m³ air	Nose	Affection of the nasal septum	104 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value
Inhalation (vapours)	NOAEC local effects	Equivalent to OECD 453	104 mg/m³ air	Nose	No effect	104 weeks (6h / day, 5 days / week)	Rat (male / female)	Experimental value

Conclusion

May cause drowsiness or dizziness.

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

Mutagenicity (in vitro)

TWINBOND SIP 1K

No (test)data on the mixture available

Judgement is based on the relevant ingredients

toluene

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 476	Mouse (lymphoma L5178Y cells)	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	Equivalent to EU Method B.13/14	Bacteria (S.typhimurium)	No effect	Experimental value	

butan-1-ol

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 476	Chinese hamster lung fibroblasts (V79)	No effect	Experimental value	

n-butyl methacrylate

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 476	Chinese hamster lung fibroblasts (V79)	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	

methyl methacrylate

Result	Method	Test substrate	Effect	Value determination	Remark
Ambiguous	Equivalent to OECD 473	Chinese hamster ovary (CHO)		Experimental value	
Negative	Equivalent to OECD 471	Bacteria (S.typhimurium)	No effect	Literature study	

Mutagenicity (in vivo)

TWINBOND SIP 1K

No (test)data on the mixture available

Judgement is based on the relevant ingredients

toluene

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Intraperitoneal)		5 dose(s)/24-hour interval	Rat		Experimental value
Negative (Inhalation (vapours))	Equivalent to OECD 478	8 weeks (6h / day, 5 days / week)	Mouse (male)		Experimental value

butan-1-ol

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

n-butyl methacrylate

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

methyl methacrylate

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative (Inhalation (vapours))	Equivalent to OECD 478	5 days (6h / day)	Mouse (male)		Experimental value

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

TWINBOND SIP 1K

No (test)data on the mixture available

Judgement is based on the relevant ingredients

toluene

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Inhalation (vapours)	NOAEC	Equivalent to OECD 453	4522 mg/m³ air	103 weeks (6h / day, 5 days / week)	Rat (male / female)	No carcinogenic effect		Experimental value
Dermal	NOAEL	Carcinogenic toxicity study	0.05 ml (twice a week)		Mouse (male)	No effect		Experimental value

n-butyl methacrylate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Inhalation (vapours)	NOAEC	Equivalent to OECD 451	≥ 2.05 mg/l air	102 weeks (6h / day, 5 days / week)	Rat (female)	No carcinogenic effect		Experimental value
Inhalation (vapours)	NOAEC	Equivalent to OECD 451	≥ 4.1 mg/l air	102 weeks (6h / day, 5 days / week)	Rat (male)	No carcinogenic effect		Experimental value
Oral (drinking water)	NOAEL	Carcinogenic toxicity study	≥ 90.3 mg/kg bw/day	104 weeks (daily)	Rat (male)	No carcinogenic effect		Experimental value
Oral (drinking water)	NOAEL	Carcinogenic toxicity study	≥ 193.8 mg/kg bw/day	104 weeks (daily)	Rat (female)	No carcinogenic effect		Experimental value

methyl methacrylate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Inhalation (vapours)	NOAEC	Equivalent to OECD 451	≥ 2.05 mg/l air	102 weeks (6h / day, 5 days / week)	Rat (male / female)	No carcinogenic effect		Experimental value
Oral (drinking water)	NOAEL	Carcinogenic toxicity study	≥ 90.3 mg/kg bw/day	104 weeks (daily)	Rat (male)	No carcinogenic effect		Experimental value
Oral (drinking water)	NOAEL	Carcinogenic toxicity study	≥ 193.8 mg/kg bw/day	104 weeks (daily)	Rat (female)	No carcinogenic effect		Experimental value

