SAFETY DATA SHEET

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

AL-FIX FLEXIBLE

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

1.1. Product identifier

Product name : AL-FIX FLEXIBLE
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

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

Manufacturer of the product

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

1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch) :
+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Class	Category	Hazard statements
Skin Irrit.	category 2	H315: Causes skin irritation.
Eye Irrit.	category 2	H319: Causes serious eye irritation.
STOT SE	category 3	H335: May cause respiratory irritation.

2.2. Label elements

Contains: ethyl 2-cyanoacrylate.

Signal word Warning

H-statements

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.
P302 + P352 IF ON SKIN: Wash with plenty of water and soap.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER/doctor if you feel unwell.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Supplemental information

EUH202 Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children.

EUH208 Contains: phthalic anhydride. May produce an allergic reaction.

2.3. Other hazards

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
ethyl 2-cyanoacrylate 01-2119527766-29	7085-85-0 230-391-5	70% <C<90%	Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 STOT SE 3; H335: C≥10%, (CLP Annex VI (ATP 0))	(1)(2)(10)	Constituent	
phthalic anhydride	85-44-9 201-607-5	C<1%	Resp. Sens. 1; H334 Skin Sens. 1; H317 Acute Tox. 4; H302 Eye Dam. 1; H318 Skin Irrit. 2; H315 STOT SE 3; H335	(1)(2)(10)	Constituent	
1,4-dihydroxybenzene 01-2119524016-51	123-31-9 204-617-8	C<0.1%	Muta. 2; H341 Carc. 2; H351 Skin Sens. 1; H317 Acute Tox. 4; H302 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)(2)(10)	Constituent	M: 10 (Acute, CLP Annex VI (ATP 1)) M: 1 (Chronic, ECHA (registration dossier))

(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:

Do not pull surfaces apart with a direct opposing action. Immerse the bonded surfaces in warm, soapy water. Peel or roll surfaces apart with a blunt edge, e.g. spatula. Consult a doctor/medical service.

After eye contact:

Do not try to open the eyes by manipulation. Wash thoroughly with warm water. Apply a moist gauze patch. Consult a doctor/medical service.

After ingestion:

Do not try to pull the lips with a direct opposing action. Apply lots of warm water and saliva. Immediately consult a doctor/medical service.

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

4.2.1 Acute symptoms

After inhalation:

Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Respiratory difficulties.

After skin contact:

Tingling/irritation of the skin.

After eye contact:

Irritation of the eye tissue.

After ingestion:

No effects known.

4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.1.1 Suitable extinguishing media:

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). Polymerizes on exposure to water (moisture) and on exposure to temperature rise: pressure rise and possible bursting of container.

5.3. Advice for firefighters

5.3.1 Instructions:

Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water.

5.3.2 Special protective equipment for fire-fighters:

Gloves (EN 374). Face shield (EN 166). 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

No naked flames. Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.

6.1.1 Protective equipment for non-emergency personnel

See section 8.2

6.1.2 Protective equipment for emergency responders

Gloves (EN 374). Face shield (EN 166). Protective clothing (EN 14605 or EN 13034).

Suitable protective clothing

See section 8.2

6.2. Environmental precautions

Contain released product.

6.3. Methods and material for containment and cleaning up

Moisten the contaminated surfaces. Allow product to solidify and remove it by mechanical means. Clean contaminated surfaces with an excess of water. 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. Gas/vapour heavier than air at 20°C. Observe strict hygiene. Keep container tightly closed.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Meet the legal requirements. Store in a cool area. Store in a dry area. Keep container in a well-ventilated place. Keep out of direct sunlight. Keep only in the original container. Keep container tightly closed.

7.2.2 Keep away from:

Heat sources, oxidizing agents, (strong) acids.

7.2.3 Suitable packaging material:

No data available

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.

