

### PRODUCT DESCRIPTION

**MXBON® 22446** is odorless 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® 22446** offers the following characteristics:

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

### 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>Polycarbonate</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.

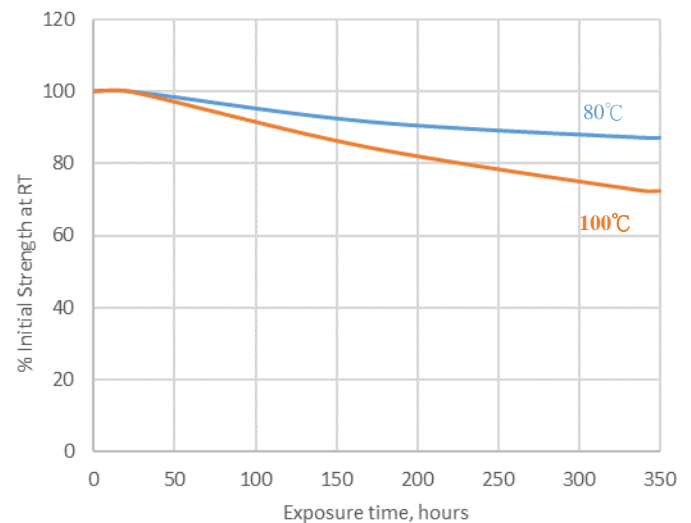
|                      | Strength (N/mm <sup>2</sup> )<br>After 24 h RT<br>Non-UV/Vis cure | Strength (N/mm <sup>2</sup> )<br>After 10 s curing with<br>UV/Vis light |
|----------------------|---|---|
| <b>ABS</b>           | 11.7*   | 7.3*  |
| <b>Acrylic</b>       | 7.6*  | 8.3*  |
| <b>Polycarbonate</b> | 11.9*   | 7.2*  |
| <b>PVC</b>           | 6.5*  | 5.9*  |

\*Substrate failure

### TYPICAL ENVIRONMENTAL RESISTANCE

#### Heat Aging

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



#### Chemical/Solvent Resistance

Aged under conditions indicated and tested @25°C

| Environment           | Temp. °C | % of initial strength |         |          |
|-----------------------|----------|-----------------------|---------|----------|
|                       |          | 100 hrs               | 500 hrs | 1000 hrs |
| Water                 | 25       | 87                    | 75      | 60       |
| Ethanol               | 25       | 93                    | 88      | 88       |
| Isopropanol           | 25       | 100                   | 101     | 101      |
| Water/Glycol          | 25       | 88                    | 77      | 64       |
| Unleaded Gasoline     | 25       | 97                    | 94      | 97       |
| Motor Oil             | 25       | 100                   | 94      | 101      |
| 98% Relative Humidity | 40       | 84                    | 73      | 62       |

#### Chemical/Solvent Resistance

Aged under conditions indicated and tested @25°C

Lap Shear Strength, ISO 4587/ASTM D1002/JIS K6850  
PC (Polycarbonate)

| Environment           | Temp. °C | % of initial strength |         |          |
|-----------------------|----------|-----------------------|---------|----------|
|                       |          | 100 hrs               | 500 hrs | 1000 hrs |
| Air                   | 25       | 101                   | 98      | 102      |
| 98% Relative Humidity | 40       | 91                    | 86      | 64       |

\*substrate failure

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.

**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.

**Conversions:**

- °C x 1.8) + 32 = °F
- kV/mm x 25.4 = V/mil
- mm / 25.4 = in
- µm / 25.4 = mil
- N x 0.225 = lb
- N/mm x 5.71 = lb/in
- N/mm<sup>2</sup> x 145 = psi
- MPa x 145 = psi
- N·m x 8.851 = lb·in
- N·mm x 0.142 = oz·in
- mPa·s = cP

**Storage & Handling precaution**

Keep adhesive in a cool and dry place. The storage temperature is recommended at 8 °C - 24 °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:**

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|                                       |  |                                      |                                     |                                       |  |
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