

AFINITICA® LIGHT LOCK n°1 HV

PRODUCT DESCRIPTION

Technology	Light curing instant cyanoacrylate adhesive
Chemical Type	Methoxyethyl Cyanoacrylate with photoinitiator
Appearance (uncured)	Transparent, yellow liquid
Components	One part- requires no mixing
Viscosity	High
Cure	Blue-violet visible or UV light
Secondary cure	surface initiated

AFINITICA® LIGHT LOCK n°1 HV is an odourless light-curing cyanoacrylate adhesive. It is designed for bonding applications that require very rapid fixturing, fillet cure or surface cure. The UV and visible light cure sensitivity allows rapid bonding through transparent parts, rapid curing of exposed bulk or surface coated areas while the instant bonding capability ensures cure between opaque substrates ('shadow cure').

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific gravity, 25 °C, g/cm ³ :	1.11
Viscosity, Brookfield, 25 °C, mPa·s:	
Spindle 21, 50 rpm	850 to 900

TYPICAL CURING PERFORMANCE

TACK FREE TIME / SURFACE CURE

Tack Free Time is the time in seconds required to achieve a tack free surface cured surface coating.

UV/Visible Light Sources:

Electrodeless, V bulb:
70 mW/cm², measured @ 365 nm: < 5 s.

Electrodeless, H bulb:
30 mW/cm², measured @ 365 nm: < 5 s.
100 mW/cm², measured @ 365 nm: < 5 s.

Visible Light Sources:

Blue -violet - give wavelength light laser:
70 mW/cm², measured @ 445 nm: < 5 s.
LED - give wavelength

FIXTURE TIME (non-UV/Vis 'shadow cure')

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.

Fixture time measurements relate to non-UV/Visible cure.

	Fixture Time (seconds)
ABS	30
Polycarbonate	40
PMMA	50
Beech wood	30
Pine wood	50
Mild Steel	20
Aluminium A5754	15

TYPICAL PERFORMANCE OF CURED MATERIAL

TENSILE SHEAR STRENGTH

The tensile shear strength will depend on the substrate. The Table below shows the tensile shear strength for different substrates using lap shear test pieces and tested according to ISO 4587.

Data for 24-h curing at 22 °C in dark conditions and 10-second curing with UV/Vis light source.

	Strength (N/mm ²) After 24 h RT Non-UV/Vis cure	Strength (N/mm ²) After 10 s curing with UV/Vis light and 24 h at 22 °C
ABS	12.2 *	9.1 *
Polycarbonate	8.9	5.8
PMMA	10.5 *	5.4
Beech wood	13.8 *	13.2 *
Pine wood	12.5 *	12.3 *
Mild Steel	14.4	13.1
Aluminium A5754	4.8	3.6

* Substrate failure

General :

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): 242977.

Directions for use:

1) This product is light sensitive; exposure to daylight, UV light and artificial light should be kept to a minimum during storage and handling.

2) For best performance bond surfaces should be clean and free from grease.

3) Optimal storage: 2 °C to 8 °C. Storage below 2 °C or greater than 8 °C can adversely affect product properties.

4) Excess adhesive can be dissolved with nitromethane or acetone.

5) Product shelf-life is 6 months if stored under suitable conditions.

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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