Belgium

2-Cyanoacrylate d'éthyle	Time-weighted average exposure limit 8 h	0.2 ppm
	Time-weighted average exposure limit 8 h	1.04 mg/m³
Anhydride phtalique	Time-weighted average exposure limit 8 h	1 ppm
	Time-weighted average exposure limit 8 h	6.2 mg/m³
Hydroquinone	Time-weighted average exposure limit 8 h	1 mg/m³

France

Anhydride phtalique	Short time value (VL: Valeur non réglementaire indicative)	6 mg/m³
Hydroquinone	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	2 mg/m³

Germany

1,4-Dihydroxybenzol	*Der Stoff kann gleichzeitig als Dampf und Aerosol vorliegen.*
Cyanacrylsäureethylester	*vgl. Abschn. IIb*
Phthalsäureanhydrid	*vgl. Abschn. IIb*

Austria

1,4-Dihydroxybenzol	Tagesmittelwert (MAK)	2 mg/m³ **(1)**
	Kurzzeitwert 5(Mow) 8x (MAK)	4 mg/m³ **(1)**
Cyanacrylsäureethylester	Tagesmittelwert (MAK)	2 ppm
	Tagesmittelwert (MAK)	9 mg/m³
Phthalsäureanhydrid	Tagesmittelwert (MAK)	1 mg/m³ **(1)**
	Kurzzeitwert 5(Mow) 8x (MAK)	2 mg/m³ **(1)**

(1) Einatembare Fraktion

UK

Ethyl cyanoacrylate	Short time value (Workplace exposure limit (EH40/2005))	0.3 ppm
	Short time value (Workplace exposure limit (EH40/2005))	1.5 mg/m³
Hydroquinone	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	0.5 mg/m³
Phthalic anhydride	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	4 mg/m³
	Short time value (Workplace exposure limit (EH40/2005))	12 mg/m³

Ireland

Cyanoacrylates, Ethyl and Methyl	Time-weighted average exposure limit 8 h (Advisory occupational exposure limit values)	0.2 ppm
	Short time value (Advisory occupational exposure limit values)	1 ppm
Ethyl cyanoacrylate	Time-weighted average exposure limit 8 h (Advisory occupational exposure limit values)	0.2 ppm
	Short time value (Advisory occupational exposure limit values)	1 ppm
Hydroquinone	Time-weighted average exposure limit 8 h (Advisory occupational exposure limit values)	0.5 mg/m³
Phthalic anhydride	Time-weighted average exposure limit 8 h (Advisory occupational exposure limit values)	1 ppm
	Short time value (Advisory occupational exposure limit values)	12 mg/m³

USA (TLV-ACGIH)

Cyanoacrylates, Ethyl and Methyl	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.2 ppm
	Short time value (TLV - Adopted Value)	1 ppm
Hydroquinone	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	1 mg/m³
Phthalic anhydride	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.002 mg/m³ **(1)**
	Short time value (TLV - Adopted Value)	0.005 mg/m³ **(1)**

(1) (IFV): Inhalable fraction and vapor

b) National biological limit values

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

USA (BEI-ACGIH)

Methemoglobin inducers (Methemoglobin)	Blood: during or end of shift	5 % of hemoglobin	Background, Nonspecific

8.1.2 Sampling methods

Product name	Test	Number
Ethyl 2-Cyanoacrylate	OSHA	55
Hydroquinone	NIOSH	5004
Hydroquinone	OSHA	2094
Phthalic Anhydride	OSHA	90

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

ethyl 2-cyanoacrylate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	9.25 mg/m³	
	Acute systemic effects inhalation	9.25 mg/m³	
	Long-term local effects inhalation	9.25 mg/m³	
	Acute local effects inhalation	9.25 mg/m³	

phthalic anhydride

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	49.4 mg/m³	
	Long-term systemic effects dermal	14 mg/kg bw/day	

1,4-dihydroxybenzene

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	2.1 mg/m³	
	Long-term systemic effects dermal	3.33 mg/kg bw/day	

