

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 |
| Silicones and siloxanes, dimethyl-, reaction products with silica | 67762-90-7 | - | 0.5 – 5 % | - |
| 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 |
|--|---|------------------------|---|-------------------|--|
| | 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 | - |
| Silica dust | - | 4 (respirable dust) | - | - | Time Weighted Average (TWA):(EH40 WEL) |
| | | 10 (inhalable dust) | | | |
| 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 |
|------------------------------|------------|-------------|----------------------|---------------|--|--|
| 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 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. |
| 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.