Conclusion

Not classified for carcinogenicity

Reproductive toxicity

TWINBOND SIP 1K

No (test)data on the mixture available

Classification is based on the relevant ingredients

toluene

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Inhalation (vapours))	NOAEC	OECD 414	1894 mg/m³ air	13 days (gestation, daily)	Rabbit	No effect		Experimental value
Maternal toxicity (Inhalation (vapours))	NOAEC	OECD 414	1884 mg/m³ air	13 days (gestation, daily)	Rabbit	No effect		Experimental value
Effects on fertility (Inhalation (vapours))	NOAEC	OECD 416	7500 mg/m³ air	11 weeks (6h / day, 7 days / week)	Rat (male / female)	No effect		Experimental value

butan-1-ol

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Oral (drinking water))	NOAEL	Equivalent to OECD 414	1454 mg/kg bw/day	21 day(s)	Rat	No effect	Foetus	Experimental value
Maternal toxicity (Oral (drinking water))	NOAEL	Equivalent to OECD 414	1454 mg/kg bw/day	21 day(s)	Rat	No effect		Experimental value
Effects on fertility (Inhalation (vapours))	NOAEC	OECD 416	2000 ppm		Rat (male / female)	No effect		Experimental value

n-butyl methacrylate

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Oral (stomach tube))	NOAEL	OECD 414	300 mg/kg bw/day	23 day(s)	Rabbit	No effect	Foetus	Experimental value
Maternal toxicity (Oral (stomach tube))	NOAEL	OECD 414	100 mg/kg bw/day	23 day(s)	Rabbit	No effect		Experimental value
Effects on fertility (Oral (stomach tube))	NOAEL (P/F1)	OECD 416	400 mg/kg bw/day		Rat (male / female)	No effect		Experimental value

methyl methacrylate

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Inhalation (vapours))	NOAEC	OECD 414	8.44 mg/l air	10 days (6h / day)	Rat	No effect	Foetus	Experimental value
Maternal toxicity (Inhalation (vapours))	NOAEC	OECD 414	8.44 mg/l air	10 days (6h / day)	Rat	No effect		Experimental value
Effects on fertility (Oral (stomach tube))	NOAEL	OECD 416	400 mg/kg bw/day		Rat (male / female)	No effect		Experimental value

Conclusion

Suspected of damaging the unborn child.

Toxicity other effects

TWINBOND SIP 1K

No (test)data on the mixture available

Chronic effects from short and long-term exposure

TWINBOND SIP 1K

Skin rash/inflammation. Dry skin. Change in the haemogramme/blood composition. Impairment of the nervous system. Impaired memory. Impaired concentration. Brain affection.

11.2. Information on other hazards

No evidence of endocrine disrupting properties

SECTION 12: Ecological information

12.1. Toxicity

TWINBOND SIP 1K

No (test)data on the mixture available

Judgement of the mixture is based on the relevant ingredients

toluene

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		5.5 mg/l	96 h	Oncorhynchus kisutch	Flow-through system	Fresh water	Experimental value; Lethal
Acute toxicity crustacea	LC50	US EPA	3.78 mg/l	48 h	Ceriodaphnia dubia	Daily renewal	Fresh water	Experimental value; Lethal
Toxicity algae and other aquatic plants	EC50		134 mg/l	3 h	Chlamydomonas angulosa	Static system	Fresh water	Experimental value; Nominal concentration
	NOEC	Equivalent to OECD 201	10 mg/l	72 h	Skeletonema costatum		Salt water	Experimental value; Nominal concentration
Long-term toxicity fish	NOEC		1.39 mg/l	40 day(s)	Oncorhynchus kisutch	Flow-through system	Fresh water	Experimental value; Growth rate
Long-term toxicity aquatic crustacea	NOEC	EPA 600/4-91-003	0.74 mg/l	7 day(s)	Ceriodaphnia dubia		Fresh water	Experimental value; Reproduction
Toxicity aquatic micro-organisms	EC50		84 mg/l	24 h	Nitrosomonas	Static system	Fresh water	Experimental value

Classification of this substance is debatable as it does not correspond to the conclusion from the test

butan-1-ol

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	1376 mg/l	96 h	Pimephales promelas	Static system	Fresh water	Experimental value; GLP
Acute toxicity crustacea	EC50	OECD 202	1328 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; GLP
Toxicity algae and other aquatic plants	ErC50	OECD 201	225 mg/l	96 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; GLP
Long-term toxicity aquatic crustacea	NOEC	OECD 211	4.1 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; Reproduction
Toxicity aquatic micro-organisms	EC50	DIN 38412-8	4390 mg/l	17 h	Pseudomonas putida	Static system	Fresh water	Experimental value; Growth