DNEL/DMEL - General population

ethyl 2-cyanoacrylate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	9.25 mg/m³	
	Acute systemic effects inhalation	9.25 mg/m³	
	Long-term local effects inhalation	9.25 mg/m³	
	Acute local effects inhalation	9.25 mg/m³	

phthalic anhydride

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	8.7 mg/m³	
	Long-term systemic effects dermal	5 mg/kg bw/day	
	Long-term systemic effects oral	5 mg/kg bw/day	
	Acute systemic effects oral	25 mg/m³	

1,4-dihydroxybenzene

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	1.05 mg/m³	
	Long-term systemic effects dermal	1.66 mg/kg bw/day	
	Long-term systemic effects oral	0.6 mg/kg bw/day	

PNEC

phthalic anhydride

Compartments	Value	Remark
Fresh water	1 mg/l	
Marine water	0.1 mg/l	
Fresh water (intermittent releases)	5.6 mg/l	
STP	10 mg/l	
Fresh water sediment	3.8 mg/kg sediment dw	
Marine water sediment	0.38 mg/kg sediment dw	
Soil	0.173 mg/kg soil dw	

1,4-dihydroxybenzene

Compartments	Value	Remark
Fresh water	0.57 µg/l	
Fresh water (intermittent releases)	1.34 µg/l	
Marine water	0.057 µg/l	
STP	0.71 mg/l	
Fresh water sediment	4.9 µg/kg sediment dw	
Marine water sediment	0.49 µg/kg sediment dw	
Soil	0.64 µg/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. 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 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
butyl rubber	> 480 minutes	0.7 mm	Class 6	
viton	> 480 minutes		Class 6	

c) Eye protection:

Face shield (EN 166).

d) Skin protection:

Protective clothing (EN 14605 or EN 13034).

8.2.3 Environmental exposure controls:

See sections 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical form	Liquid
Viscosity	Viscous
Colour	Colourless
Odour	Characteristic odour
Odour threshold	No data available in the literature
Melting point	No data available in the literature
Boiling point	150 °C
Flammability	Not classified as flammable
Explosion limits	No data available in the literature
Flash point	87 °C
Auto-ignition temperature	No data available in the literature
Decomposition temperature	No data available in the literature
pH	Not applicable (non-soluble in water)
Kinematic viscosity	No data available in the literature
Dynamic viscosity	No data available in the literature
Solubility	Water ; insoluble
Log Kow	Not applicable (mixture)
Vapour pressure	No data available in the literature
Absolute density	1050 kg/m³
Relative density	1.05
Relative vapour density	No data available in the literature
Particle size	Not applicable (liquid)

9.2. Other information

No data available

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

Polymerizes on exposure to water (moisture) and on exposure to temperature rise: pressure rise and possible bursting of container.

10.4. Conditions to avoid

Precautionary measures

Keep away from naked flames/heat.

10.5. Incompatible materials

Oxidizing agents, (strong) acids.

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

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

11.1.1 Test results

Acute toxicity

AL-FIX FLEXIBLE

No (test)data on the mixture available

Judgement is based on the relevant ingredients

ethyl 2-cyanoacrylate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 423	> 5000 mg/kg bw		Rat (male)	Experimental value	
Skin	LD50	Equivalent to OECD 402	> 2000 mg/kg bw	24 h	Rabbit (male)	Experimental value	
Inhalation						Data waiving	

phthalic anhydride

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		1530 mg/kg		Rat (male)	Experimental value	
Dermal	LD50		> 3160 mg/kg		Rabbit	Experimental value	
Inhalation (aerosol)	LC50	OECD 403	> 2.14 mg/l	4 h	Rat (male / female)	Experimental value	

1,4-dihydroxybenzene

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 401	> 375 mg/kg bw		Rat (male / female)	Experimental value	
Dermal	LD50	OECD 402	> 2000 mg/kg bw	24 h	Rabbit (male / female)	Experimental value	
Inhalation						Data waiving	

