

AFINITICA® ISA DIY

PRODUCT DESCRIPTION

Technology	Cyanoacrylate
Chemical Type	Ethyl Cyanoacrylate
Appearance (uncured comp. A)	Transparent gel
Appearance (uncured comp. B)	Transparent gel
Components	Two-part – requires mixing
Viscosity	High, thixotropic gel
Cure	By mixing

AFINITICA® ISA DIY is a patented gap filling instant semi-structural adhesive product with excellent adhesion to a very broad range of materials and surfaces. Curing times of only 5 minutes while a hard and tough polymer results within 8 minutes, working times (in-mixer) up to 7 minutes, total volumetric gap filling, with repositionability, instant adhesion to most plastics, wood and metals including aluminum, and to porous and irregular surfaces, with excellent water, heat and impact resistance. The transparent gel consistency enables application in any orientation whilst the static mixing nozzle ensures uniform and precise application for exceptional user convenience.

TYPICAL PROPERTIES OF UNCURED MATERIAL

PART A:

Viscosity, Brookfield, 25 °C, mPa·s (cP):
Spindle 14, speed 1.5 rpm 120.000 to 180000

PART B:

Viscosity, Brookfield, 25 °C, mPa·s (cP):
Spindle 14, speed 1.5 rpm 40.000 to 70.000

MIXED A and B:

Open time at 25 °C: 4:30–9 minutes
Working time at 25 °C: 4–9 minutes

TYPICAL CURING PERFORMANCE

Under normal conditions, the atmospheric moisture initiates the curing process. Although full functional strength is developed in a relatively short time, curing continues for at least 24 hours before full chemical resistance is developed.

FIXTURE TIMES

Fixture time is the time at which an adhesive bond (250 mm²) is capable of supporting a 3 kg load for 10 seconds. The fixture time will depend on the substrate. The table below shows the fixture time for different substrates using lap shears.

	Time (s)
Beech Wood	30-90 s
ABS	90-140 s
Polycarbonate	90-140s
Aluminium A5754	20s-55s
Mild steel	30 -60 s
Stainless steel A316	35-70s

TYPICAL PERFORMANCE OF CURED MATERIAL

TENSILE SHEAR STRENGTH

The shear strength will depend on the substrate. The Table below shows the shear strength for different substrates using lap shears according to ISO 4587.

Cured for 24h at 22 °C

	Strength (N/mm ²)
Beech Wood	9-13
ABS	8-12*
Polycarbonate	8-12*
Aluminium A6060	15-20
Grit Blasted Mild steel	18-23
Stainless steel A316	10-14

* Substrate Failure

TYPICAL ENVIRONMENTAL RESISTANCE

Cured for 24 h at 22 °C
Lap Shear Strength, ISO 4587

HEAT AGING

Aged at temperature indicated and tested at 22 °C

Heat Aging at various temperatures

Strength (N/mm ²)

	Grit Blasted Mild Steel
Initial Strength	18-23
After 3 days @ 120°C	9-14

WATER RESISTANCE

Aged under conditions indicated and tested at 22 °C
Lap Shear Strength, ISO 4587

Total submersion test in water

	Strength (N/mm ²)
	Mild Steel
Initial Strength	18-23
After 3 days @ 60 °C	9-13

IMPACT RESISTANCE

Steel/steel impact Strength (after 24h): 39 kJ/m²
(ISO 9653)

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

Directions for use: Before applying the glue, make sure the gluing surface is clean, dry and free of grease.

- 1) Before applying the glue, make sure the gluing surface is clean, dry and free of grease.
- 2) To assemble the syringe, first introduce the plunger, then exchange the cap with a mixer. Discard the first few drops.
- 3) Apply the material on one of the two surfaces and assemble the two parts within 1 minute.
- 4) After uniting the substrates, 30-45 seconds are available for repositioning depending on the substrate. Press the two parts together firmly for around 30 seconds. After releasing the pressure, wait 5 minutes before good handling strength, 10 minutes for a fully cured material and 24h for full strength.
- 5) Make use of the syringe or discard product at least every 2 minutes to avoid the product from polymerizing inside the mixer, if you do not want to replace the mixer.
- 6) After use, discard the mixer and replace the cap. Store the syringe in a cool and dry environment.

- 7) Optimal Storage: 2 °C to 8 °C. Storage below 2 °C or greater than 8 °C can adversely affect product properties
- 8) Product shelf-life: 12 months

Conversions:

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{in}$
 $\mu\text{m} / 25.4 = \text{mil}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

NOTE

The data contained herein are furnished for information only and are believed to be reliable. AFINITICA cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, AFINITICA Technologies s.l. specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of AFINITICA's products. AFINITICA specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits. The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any AFINITICA Technologies patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.