n-butyl methacrylate

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	11 mg/l	96 h	Pimephales promelas	Flow-through system	Fresh water	Experimental value; GLP
Acute toxicity crustacea	EC50	OECD 202	25.4 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; GLP
Toxicity algae and other aquatic plants	EC50	OECD 201	31.2 mg/l	72 h	Pseudokirchneriella subcapitata	Static system		Experimental value; Growth rate
	NOEC	OECD 201	24.8 mg/l	72 h	Pseudokirchneriella subcapitata	Static system		Experimental value; Growth rate
Long-term toxicity fish								Data waiving
Long-term toxicity aquatic crustacea	NOEC	OECD 211	1.1 mg/l	21 day(s)	Daphnia magna		Fresh water	Experimental value; Reproduction

methyl methacrylate

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		> 100 mg/l		Pisces			Literature study
Acute toxicity crustacea	EC50	EPA OTS 797.1300	69 mg/l	48 h	Daphnia magna	Flow-through system	Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	EC50	OECD 201	> 110 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Growth rate
	NOEC	OECD 201	110 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Growth rate
Long-term toxicity aquatic crustacea	NOEC	OECD 211	37 mg/l	21 day(s)	Daphnia magna	Flow-through system	Fresh water	Experimental value; Reproduction
Toxicity aquatic micro-organisms	Dose level	OECD 301C	100 mg/l	14 day(s)	Activated sludge	Static system	Fresh water	Experimental value
	EC50		> 178 mg/l	48 h	Chilomas sp.			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

toluene

Biodegradation water

Method	Value	Duration	Value determination
APHA	86 %; Oxygen consumption	20 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
	2.59 day(s)	500000 /cm³	Calculated value

Half-life soil (t1/2 soil)

Method	Value	Primary degradation/mineralisation	Value determination
	2.6 day(s)		Literature study

butan-1-ol

Biodegradation water

Method	Value	Duration	Value determination
APHA	92 %; Oxygen consumption	20 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	18.629 h	1.5E6 /cm³	Calculated value

n-butyl methacrylate

Biodegradation water

Method	Value	Duration	Value determination
OECD 301C	88 %; Oxygen consumption	28 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	16.968 h	0.5E6 /cm³	Calculated value

methyl methacrylate

Biodegradation water

Method	Value	Duration	Value determination
OECD 301C	94 %; Oxygen consumption	14 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
AOPWIN v1.92	6.997 h	1.5E6 /cm³	QSAR

Half-life water (t1/2 water)

Method	Value	Primary degradation/mineralisation	Value determination
	53 month(s); pH = 7		Experimental value

Conclusion

Water

Contains readily biodegradable component(s)

12.3. Bioaccumulative potential

TWINBOND SIP 1K

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

toluene

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		90	72 h	Leuciscus idus	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
		2.73	20 °C	Experimental value

butan-1-ol

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 117		1	25 °C	Experimental value

n-butyl methacrylate

Log Kow

Method	Remark	Value	Temperature	Value determination
Equivalent to OECD 107		2.99	20 °C	Experimental value

methyl methacrylate

Log Kow

Method	Remark	Value	Temperature	Value determination
Equivalent to OECD 107		1.38	20 °C	Experimental value

Conclusion

Does not contain bioaccumulative component(s)

12.4. Mobility in soil

toluene

(log) Koc

Parameter	Method	Value	Value determination
Koc		205	Literature study

Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Mackay level I	99.47 %	0.00 %	0.02 %	0.02 %	0.49 %	Calculated value

butan-1-ol

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	0.54	Calculated value

n-butyl methacrylate

(log) Koc

Parameter	Method	Value	Value determination
Koc	OECD 106	2767	Experimental value
log Koc		3.44	Calculated value

methyl methacrylate

(log) Koc

Parameter	Method	Value	Value determination
log Koc	EPA OTS 796.2750	0.94 - 1.86	Experimental value

Conclusion

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

12.5. Results of PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties

12.7. Other adverse effects

TWINBOND SIP 1K

Greenhouse gases

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

Ozone-depleting potential (ODP)

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

Groundwater

Groundwater pollutant

toluene

Groundwater

Groundwater pollutant

butan-1-ol

Groundwater

Groundwater pollutant

methyl methacrylate

Groundwater

Groundwater pollutant

SECTION 13: Disposal considerations

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

13.1. Waste treatment methods

13.1.1 Provisions relating to waste

European Union

Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).
08 04 09* (wastes from MFSU of adhesives and sealants (including waterproofing products): waste adhesives and sealants containing organic solvents or other hazardous substances). Depending on branch of industry and production process, also other waste codes may be applicable.