Conclusion

Not classified for acute toxicity

Corrosion/irritation

AL-FIX FLEXIBLE

No (test)data on the mixture available

Classification is based on the relevant ingredients

ethyl 2-cyanoacrylate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating	Equivalent to OECD 405	72 h	24; 48; 72 hours	Rabbit	Experimental value	
Skin	Slightly irritating	Equivalent to OECD 404	24 h	24; 72 hours	Rabbit	Experimental value	
Skin	Irritating; category 2					Annex VI	
Inhalation	Irritating; STOT SE cat.3					Annex VI	

phthalic anhydride

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage	Draize Test		24; 48; 72 hours	Rabbit	Experimental value	
Skin	Not irritating		24 h	24; 48; 72 hrs; 7 days	Rabbit	Experimental value	
Skin	Irritating; category 2					Annex VI	
Inhalation	Irritating; STOT SE cat.3					Annex VI	

1,4-dihydroxybenzene

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage; category 1					Annex VI	
Skin	Not irritating		24 h	24; 48; 72 hours	Rabbit	Experimental value	

Conclusion

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

Respiratory or skin sensitisation

AL-FIX FLEXIBLE

No (test)data on the mixture available
Judgement is based on the relevant ingredients

ethyl 2-cyanoacrylate

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	Guinea pig maximisation test			Guinea pig (male / female)	Experimental value	

phthalic anhydride

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing	Equivalent to OECD 406			Guinea pig	Experimental value	
Inhalation (dust)	Sensitizing		5 day(s)		Guinea pig (female)	Experimental value	

1,4-dihydroxybenzene

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing	Equivalent to OECD 429	3 day(s)		Mouse (female)	Experimental value	

Conclusion

Not classified as sensitizing for skin
Not classified as sensitizing for inhalation

Specific target organ toxicity

AL-FIX FLEXIBLE

No (test)data on the mixture available
Judgement is based on the relevant ingredients

ethyl 2-cyanoacrylate

Route of exposure	Parameter	Method	Value	Organ/Effect	Exposure time	Species	Value determination	Remark
Oral							Data waiving	
Dermal							Data waiving	
Inhalation							Data waiving	

phthalic anhydride

Route of exposure	Parameter	Method	Value	Organ/Effect	Exposure time	Species	Value determination	Remark
Oral (diet)	NOAEL		500 mg/kg bw/day	No effect	105 weeks (daily)	Rat (male / female)	Experimental value	
Dermal							Data waiving	
Inhalation (vapours)	NOAEC	Subacute toxicity test			4 day(s) - 8 day(s)	Guinea pig (female)	Experimental value	Not quantifiable

1,4-dihydroxybenzene

Route of exposure	Parameter	Method	Value	Organ/Effect	Exposure time	Species	Value determination	Remark
Oral (stomach tube)	NOAEL	Equivalent to OECD 453	25 mg/kg bw/day	No effect	65 weeks (5 days / week) - 104 weeks (5 days / week)	Rat (male)	Experimental value	
Dermal	NOAEL	Equivalent to OECD 411	73.9 mg/l	No effect	13 weeks (6h / day, 5 days / week)	Rat (male)	Experimental value	
Dermal	NOAEL	Equivalent to OECD 411	109.6 mg/kg bw/day	No effect	13 weeks (6h / day, 5 days / week)	Rat (female)	Experimental value	
Inhalation							Data waiving	

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

AL-FIX FLEXIBLE

No (test)data on the mixture available

Judgement is based on the relevant ingredients

ethyl 2-cyanoacrylate

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	OECD 473	Human lymphocytes	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 476	Mouse (lymphoma L5178Y cells)	No effect	Experimental value	

phthalic anhydride

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

1,4-dihydroxybenzene

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	
Positive with metabolic activation, positive without metabolic activation	Equivalent to OECD 476	Mouse (lymphoma L5178Y cells)		Experimental value	

Mutagenicity (in vivo)

AL-FIX FLEXIBLE

No (test)data on the mixture available

Judgement is based on the relevant ingredients

phthalic anhydride

Result	Method	Exposure time	Test substrate	Organ/Effect	Value determination	Remark
Negative (Intraperitoneal)	Equivalent to OECD 474		Mouse (male)	No effect	Experimental value	Single intraperitoneal injection

