

AFINITICA® AF02

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

1.1. Product identifier

AFINITICA® AF02

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

Intended use: Adhesive

1.3. Details of the supplier of the safety data sheet

Afinitica Technologies S.L.
Edificio Eureka, Parc de Recerca UAB
08193 Bellaterra (Barcelona)España
Telephone number: +34 93 580 1974
info@afinitica.com

1.4. Emergency telephone number

Afinitica Technologies S.L. + 34 93 580 19 74

Afinitica Technologies (24 h) + 34 694 412 618

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation CLP (EC) No. 1272/2008

Eye irritation (Category 2)
Specific target organ toxicity after single exposure (Category 3)
Skin irritation (Category 2)

2.2. Label elements

Labelling according to Regulation CLP (EC) No. 1272/2008

Pictogram



Signal Word

Warning

Hazard statements

H315

Causes skin irritation

H319

Causes serious eye irritation

H335

May cause respiratory irritation

EUH202

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

Precautionary statements

Prevention

P261

Avoid breathing vapours.

P280

Wear protective gloves/eye protection.

Response

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

P337 + P313

If eye irritation persists: Get medical advice/attention.

Disposal

P501

Dispose of waste and residues in accordance with local authority requirements.

For full text of these Hazard and Precautionary statements, see Section 16.

2.3. Other hazards

None

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

General chemical description: Cyanoacrylate adhesive

Declaration of the ingredients according to Regulation CLP (EC) No. 1272/2008:

Hazardous component	CAS-No.	EC-No.	Content	Classification
Ethyl 2-cyanoacrylate	7085-85-0	230-391-5	80 – 100 %	Eye irrit. 2; H319 Skin irrit. 2; H315 STOT SE 3; H335
Acrylic polymer	-	-	0.5 – 5 %	-
Hydroquinone	123-31-9	204-617-8	0.01 – < 0.1 %	Carc. 2; H351 Muta. 2; H341 Acute Tox. 4; H302 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M factor: 10

For full text of these Hazard, Precautionary, Risk and Safety statements, see Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice:

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled:

Move to fresh air, consult doctor if complaint persists

In case of skin contact:

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.

In case of eye contact:

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. Do not force eye open. Medical advice should be sought in case solid particles of cyanoacrylate trapped behind the eyelid cause any abrasive damage.

If swallowed:

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

Eye	irritation, conjunctivitis
Skin	redness, inflammation
Respiratory system	irritation, coughing, breath shortness, chest tightness

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

See section 4.1

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media which must not be used for safety reasons:

None known

5.2. Special hazards arising from the substance or mixture

Carbon oxides, nitrogen oxides (NOx)

5.3. Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary

5.4. Further information

No data available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation

6.2. Environmental precautions

Do not let product enter drains

6.3. Methods and materials for containment and cleaning up

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

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Ventilation (low level) is recommended when using large volumes.
Use of dispensing equipment is recommended to minimise the risk of skin or eye contact

Hygiene measures:

- Wash hands before work breaks and after finishing work.
- Do not eat, drink or smoke while working.
- Good industrial hygiene practices should be observed.

7.2. Conditions for safe storage, including any incompatibilities

For optimum shelf life store in original containers under refrigerated conditions at 2 - 8°C (35.6 - 46.4 °F)

7.3. Specific end use(s)

Adhesive

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Valid for
Great Britain

Occupational Exposure Limits (OEL):

Substance	Long-term exposure limit (8-hr TWA reference period)	Short-term exposure limit (15-minute reference period)	Remarks
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	ppm	mg/m ³	ppm	mg/m ³	
Ethyl 2- cyanoacrylate 7085-85-0	-	-	0.3	1.5	-
Acrylic polymer (dust, particles)	-	3 (respirable dust)	-	-	-
		10 (inhalable dust)			
Acrylic polymer (methyl methacrylate, 80-62-6)	50	208	100	416	-
Hydroquinone 123-31-9	-	0.5	-	-	-

Biological Exposure Indices:

None

8.2. Exposure controls**Respiratory protection:**

Ensure adequate ventilation.

An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area

Filter type: A

Hand protection:

Chemical-resistant protective gloves (EN 374).

Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):

nitrile rubber (NBR; >= 0.4 mm thickness)

Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):

nitrile rubber (NBR; >= 0.4 mm thickness)

This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Polyethylene or polypropylene gloves are recommended when using large volumes. Do not use PVC, rubber or nylon gloves.

Please note that in practice the working life of chemical resistant gloves may be considerably reduced as a result of many influencing factors (e.g. temperature). Suitable risk assessment should be carried out by the end user. If signs of wear and tear are noticed then the gloves should be replaced.

The use of chemical resistant gloves such as Neoprene or Natural Rubber is recommended

Eye protection:

Wear protective glasses.

Body protection:

Wear suitable protective clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid
	Colourless
Odour	Irritating
pH	No data available/Not applicable
Initial boiling point	80 °C (176 °F)
Flash point	No data available/Not applicable
Decomposition temperature	No data available/Not applicable
Vapour pressure	No data available/Not applicable
Density	No data available/Not applicable
Bulk density	No data available/Not applicable
Viscosity	No data available/Not applicable
Viscosity (kinematic)	No data available/Not applicable
Explosive properties	No data available/Not applicable
Qualitative solubility (solvent: water)	Polymerises in presence of water
Solidification temperature	No data available/Not applicable
Melting point	No data available/Not applicable
Flammability	No data available/Not applicable
Auto-ignition temperature	No data available/Not applicable
Explosive limits	No data available/Not applicable
Partition coefficient n-octanol/water	No data available/Not applicable
Evaporation rate	No data available/Not applicable
Vapour density	No data available/Not applicable
Oxidizing properties	No data available/Not applicable

9.2. Other safety information

No data available/Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Rapid exothermic polymerization will occur in the presence of water, amines, alkalis and alcohols.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section 10.1

10.4. Conditions to avoid

Stable under normal conditions of storage and use.

10.5. Incompatible materials

None if used properly

10.6. Hazardous decomposition products

None known if used as indicated.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

General toxicological information:

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC.

Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

STOT-single exposure:

May cause respiratory irritation.

Inhalative toxicity:

Prolonged exposure to high concentrations of vapours may lead to chronic effects in sensitive individuals. In dry atmosphere with < 50% humidity, vapours may irritate the eyes and the respiratory system.

Skin irritation:

Bonds skin in seconds. Considered to be of low toxicity: acute dermal LD50 (rabbit) > 2000mg/kg. Due to polymerisation at the skin surface allergic reaction is unlikely to occur

Eye irritation:

Irritating to eyes. Liquid product will bond eyelids. In a dry atmosphere (RH < 50%) vapours may cause irritation and lachrymatory effect

Acute oral toxicity:

Cyanoacrylates are considered to have relatively low toxicity. Acute oral LD50 is >5000mg/kg (rat). It is almost impossible to swallow as it rapidly polymerises in the mouth.

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	LD50	> 5.000 mg/kg	oral	-	rat	OECD Guideline 401 (Acute Oral Toxicity)
Hydroquinone 123-31-9	LD50	367 mg/kg	oral	-	rat	OECD Guideline 401 (Acute Oral Toxicity)

Acute dermal toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	LD50	> 2.000 mg/kg	dermal	-	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)

Skin corrotion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	slightly irritating	24 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	irritating	72 h	rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	Non sensitizing	-	Guinea pig	-
Hydroquinone 123-31-9	Sensitising	Guinea pig maximisation test	Guinea pig	-

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Ethyl 2-cyanoacrylate 7085-85-0	negative	mammalian cell gene mutation assay	with and without	-	OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Ethyl 2-cyanoacrylate 7085-85-0	negative	bacterial reverse mutation assay (e.g Ames test)	-	-	OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Ethyl 2-cyanoacrylate 7085-85-0	negative	in vitro mammalian chromosome aberration test	with and without	-	OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Hydroquinone 123-31-9	negative	Bacterial reverse mutation assay (e.g. Ames test)	with and without	-	EU Method B.13/14 (Mutagenicity)

Repeated dose toxicity:

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Hydroquinone 123-31-9	NOAEL \geq 250 mg/kg	oral: gavage	14 days, 5 days/week. 12 doses	rat	OECD Guideline 407 (repeated Dose 28-Day Oral Toxicity in Rodents)
Hydroquinone 123-31-9	LOAEL \leq 500 mg/kg	oral: gavage	14 days, 5 days/week. 12 doses	rat	OECD Guideline 407 (repeated Dose 28-Day Oral Toxicity in Rodents)

SECTION 12: Ecological information

General ecological information:

Biological and Chemical Oxygen Demands (BOD and COD) are insignificant.

