2. HAZARDS IDENTIFICATION

2.1. Classification of the substance

2.1.1. Classification of the product according to DSD (67/548/EC)

Xi IRRITANT	R 36/37/38 Irritating to eyes, respiratory system and skin

2.1.2. Classification of the product according to CLP (1272/2008/EC)

Eye irrit. 2	H319 Causes serious eye irritation
STOT SE 3	H335 May cause respiratory irritation
Skin irrit. 2	H315 Causes skin irritation

2.2. Label elements according to CLP (1272/2008/EC)

Hazard pictograms

Signal word	Warning
Hazard statements	H319 Causes serious eye irritation H335 May cause respiratory irritation H315 Causes skin irritation EUH202 – "Cyanoacrylate. Danger. Bonds skin and eyes in second. Keep out of the reach of children"
Precautionary statements - Prevention	P280 Wear protective gloves/protective clothing/eye protection/ face protection
Precautionary statements - Response	P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing P332+313 If skin irritation occurs: Get medical advice/attention P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Precautionary statements - Storage	P403+233 Store in a well-ventilated place. Keep container tightly closed
Precautionary statements - Disposal	P501 Dispose of contents/container as hazardous or special waste

3. COMPOSITION/INFORMATION ON INGREDIENTS

Name of substance	CAS No.	EC No.	REACH No.	Concentration	Classification (DSD/CLP)	Specific concentration limits
Ethyl-2-cyanoacrylate	7085-85-0	230-391-5	01-2119527766-29-0001	80 – 99 %	Xi; R36/37/38	C ≥ 10% : Xi; R36/37/38
					Eye irrit. 2 ; H319 STOT SE 3 ; H335 Skin irrit. 2; H315	

4. FIRST AID MEASURES

4.1. Description of first aid measures

General — Call a POISON CENTER or doctor/physician if you feel unwell

Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If still feeling unwell seek medical attention.
Skin	IF ON SKIN: Wash with plenty of soap and water. Do not pull bonded skin apart. It may be gently peeled apart using a blunt object such as a spoon, preferably after soaking in warm soapy water. Cyanoacrylates give off heat on solidification. In rare cases a large drop will generate enough heat to cause a burn. Burns should be treated normally after the adhesive has been removed from the skin. If lips are accidentally stuck together apply warm water to the lips and encourage maximum wetting and pressure from saliva inside the mouth. Peel or roll lips apart. Do not try to pull the lips apart with direct opposing action. If skin irritation occurs: Get medical advice/attention.
Eyes	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If the eye is bonded closed, release eyelashes with warm water by covering with wet pad. Cyanoacrylate will bond to eye protein and will cause periods of weeping which will help to debond the adhesive. Keep eye covered until debonding is complete, usually within 1-3 days. Medical advice should be sought in case solid particles of cyanoacrylate trapped behind the eyelid cause an abrasive damage.
Ingestion	Ensure that breathing passages are not obstructed. The product will polymerise immediately in the mouth making it almost impossible to swallow. Saliva will slowly separate the solidified product from the mouth (several hours).

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

Gross contamination with the adhesive may generate enough heat to cause a burn.

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

Not determined

5. FIREFIGHTING MEASURES

5.1. Extinguishing media	Suitable extinguishing agents: Dry powder, foam, carbon dioxide, fine water spray Unsuitable extinguishing agents: Water jet
5.2. Special hazards arising from the substance or mixture	Trace amounts of toxic fumes may be released on incineration. Hazardous combustion products: oxides of carbon, oxides of nitrogen, irritating organic vapours.
5.3. Advice for fire-fighters	Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and suitable protective clothing.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Wear protective gloves/protective clothing/eye protection/ face protection. Avoid skin and eye contact. Avoid breathing dust/fume/gas/mist/vapours/spray.

6.2. Environmental precautions

Do not let product enter drains.

6.3. Methods and material for containment and cleaning up

Do not use clothes for mopping up. Flood with water to complete polymerisation and scrape off the floor. Cured material can be disposed of as non-hazardous waste.

6.4. Reference to other sections

Safe handling: see section 7
Disposal: see section 13
Personal protective equipment: see section 8

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Ventilation (low level) is recommended when using large volumes. Use of dispensing equipment is recommended to minimise the risk of skin or eye contact. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

For optimum shelf life store in original containers under refrigerated conditions at 2°C to 8°C. Store locked up.