13.1.2 Disposal methods

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

13.1.3 Packaging/Container

European Union

Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1. UN number

UN number	1993

14.2. UN proper shipping name

Proper shipping name	flammable liquid, n.o.s. (toluene)

14.3. Transport hazard class(es)

Hazard identification number	33
Class	3
Classification code	F1

14.4. Packing group

Packing group	II
Labels	3

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	274
Special provisions	601
Special provisions	640D
Limited quantities	Combination packagings: not more than 1 liter per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

Rail (RID)

14.1. UN number

UN number	1993

14.2. UN proper shipping name

Proper shipping name	flammable liquid, n.o.s. (toluene)

14.3. Transport hazard class(es)

Hazard identification number	33
Class	3
Classification code	F1

14.4. Packing group

Packing group	II
Labels	3

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	274
Special provisions	601
Special provisions	640D
Limited quantities	Combination packagings: not more than 1 liter per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

Inland waterways (ADN)

14.1. UN number

UN number	1993

14.2. UN proper shipping name

Proper shipping name	flammable liquid, n.o.s. (toluene)

14.3. Transport hazard class(es)

Class	3
Classification code	F1

14.4. Packing group

Packing group	II
Labels	3

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	274
Special provisions	601
Special provisions	640D
Limited quantities	Combination packagings: not more than 1 liter per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

Sea (IMDG/IMSBC)

14.1. UN number

UN number	1993

14.2. UN proper shipping name

Proper shipping name	flammable liquid, n.o.s. (toluene)

14.3. Transport hazard class(es)

Class	3

14.4. Packing group

Packing group	II
Labels	3

14.5. Environmental hazards

Marine pollutant	-
Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	274
Limited quantities	Combination packagings: not more than 1 liter per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

14.7. Maritime transport in bulk according to IMO instruments

Annex II of MARPOL 73/78	Not applicable, based on available data

Air (ICAO-TI/IATA-DGR)

14.1. UN number

UN number	1993

14.2. UN proper shipping name

Proper shipping name	flammable liquid, n.o.s. (toluene)

14.3. Transport hazard class(es)

Class	3

14.4. Packing group

Packing group	II
Labels	3

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	A3

Passenger and cargo transport

Limited quantities: maximum net quantity per packaging	1 L

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
59.14 %	

toluene

Product name	Skin resorption
Toluene	Skin

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
· toluene · butan-1-ol · n-butyl methacrylate · methyl methacrylate	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	1. Shall not be used in: — ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any article intended to be used as such, even with ornamental aspects, 2. Articles not complying with paragraph 1 shall not be placed on the market. 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: — can be used as fuel in decorative oil lamps for supply to the general public, and,

	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, 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN). 5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met: a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: “Keep lamps filled with this liquid out of the reach of children”; and, by 1 December 2010, “Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life- threatening lung damage”; b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: “Just a sip of grill lighter may lead to life threatening lung damage”; c) lamp oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
· toluene · butan-1-ol · n-butyl methacrylate · methyl methacrylate	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to that Regulation or not.	1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following: — metallic glitter intended mainly for decoration, — artificial snow and frost, — “whoopee” cushions, — silly string aerosols, — imitation excrement, — horns for parties, — decorative flakes and foams, — artificial cobwebs, — stink bombs. 2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: “For professional users only”. 3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/ 324/EEC. 4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.
· toluene	Toluene	Shall not be placed on the market, or used, as a substance or in mixtures in a concentration equal to or greater than 0,1 % by weight where the substance or mixture is used in adhesives or spray paints intended for supply to the general public.
· toluene · butan-1-ol · n-butyl methacrylate · methyl methacrylate	Substances falling within one or more of the following points: (a) substances classified as any of the following in Part 3 of Annex VI to Regulation (EC) No 1272/2008: — carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, but excluding any such substances classified due to effects only following exposure by inhalation — reproductive toxicant category 1A, 1B or 2 but excluding any such substances classified due to effects only following exposure by inhalation — skin sensitiser category 1, 1A or 1B — skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2 — serious eye damage category 1 or eye irritant category 2 (b) substances listed in Annex II to Regulation (EC) No 1223/2009 of the European Parliament and of the Council (c) substances listed in Annex IV to Regulation (EC) No 1223/2009 for which a condition is specified in at least one of the columns g, h and i of the table in that Annex (d) substances listed in Appendix 13 to this Annex. The ancillary requirements in paragraphs 7 and 8 of column 2 of this entry apply to all mixtures for use for tattooing purposes, whether or not they contain a substance falling within points (a) to (d) of this column of this entry.	Mixtures for tattooing purposes are subject to the restrictions of Regulation (EU) 2020/2081