1,4-dihydroxybenzene

Result	Method	Exposure time	Test substrate	Organ/Effect	Value determination	Remark
Positive (Intraperitoneal)	OECD 474		Mouse (male / female)	Chromosome aberrations	Experimental value	

Conclusion

Not classified for mutagenic or genotoxic toxicity

Carcinogenicity

AL-FIX FLEXIBLE

No (test)data on the mixture available

Judgement is based on the relevant ingredients

phthalic anhydride

Route of exposure	Parameter	Method	Value	Organ/Effect	Exposure time	Species	Value determination	Remark
Oral (diet)	NOAEL	Carcinogenic toxicity study	1000 mg/kg bw/day	No carcinogenic effect	105 weeks (daily)	Rat (male / female)	Experimental value	

1,4-dihydroxybenzene

Route of exposure	Parameter	Method	Value	Organ/Effect	Exposure time	Species	Value determination	Remark
Oral (stomach tube)	Dose level	Equivalent to OECD 453	50 mg/kg bw/day	Kidney (tumor formation)	65 weeks (5 days / week) - 104 weeks (5 days / week)	Rat (male)	Experimental value	
Oral (stomach tube)	Dose level	Equivalent to OECD 453	≥ 25 mg/kg bw/day	Blood (change in the haemogramme/blood composition)	65 weeks (5 days / week) - 104 weeks (5 days / week)	Rat (female)	Experimental value	

Conclusion

Not classified for carcinogenicity

Reproductive toxicity

AL-FIX FLEXIBLE

No (test)data on the mixture available

Judgement is based on the relevant ingredients

ethyl 2-cyanoacrylate

Category	Parameter	Method	Value	Exposure time	Species	Effect	Value determination	Remark
Developmental toxicity							Data waiving	
Effects on fertility							Data waiving	

phthalic anhydride

Category	Parameter	Method	Value	Exposure time	Species	Effect	Value determination	Remark
Developmental toxicity (Oral (diet))	NOAEL	Developmental toxicity study	1763 mg/kg bw/day	10 day(s)	Rat	Foetus (no effect)	Experimental value	
Maternal toxicity (Oral (diet))	NOAEL	Developmental toxicity study	1021 mg/kg bw/day	10 day(s)	Rat	No effect	Experimental value	
Effects on fertility (Oral)		OECD 443			Rat (male / female)		Experimental study planned	

1,4-dihydroxybenzene

Category	Parameter	Method	Value	Exposure time	Species	Effect	Value determination	Remark
Developmental toxicity (Oral (stomach tube))	NOEL	Equivalent to OECD 414	100 mg/kg bw/day	10 days (gestation, daily)	Rat	No effect	Experimental value	
Maternal toxicity (Oral (stomach tube))	NOEL	Equivalent to OECD 414	100 mg/kg bw/day	10 day(s)	Rat	No effect	Experimental value	
Effects on fertility (Oral (stomach tube))	NOAEL (F1/F2)	EPA OTS 798.4700	150 mg/kg bw/day	40 weeks (daily)	Rat (male / female)	No effect	Experimental value	

Conclusion

Not classified for reprotoxic or developmental toxicity

Aspiration hazard

AL-FIX FLEXIBLE

Judgement is based on the relevant ingredients

Not classified for aspiration toxicity

Toxicity other effects

AL-FIX FLEXIBLE

No (test)data on the mixture available

1,4-dihydroxybenzene

Route of exposure	Parameter	Method	Value	Organ/Effect	Exposure time	Species	Value determination	Remark
Intraperitoneal	LD50		160 mg/kg bw/day - 175 mg/kg bw/day	(no effect)		Rat (male / female)	Experimental value	

Chronic effects from short and long-term exposure

AL-FIX FLEXIBLE

Skin rash/inflammation.