7.3. Specific end use(s)

Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limit values

Country	Type	Value
UK	STEL	0.3 ppm; 1.5 mg.m-3 (15 min)
Ireland	OEL / TWA	0.2 ppm
Germany	MAK	No MAK value established
France	VME/VLE	No VME/VLE established

Derived DNEL(s) / DMEL(s)

Type	Details	Value	Basis

Worker – inhalation route	Systemic effect – Long term exposure	9.25 mg/m³	irritation (respiratory tract)
Worker – inhalation route	Local effect – Long term exposure	9.25 mg/m³	irritation (respiratory tract)
General population – inhalation route	Systemic effect – Long term exposure	9.25 mg/m³	irritation (respiratory tract)
General population – inhalation route	Local effect – Long term exposure	9.25 mg/m³	irritation (respiratory tract)

Derived PNEC(s)

Tests in aqueous media with ethyl-2-cyanoacrylate with the intent to determine effective concentrations or no effect concentrations cannot be performed due to technical reasons based on the chemical properties of the monomer.

8.2. Exposure controls

Appropriate engineering controls: Provide adequate ventilation in area of use. Do NOT use this product in an enclosed or poorly ventilated area. Local exhaust ventilation is normally required when handling or using this product to keep airborne powder below the nationally authorized limits. If ventilation alone cannot control exposure, respiratory protection must be used.

Personal protection:

Respiratory protection: Ensure adequate ventilation.

Hand protection: In circumstances where there is a potential for prolonged or repeated skin contact, the use of polyvinyl chloride or nitrile rubber gauntlets or equivalent solvent resistant gloves is recommended.
The use of chemical resistant gloves such as Nitrile is recommended.
Polyethylene or polypropylene gloves are recommended when using large volumes. Do not use PVC, rubber, nylon or cotton gloves.

Eye protection: Wear protective glasses.

Body protection: Not applicable

Hygiene measures: Good industrial hygiene practices should be observed. Take off contaminated clothing and wash it before reuse. Wash hands thoroughly after handling.

Environmental exposure controls: Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information of basic physical and chemical properties

- Physical state: Liquid
- Colour: Clear

- Odour	pungent
- Odour threshold	Not determined
- pH	Not determined
- Melting point	-31°C
- Boiling point	214 °C (at 1003 mbar)
- Flash point	82.5 °C (at 1003 mbar)
- Evaporation rate	Not determined
- Flammability	Not flammable
- Auto flammability	480°C
- Upper/lower flammability or explosive limits	Not applicable
- Explosive properties	No explosive properties
- Oxidising properties	No oxidising properties
- Vapour pressure	≤ 21 Pa
- % volatile by volume	Not determined
- Vapour density	Not determined
- Specific gravity	1.043 g/cm3 at 20°C
- Solubility in water	≤ 0,024 mg/l
- Other Solvents	Recovery in acetone: 91.8% Recovery in acetonitrile: 96.5%
- Partition coefficient (n-octanol/water)	Log POW 0,776 (calculated)
- Decomposition temperature	Not determined

9.2. Other information

None

10. Stability and reactivity

10.1. Reactivity	Not determined
10.2. Chemical stability	Stable under normal conditions of storage and use
10.3. Possibility of hazardous reactions	Polymerisation will occur in the presence of moisture and other basic materials
10.4. Conditions to	Moisture, humidity, basic material

avoid	
10.5. Incompatible materials	Water, soil, amines, alkalis and alcohols
10.6. Hazardous decomposition materials	Oxides of carbon, oxides of nitrogen

11. Toxicological information

11.1. Information on toxicological effects

- Acute toxicity	Oral: LD50 (oral, rat) > 5000 mg/kg bw (OECD 401) Dermal: LD50 (dermal, rabbit) > 2000 mg/kg bw (OECD 402) Inhalation: In dry atmosphere with < 50% humidity, vapours may irritate the eyes and respiratory system. Prolonged exposure to high concentrations of vapours may lead to chronic effects in sensitive individuals.
- Skin corrosion/irritation	Causes skin irritation
- Serious eye damage/irritation	Irritating to eyes. In a dry atmosphere (RH<50%) vapours may cause irritation and lachrymatory effect.
- Respiratory or skin sensitisation	Due to polymerisation at the skin surface allergic reaction is not considered possible. The polymerized material is not able to penetrate into the epidermis.
- Germ cell mutagenicity	Because of the reduced exposure to monomer and the reported negative test result in various mutagenicity tests, ethyl-2-cyanoacrylate cannot be classified as mutagen.
- Carcinogenicity	Not carcinogenic
- Reproductive toxicity	Not toxic by reproduction
- STOT-single exposure	May cause irritation for skin, eyes and respiratory system
- STOT-repeated exposure	Ethyl-2-cyanoacrylate is not toxic by repeated absorption
- Aspiration hazard	Not determined