National legislation Belgium

TWINBOND SIP 1K

No data available

toluene

Résorption peau	Toluène; D; La mention “D” signifie que la résorption de l’agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l’exposition totale. Cette résorption peut se faire tant par contact direct que par présence de l’agent dans l’air.

butan-1-ol

Résorption peau	Alcool n-butylique; D; La mention “D” signifie que la résorption de l’agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l’exposition totale. Cette résorption peut se faire tant par contact direct que par présence de l’agent dans l’air.

National legislation The Netherlands

TWINBOND SIP 1K

Waterbezwaarlijkheid	B (2); Algemene Beoordelingsmethodiek (ABM)

toluene

SZW - Lijst van voor de voortplanting giftige stoffen (ontwikkeling)	Tolueen; Opgenomen in SZW-lijst van voor de voortplanting giftige stoffen (ontwikkeling); 2

National legislation France

TWINBOND SIP 1K

No data available

toluene

Catégorie toxique pour la reproduction	Toluène; R2
Risque de pénétration percutanée	Toluène; Risque de pénétration percutanée

National legislation Germany

TWINBOND SIP 1K

Lagerklasse (TRGS510)	3: Entzündbare Flüssigkeiten
WGK	2; Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017

toluene

TA-Luft	5.2.5/I
TRGS900 - Risiko der Fruchtschädigung	Toluol; Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes nicht befürchtet zu werden
Hautresorptive Stoffe	Toluol; H; Hautresorptiv

butan-1-ol

TA-Luft	5.2.5
TRGS900 - Risiko der Fruchtschädigung	Butan-1-ol; Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes nicht befürchtet zu werden

n-butyl methacrylate

TA-Luft	5.2.5

methyl methacrylate

TA-Luft	5.2.5
TRGS900 - Risiko der Fruchtschädigung	Methyl-methacrylat; Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes nicht befürchtet zu werden

National legislation United Kingdom

TWINBOND SIP 1K

No data available

toluene

Skin absorption	Toluene; Sk

butan-1-ol

Skin absorption	Butan-1-ol; Sk

Other relevant data

TWINBOND SIP 1K

No data available

toluene

TLV - Carcinogen	Toluene; A4
IARC - classification	3; Toluene

methyl methacrylate

TLV - Carcinogen	Methyl methacrylate; A4
IARC - classification	3; Methyl methacrylate
TLV - Skin Sensitisation	Methyl methacrylate; SEN; Sensitization

15.2. Chemical safety assessment

No chemical safety assessment has been conducted for the mixture.

toluene

A chemical safety assessment has been performed.

SECTION 16: Other information

Full text of any H- and EUH-statements referred to under section 3:

H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H361d Suspected of damaging the unborn child if inhaled.
H361d Suspected of damaging the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure if inhaled.
H373 May cause damage to organs (central nervous system) through prolonged or repeated exposure if inhaled.
EUH208 Contains a sensitising substance. May produce an allergic reaction.

(*)	INTERNAL CLASSIFICATION BY BIG
ADI	Acceptable daily intake
AOEL	Acceptable operator exposure level
ATE	Acute Toxicity Estimate
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)
DMEL	Derived Minimal Effect Level
DNEL	Derived No Effect Level
EC50	Effect Concentration 50 %
ErC50	EC50 in terms of reduction of growth rate
LC50	Lethal Concentration 50 %
LD50	Lethal Dose 50 %
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative & Toxic
PNEC	Predicted No Effect Concentration
STP	Sludge Treatment Process
vPvB	very Persistent & very Bioaccumulative

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.