

#### PRODUCT DESCRIPTION

**MXBON® 21446M** is a medium-high viscosity light-curing cyanoacrylate adhesive. It is designed for bonding applications that require very rapid fixture, fillet cure or surface cure. The UV and visible light cure properties facilitated rapid curing of exposed surface area and makes it a unique product in the world of light-curing adhesive.

**MXBON® 21446M** offers the following characteristics:

<b>Technology</b>	Cyanoacrylate / UV / Visible
<b>Chemistry</b>	Ethyl Cyanoacrylate with photoinitiator
<b>Appearance (uncured)</b>	Transparent, yellow liquid
<b>Components</b>	One part – requires no mixing
<b>Viscosity</b>	Medium-High
<b>Cure</b>	Ultraviolet (UV) light
<b>Secondary cure</b>	Humidity

#### ISO-10993

**MXBON® 21446M** has been tested to test protocols based on ISO 10993 biocompatibility standards, as a means to assist in the selection of products for use in the medical device industry.

#### TYPICAL PROPERTIES OF UNCURED

##### MATERIAL

	Typical Value
<b>Specific Gravity @ 25 °C, g/cm<sup>3</sup></b>	1.13
<b>Viscosity @ 25 °C, mPa·s</b>	600 - 1200

#### TYPICAL CURING PERFORMANCE

##### TACK FREE TIME

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.

##### CURE SPEED vs. SUBSTRATE (non-UV/Vis cure)

The rate of cure will depend on the substrate used. The table below shows the fixture time achieved on different materials at room temperature. This is defined as the time at which an adhesive bond (250 mm<sup>2</sup>) is capable of supporting a 3 kg load for 10 seconds. Fixture time measurements relate to non-UV/Visible cure.

	Fixture Time (seconds)
<b>ABS</b>	15
<b>Acrylic</b>	80
<b>PC</b>	40
<b>PVC</b>	140

#### 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 in dark room and 10-second curing with UV/Vis light source.

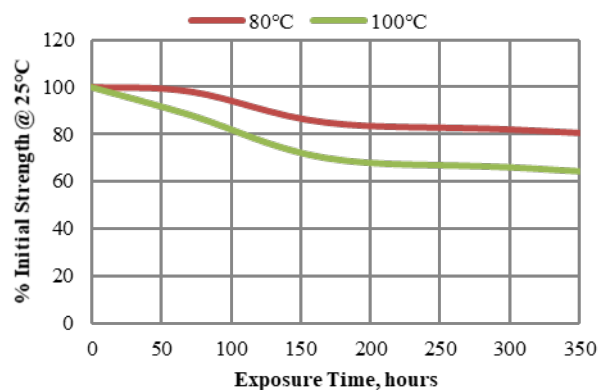
	Strength (N/mm <sup>2</sup> ) After 24 h RT Non-UV/Vis cure	Strength (N/mm <sup>2</sup> ) After 10 s curing with UV/Vis light
<b>ABS</b>	12.7*	7.4*
<b>Acrylic</b>	7.7*	8.4*
<b>PC</b>	12.0*	7.3*
<b>PVC</b>	6.6*	6.0*

\* Substrate failure

#### TYPICAL ENVIRONMENTAL RESISTANCE

##### HEAT AGING

Cured @ 30 mW/cm<sup>2</sup>, measured @365 nm, for 10 seconds plus 24 hours post cure @ 22°C. Aged at temperature indicated and tested @22°C



#### 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:

- 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) This product performs best in thin bond gaps (0.05 mm)
- 4) Excess adhesive can be dissolved with nitromethane or acetone.

##### Storage:

Store product in the unopened container in a dry location.

Storage information may be indicated on the product container labeling.

Optimal storage: 2 °C to 8 °C. Storage below 2 °C or greater than 8 °C can adversely affect product properties. Material removed from containers may be contaminated during use. Do not return product to the original container. Cartell Chemical Co., Ltd. cannot assume responsibility for a product which has been contaminated or stored

under conditions other than those previously indicated.

**Conversions:**

$$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$$

$$\text{kV/mm} \times 25.4 = \text{V/mil}$$

$$\text{mm} / 25.4 = \text{in}$$

$$\mu\text{m} / 25.4 = \text{mil}$$

$$\text{N} \times 0.225 = \text{lb}$$

$$\text{N/mm} \times 5.71 = \text{lb/in}$$

$$\text{N/mm}^2 \times 145 = \text{psi}$$

$$\text{MPa} \times 145 = \text{psi}$$

$$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$$

$$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$$

$$\text{mPa}\cdot\text{s} = \text{cP}$$

**Storage & Handling precaution**

Keep adhesive in a cool and dry place. The storage temperature is recommended at 2 °C - 8 °C. For details, consult the Material Safety Data Sheet, (MSDS). Shelf life is twelve months from the date of manufacture in the original container under the optimal conditions.

1. Avoid contact with skin and eyes.
2. If contact with skin, rinse with water.
3. If adhesive gets into eye, keep eye open and rinse with water thoroughly. Seek medical attention immediately.
4. Keep the material out of children's reach.

**Note:**

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

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