11.2. Other information

None

12. Ecological information

12.1. Toxicity	Low ecotoxicity
12.2. Persistence and degradability	Not applicable (the test compound would polymerize with contact of water or the moisture of the soil immediately)
12.3. Bioaccumulative potential	Not applicable (in presence of moisture ethyl-2-cyanoacrylate polymerises within seconds)
12.4. Mobility in soil	Not applicable (the test compound would polymerize with contact of water or the moisture of the soil immediately)
12.5. Results of PBT and vPvB assessment	The PBT and vPvB criteria do not apply to ethyl-2-cyanaoacrylate
12.6. Other adverse effects	Not determined

13. Disposal considerations

13.1. Waste treatment methods

Product disposal:
Cured adhesive: Dispose of as water insoluble non-toxic solid chemical in authorised landfill or incinerate under controlled conditions.
Dispose of in accordance with local and national regulations. Polymerise by adding slowly to water (10:1).
Contribution of this product to waste is very insignificant in comparison to article in which it is used.

Disposal of uncleaned packages:
After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated. Disposal must be made according to official regulations.

13.2. Waste code numbers / Waste identification

08 04 09 waste adhesives and sealants containing organic solvents and other dangerous substances.

14. Transport information

	Overland transport (ADR/RID)	**River transport (ADN)**	**Sea transport (IMDG)**	**Air transport (ICAO-TI / IATA-DGR)**
14.1. UN Number	Not regulated			Not Regulated
14.2. UN proper shipping name	Not regulated			liquid, (Cyanoacrylate ester)

14.3. Transport hazard classes	Not regulated		9
14.4. Packing group	Not regulated		Packaging instructions (passenger): 906 Packaging instructions (cargo): 906
14.5. Environmental hazards	-	no	-
14.6. Classification	Not regulated		(Cyanoacrylate ester), 9
14.9. Limited amount (LQ)	Not regulated		-
14.10. Additional information	Not determined		Unrestricted.

14.11. Special precautions for user

Not determined

14.12. Transport in bulk

Not determined

15. Regulatory information

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification: None above reporting de minimis
CERCLA/SARA Section 302 EHS: None above reporting de minimis.
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health, Fire, Reactive
CERCLA/SARA Section 313: None above reporting de minimis.
California Proposition 65: No California Proposition 65 listed chemicals are known to be present

16. Other information

16.1. Indication on the revision

SDS revised on the 07th October 2014: inclusion of CLP and DSD classification according to CLP regulation (1272/2008/EC) and addition of all fields as required by regulations 1907/2006/EC and 453/2010/EC.

16.2. Abbreviations and acronyms

ADN/ADNR: Regulations concerning the transport of dangerous substances in barges on inland waterways.

ADR/RID: European Agreement, concerning the International Carriage of Dangerous Goods by Road/ Regulations concerning the international carriage of dangerous goods by rail.

ACGIH: American Conference of Governmental Industrial Hygienists

CAS Number: Chemical Abstract Service Number

CLP: Classification, Labelling and Packaging

DNEL: Derived No Effect Level

DPD: Dangerous Preparation Directive

DSD: Dangerous Substance Directive

EC Number: European Commission Number

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

IATA: International Air Transport Associations

IMDG: International Maritime Dangerous Goods code

NIOSH: National Institute of Occupational Safety and Health

OSHA: Occupational Safety and Health Administration

PNEC: Predicted No Effect Concentration

PBT: Persistent, Bio accumulative, Toxic

UN Number: United Nations Number

UVCB: Substances of Unknown or Variable composition, Complex reaction products or Biological materials

TWA: Time-Weighted Average

VOC: Volatile organic compounds

VPvB: very Persistent and very Bio accumulative

WEL: Workplace Exposure Limit (UK HSE EH40)

16.3. Key literature references and sources for data

The present data in this SDS are based on the data present in the registration dossier of Ethyl Cyanoacrylate.

16.4. Classification of mixtures and applied evaluation method

Not applicable

16.5. Wording of the R- and H- phrases (which are not written in full under section 2 to 15)

Risk phrases: -

H statements: -

S phrases:

S23 Do not breath vapour

S24/25 Avoid contact with skin and eyes

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

16.6. Training advice

Unavailable

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.