

AFINITICA® H<sub>2</sub>R

## PRODUCT DESCRIPTION

<b>Technology</b>	Cyanoacrylate
Chemical Type	Ethyl Cyanoacrylate
Appearance (uncured)	Transparent, colourless
Components	One part – requires no mixing
Viscosity	Low
<b>Cure</b>	Humidity

AFINITICA® H<sub>2</sub>R is an instant adhesive with high resistance to humidity exposure. The strength of adhesion of this product is constant at its maximum value after several days under hot water. The product has excellent bonding properties to a very broad range of materials especially metal but including also plastics.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield, 25 °C, mPa·s (cP):  
 Spindle 21, speed 100 rpm 120 to 200

## 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 mm<sup>2</sup>) 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)
Pine Wood	50 – 90
Beech Wood	30 – 60
ABS	30 – 45
Polycarbonate	50 – 100
Stainless Steel A316	50 – 80
Mild steel	15 – 45

## 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 <sup>2</sup> )
Pine Wood	8 – 12*
Beech Wood	10 – 15*
ABS	9 – 14*
Polycarbonate	7 – 11*
Stainless Steel A316	8 – 12
Mild steel	12 – 20

\* 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 125 °C

	Strength (N/mm <sup>2</sup> )
	Mild Steel
Initial Strength	12 – 20
After 3 days @ 125 °C	6 – 15

### WATER RESISTANCE

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

Total submersion test in water

	Strength (N/mm <sup>2</sup> )
	Mild Steel
Initial Strength	12 – 20
After 3 days @ 60 °C	12 – 20
After 7 days @ 60 °C	12 – 20
After 14 days @ 60 °C	12 – 20
After 21 days @ 60 °C	12 – 20

## **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.

For safe handling information on this product, consult the Safety Data Sheet (SDS): SDS242953

### **Directions for use:**

- 1) Before applying the glue, make sure the gluing surface is clean, dry and free of grease.
- 2) Apply adhesive to one of the surfaces. Do not use items like tissue or a brush to spread the adhesive.
- 3) Assemble the parts within a few seconds. The parts should be accurately located, as the short fixture time leaves little opportunity for adjustment.
- 4) Bonds should be held fixed or clamped until adhesive has fixture.
- 5) Product should be allowed to develop full strength before subjecting to any service loads (typically 24 to 72 hours after assembly, depending on bond gap, materials and ambient conditions).
- 6) Optimal Storage: 2 °C to 8 °C. Storage below 2 °C or greater than 8 °C can adversely affect product properties
- 7) 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**

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