11.2. Information on other hazards

No evidence of endocrine disrupting properties

SECTION 12: Ecological information

12.1. Toxicity

AL-FIX FLEXIBLE

No (test)data on the mixture available

Judgement of the mixture is based on the relevant ingredients

phthalic anhydride

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 210	560 mg/l	7 day(s)	Danio rerio	Semi-static system	Fresh water	Experimental value; Nominal concentration
Acute toxicity crustacea	EC50		> 640 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	NOEC	EU Method C.3	≥ 100 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Experimental value; Growth rate
	EC0	EU Method C.3	> 100 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Experimental value; Growth rate
Long-term toxicity fish	NOEC	OECD 210	10 mg/l	60 day(s)	Oncorhynchus mykiss	Semi-static system	Fresh water	Experimental value; Nominal concentration
Long-term toxicity aquatic crustacea	NOEC	OECD 211	16 mg/l	21 day(s)	Daphnia magna		Fresh water	Experimental value; Reproduction
Toxicity aquatic micro-organisms	EC50	ISO 8192	> 1000 mg/l	3 h	Activated sludge	Static system	Fresh water	Experimental value; Respiration
	EC50	ISO 10712	213 mg/l	16 h	Pseudomonas putida	Static system	Fresh water	Read-across; Growth inhibition

1,4-dihydroxybenzene

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	Equivalent to OECD 203	0.64 mg/l	96 h	Oncorhynchus mykiss	Flow-through system	Fresh water	Experimental value; Lethal
Acute toxicity crustacea	EC50	Equivalent to OECD 202	0.061 mg/l	48 h	Daphnia magna	Semi-static system	Fresh water	Experimental value; Locomotor effect
Toxicity algae and other aquatic plants	ErC50	Equivalent to OECD 201	0.053 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; GLP
	NOEC	Equivalent to OECD 201	0.002 mg/l	72 h	Pseudokirchneriella subcapitata	Static system	Fresh water	Experimental value; Growth rate
Long-term toxicity aquatic crustacea	NOEC	OECD 211	0.006 mg/l	21 day(s)	Daphnia magna	Semi-static system	Fresh water	Experimental value; Reproduction
Toxicity aquatic micro-organisms	IC50		71 mg/l	2 h	Activated sludge	Static system	Fresh water	Experimental value; Respiration

Conclusion

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

12.2. Persistence and degradability

ethyl 2-cyanoacrylate

Biodegradation water

Method	Value	Duration	Value determination
EU Method C.4-A	98 %	28 day(s)	Read-across

phthalic anhydride

Biodegradation water

Method	Value	Duration	Value determination
OECD 301C	85.2 %; Oxygen consumption	14 day(s)	Experimental value

1,4-dihydroxybenzene

Biodegradation water

Method	Value	Duration	Value determination
OECD 301C	70 %; Oxygen consumption	14 day(s)	Experimental value

Biodegradation soil

Method	Value	Duration	Value determination
	100 %	1 day(s)	Experimental value

Conclusion

Water

Does not contain any not readily biodegradable component(s)

12.3. Bioaccumulative potential

AL-FIX FLEXIBLE

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

ethyl 2-cyanoacrylate

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
		No data available (test not performed)			

Log Kow

Method	Remark	Value	Temperature	Value determination
EU Method A.8		0.776	22 °C	Experimental value

phthalic anhydride

Log Kow

Method	Remark	Value	Temperature	Value determination
		1.43		Experimental value

1,4-dihydroxybenzene

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF	BCFBAF v3.00	3.2 l/kg			Estimated value

Log Kow

Method	Remark	Value	Temperature	Value determination
		0.59	20 °C - 25 °C	Experimental value

Conclusion

Does not contain bioaccumulative component(s)

12.4. Mobility in soil

ethyl 2-cyanoacrylate

(log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	0.834	Calculated value

phthalic anhydride

(log) Koc

Parameter	Method	Value	Value determination
log Koc		0.30 - 1.49	Calculated value

Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Mackay level I	0 %	0 %	0.04 %	0.04 %	99.91 %	Experimental value