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC.

Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Ecotoxicity:

Do not empty into drains / surface water / ground water.

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
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Hydroquinone 123-31-9	LC50	0.638 mg/l	Fish	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Hydroquinone 123-31-9	EC50	0.134 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Hydroquinone 123-31-9	EC50	0.335 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Hydroquinone 123-31-9	NOEC	0.0057 mg/l	chronic Daphnia	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)

12.2. Persistence and degradability

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
Ethyl 2-cyanoacrylate 7085-85-0	-	aerobic	57 %	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Hydroquinone 123-31-9	readily biodegradable	Aerobic	75 – 81 %	EU Method C.4-E (Determination of the "Ready" Biodegradability: Closed Bottle Test)

12.3. Bioaccumulative potential

Hazardous components CAS-No.	LogKow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
Ethyl 2- cyanoacrylate 7085-85-0	0.776	-	-	-	22 °C	EU Method A.8 (Partition Coefficient)
Hydroquinone 123-31-9	0.59	-	-	-	-	EU Method A.8 (Partition Coefficient)

12.4. Mobility in soil

Cured adhesives are immobile.

12.5. Results of PBT and vPvB assessment

Hazardous components CAS-No.	PBT/vPvB
Hydroquinone 123-31-9	Not fulfilling PBT (persistent/bioaccumulative/toxic) criteria

12.6. Other adverse effects

No data available/Not applicable

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

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.

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.

Waste code:

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

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

SECTION 14: Transport information

14.1 UN number

ADR/RID: Not dangerous goods

ADNR: Not dangerous goods

IMDG: Not dangerous goods

IATA: UN3334

Please note that Cyanoacrylates are restricted for air transportation in packages containing more than 500g. The "Package" is the individual bottle, tube or drum, not a carton containing many bottles.

14.2. UN proper shipping name

ADR/RID: Not dangerous goods

ADNR: Not dangerous goods

IMDG: Not dangerous goods

IATA: Aviation regulated liquid, n.o.s. (Cyanoacrylate ester)

Please note that Cyanoacrylates are restricted for air transportation in packages containing more than 500g. The "Package" is the individual bottle, tube or drum, not a carton containing many bottles.

14.3. Transport hazard class(es)

ADR/RID: Not dangerous goods

ADNR: Not dangerous goods

IMDG: Not dangerous goods

IATA: 9

Please note that Cyanoacrylates are restricted for air transportation in packages containing more than 500g. The "Package" is the individual bottle, tube or drum, not a carton containing many bottles.

14.4. Packaging group

ADR/RID: Not dangerous goods

ADNR: Not dangerous goods

IMDG: Not dangerous goods

IATA: III

Please note that Cyanoacrylates are restricted for air transportation in packages containing more than 500g. The "Package" is the individual bottle, tube or drum, not a carton containing many bottles.

14.5. Environmental hazards

ADR/RID: no

ADNR: no

IMDG Marine pollutant: no

IATA: no

14.6. Special precautions for user

No data available/Not applicable

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available/Not applicable

SECTION 15: Regulatory information

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

VOC Content < 3 %
(1999/13/EEC)

15.2. Chemical Safety Assessment

For this product a chemical safety assessment has been carried out

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

Eye irrit.	Eye irritation
Skin irrit.	Skin irritation
STOT SE	Specific target organ toxicity – single exposure
Carc.	Carcinogenicity
Muta.	Germ cell mutagenicity
Acute Tox.	Acute toxicity
Eye Dam.	Serious eye damage
Skin Sens.	Skin sensitization
Aquatic Acute	Hazardous to the aquatic environment
Aquatic Chronic	Hazardous to the aquatic environment with chronic effects.
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
H335	May cause respiratory irritation
H341	Suspected of causing genetic deffects
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.
P261	Avoid breathing vapours
P280	Wear protective gloves/eye protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P501	Dispose of waste and residues in accordance with local authority requirements,.

Further information

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

This safety data sheet was prepared in accordance with Regulation (EC) No. 1272/2008.