

## SUREHOLD® HELIOS MV Light Cure CA Adhesive

**PRODUCT DESCRIPTION**

Technology	Cyanoacrylate / UV / Visible
Chemical Type	Methoxyethyl Cyanoacrylate with photoinitiator
Appearance (uncured)	Transparent, yellow liquid
Components	One part– requires no mixing
Viscosity	Medium
Cure	Ultraviolet (UV) / blue visible light
Secondary cure	Humidity

SUREHOLD® HELIOS MV is the first odorless 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 properties facilitate rapid curing of exposed surface areas and makes it a unique product in the world of light-curing adhesives.

**ISO 10993**

An ISO 10993 Test Protocol is an integral part of the Quality Program for HELIOS MV. HELIOS MV has been qualified to Toxikon's ISO 10993 Protocol as a means to assist in the selection of products for use in the medical device industry. Certificates of Compliance are available through the SureHold's Quality Department.

**TYPICAL PROPERTIES OF UNCURED MATERIAL**

Specific gravity, 25°C, g/cm<sup>3</sup>: 1.19

Viscosity, Brookfield, 25°C, mPa·s (cP):  
Spindle 21, 50 rpm 180 to 220

**TYPICAL PROPERTIES OF CURED MATERIAL\*1**

Cured for 48 h @25°C

Physical Properties:

Coefficient of Thermal Expansion, K<sup>-1</sup> 450x10<sup>-6</sup>  
Glass Transition Temperature, DMTA (1Hz), °C 160

Electrical Properties:

Volume Resistivity, Ω·cm 10x10<sup>15</sup>  
Surface Resistivity, Ω 0.9x10<sup>15</sup>  
Dielectric Constant / Dissipation Factor, 1 MHz: 4.26 / 0.025

\*1 Preliminary measurements for cured material for 48 h @25°C

**TYPICAL CURING PERFORMANCE****TACK FREE TIME / SURFACE CURE**

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

UV/ Visible Light Sources:

Electrodeless, V bulb:

70 mW/cm<sup>2</sup>, measured @ 365 nm: < 10 s.

Electrodeless, H bulb:

30 mW/cm<sup>2</sup>, measured @ 365 nm: < 10 s.

100 mW/cm<sup>2</sup>, measured @ 365 nm: < 10 s.

Visible Light Sources:

Blue light laser:

70 mW/cm<sup>2</sup>, measured @ 445 nm: < 10 s.

**FIXTURE TIME (non-UV/Vis cure)**

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.

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

	Fixture Time (seconds)
ABS	15-30
Acrylic	90-105
Polycarbonate	40-55
PVC	120-150

**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.

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

**Product Shelf-Life:** 12 months**Part Numbers:** 2202, 22021, 22041**Conversions:**

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

mPa·s = cP

**NOTE**

The data contained herein are furnished for information only and are believed to be reliable. SureHold 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, SureHold specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of SureHold's products. SureHold 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 SureHold 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.

	Strength (N/mm <sup>2</sup> ) After 24 h at 22 °C -Non-UV/Vis cure-	Strength (N/mm <sup>2</sup> ) After 10 s curing with UV/Vis light
ABS	12*2 - 13*2	7*2 8*2
Acrylic	9*2 - 10*2	8*2 9*2
Polycarbonate	9*2 - 10*2	6*2 7*2
PVC	12*2 - 13*2	3 - 4

\*2 Substrate failure

**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).

**DIRECTIONS FOR USE:**

This product is light sensitive; exposure to daylight, UV light and artificial light should be kept to a minimum during storage and handling. Helios MV Light Cure may be used as a regular instant adhesive without light requirement.

- 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. Bonds should be held fixed or clamped until adhesive has fixture.
- 4) 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).
- 5) Helios MV Light Cure may be used as a light sensitive instant adhesive. Thus, repeat steps 1-3 and apply an adequate source of light to cure either squeezed material from the bondline or the union itself (only for transparent substrates).
- 6) Excess product can be dissolved with nitromethane or acetone.
- 7) Replace cap and secure tightly for storage.

**STORAGE:**

Store product in the unopened container in a dry location (at room temperature)

Optimal Storage: 2°C to 8°C.