1,4-dihydroxybenzene

(log) Koc

Parameter	Method	Value	Value determination
log Koc		0.97 - 1.6	Estimated value

Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Mackay level I					99.9 %	Experimental value

Conclusion

Contains component(s) with potential for mobility in 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

AL-FIX FLEXIBLE

Greenhouse gases

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590)

Groundwater

Groundwater pollutant

ethyl 2-cyanoacrylate

Greenhouse gases

Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590)

Groundwater

Groundwater pollutant

phthalic anhydride

Greenhouse gases

Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590)

Groundwater

Groundwater pollutant

1,4-dihydroxybenzene

Greenhouse gases

Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590)

Groundwater

Groundwater pollutant

Water ecotoxicity pH

pH shift

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. 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 or ID number

Transport	Not subject
UN number	3334

14.2. UN proper shipping name

Proper shipping name	aviation regulated liquid, n.o.s. (ethyl 2-cyanoacrylate)

14.3. Transport hazard class(es)

Hazard identification number	
Class	9
Classification code	M11

14.4. Packing group

Packing group	
Labels	

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	
Limited quantities	

Rail (RID)

14.1. UN number or ID number

Transport	Not subject
UN number	3334

14.2. UN proper shipping name

Proper shipping name	aviation regulated liquid, n.o.s. (ethyl 2-cyanoacrylate)

14.3. Transport hazard class(es)

Hazard identification number	
Class	9
Classification code	M11

14.4. Packing group

Packing group	
Labels	

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	
Limited quantities	

Inland waterways (ADN)

14.1. UN number or ID number

Transport	Not subject
UN number/ID number	3334

14.2. UN proper shipping name

Proper shipping name	aviation regulated liquid, n.o.s. (ethyl 2-cyanoacrylate)

14.3. Transport hazard class(es)

Class	9
Classification code	M11

14.4. Packing group

Packing group	
Labels	

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	
Limited quantities	

Sea (IMDG/IMSBC)

14.1. UN number or ID number

Transport	Not subject
UN number	3334

14.2. UN proper shipping name

Proper shipping name	aviation regulated liquid, n.o.s. (ethyl 2-cyanoacrylate)

14.3. Transport hazard class(es)

Class	9

14.4. Packing group

Packing group	
Labels	

14.5. Environmental hazards

Marine pollutant	
Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	960
Limited quantities	

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 or ID number

UN number/ID number	3334

14.2. UN proper shipping name

Proper shipping name	aviation regulated liquid, n.o.s. (ethyl 2-cyanoacrylate)

14.3. Transport hazard class(es)

Class	9

14.4. Packing group

Packing group	III
Labels	9

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	A27

Passenger and cargo transport

Limited quantities: maximum net quantity per packaging	30 kg G

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
70 % - 90 %	
735 g/l - 945 g/l	

Directive 2012/18/EU (Seveso III)

Not subject to registration according to Directive 2012/18/EU (Seveso III)

REACH Candidate list

Does not contain component(s) included in candidate list of substances of very high concern (SVHC) for authorisation (Article 59 of Regulation (EC) No 1907/2006)

REACH Annex XIV - Authorisation

Does not contain component(s) included in Annex XIV of Regulation (EC) No 1907/2006: list of substances subject to authorisation

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
· ethyl 2-cyanoacrylate	Liquid substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: (a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F; (b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10; (c) hazard class 4.1; (d) hazard class 5.1.	1. Shall not be used in: — ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any article intended to be used as such, even with ornamental aspects, 2. Articles not complying with paragraph 1 shall not be placed on the market. 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: — can be used as fuel in decorative oil lamps for supply to the general public, and, — present an aspiration hazard and are labelled with H304, 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN). 5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met: a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: “Keep lamps filled with this liquid out of the reach of children”; and, by 1 December 2010, “Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life- threatening lung damage”; b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: “Just a sip of grill lighter may lead to life threatening lung damage”; c) lamp oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
· ethyl 2-cyanoacrylate · phthalic anhydride · 1,4-dihydroxybenzene	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	Mixtures for tattooing purposes are subject to the restrictions of Regulation (EU) 2020/2081

	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.	

National legislation Belgium

AL-FIX FLEXIBLE

No data available

National legislation The Netherlands

AL-FIX FLEXIBLE

Waterbezwaarlijkheid	B (3); Algemene Beoordelingsmethodiek (ABM)

National legislation France

AL-FIX FLEXIBLE

No data available

1,4-dihydroxybenzene

Catégorie cancérogène	Hydroquinone; C2
Catégorie mutagène	Hydroquinone; M2

National legislation Germany

AL-FIX FLEXIBLE

WGK	2; Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017

ethyl 2-cyanoacrylate

TA-Luft	5.2.5

phthalic anhydride

TA-Luft	5.2.5/I

1,4-dihydroxybenzene

TA-Luft	5.2.5/I

National legislation Austria

AL-FIX FLEXIBLE

No data available

phthalic anhydride

Gefahr der Sensibilisierung der Atemwege	Phthalsäureanhydrid; Sa

1,4-dihydroxybenzene

Krebserzeugend	1,4-Dihydroxybenzol; III B
Gefahr der Sensibilisierung der Haut	1,4-Dihydroxybenzol; S
Gefahr der Sensibilisierung der Atemwege	1,4-Dihydroxybenzol; S

National legislation United Kingdom

AL-FIX FLEXIBLE

No data available

phthalic anhydride

Skin Sensitisation	Phthalic anhydride; Sen
Respiratory sensitisation	Phthalic anhydride; Sen

National legislation Ireland

AL-FIX FLEXIBLE

No data available

phthalic anhydride

Dermal sensitisation	Phthalic anhydride; Sens.
Respiratory sensitisation	Phthalic anhydride; Sens.

1,4-dihydroxybenzene

Dermal sensitisation	Hydroquinone; Sens.
Respiratory sensitisation	Hydroquinone; Sens.

Other relevant data

AL-FIX FLEXIBLE

No data available

ethyl 2-cyanoacrylate

TLV - Skin Sensitisation	Cyanoacrylates, Ethyl and Methyl; SEN; Sensitization
TLV - Respiratory Sensitisation	Cyanoacrylates, Ethyl and Methyl; SEN; Sensitization

phthalic anhydride

TLV - Carcinogen	Phthalic anhydride; A4
TLV - Skin Sensitisation	Phthalic anhydride; SEN; Sensitization
TLV - Respiratory Sensitisation	Phthalic anhydride; SEN; Sensitization
TLV - Skin absorption	Phthalic anhydride; Skin; Danger of cutaneous absorption

1,4-dihydroxybenzene

TLV - Carcinogen	Hydroquinone; A3
IARC - classification	3; Hydroquinone
TLV - Skin Sensitisation	Hydroquinone; SEN; Sensitization

15.2. Chemical safety assessment

No chemical safety assessment is required for a mixture.

SECTION 16: Other information

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

H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
EUH202 Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children.
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
BCF	Bioconcentration Factor
BEI	Biological Exposure Indices
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)
DMEL	Derived Minimal Effect Level
DNEL	Derived No Effect Level
EC10	Effect Concentration 10 %
EC50	Effect Concentration 50 %
ErC50	EC50 in terms of reduction of growth rate
GLP	Good Laboratory Practice
LC0	Lethal Concentration 0 %
LC50	Lethal Concentration 50 %
LD50	Lethal Dose 50 %
LOAEC/LOAEL	Lowest Observed Adverse Effect Concentration/Lowest Observed Adverse Effect Level
NOAEC/NOAEL	No Observed Adverse Effect Concentration/No Observed Adverse Effect Level
NOEC/NOEL	No Observed Effect Concentration/No Observed Effect Level
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative & Toxic
PNEC	Predicted No Effect Concentration
STP	Sludge Treatment Process
vPvB	very Persistent & very Bioaccumulative

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.