

PRODUCT DESCRIPTION

MXBON® 41352 is a single component UV curing acrylic based product. The cured adhesive is used to bond, seal or coat metal and glass components. Moreover, this product not only shows excellent adhesion to wide variety of substrates but also provides excellent wet fastness and impact resistance. MXBON® 41352 can be cured by different ways, such as UV light, activator and heating.

| | |
|--|---|
| Technology | Acrylic |
| Chemical Type | Acrylated urethane |
| Appearance (uncured) | Transparent amber liquid |
| Components | One component – requires no mixing |
| Viscosity | Medium |
| Cure | Ultraviolet (UV) light and/or Visible light |
| Second cure | Activator and Heating |
| Application | Bonding, Sealing or Coating |
| Specific Gravity @25 °C | 1.09 |
| Viscosity, mPa·s (cP) Brookfield – RVT (@25 °C) | |
| Spindle 6, 20 rpm | 14,000 to 25,000 |
| Max. Operating Temp. (°C) | -54 to 150 |
| Shelf life | Storage in 8 °C to 21 °C , 24 months (Unopened condition) |

TYPICAL CURING PERFORMANCE

UV light and/or visible light

MXBON® 41352 can be cured by UV light and/or visible light. The range of wavelength are 365nm. To obtain full cure on surfaces exposed to air, radiation 220 to 260 nm is also required. Fixture time and cure speed achieved depend on substrate used, bonding gap, UV intensity, exposure time and spectrum distribution of light source.

Activator

MXBON® 41352 can be corresponded with MXBON® 037387. MXBON® 037387 is designed to initiate the cure process for MXBON® products. Fixture time and cure speed achieved depend on adhesive used, the substrate bonded. Applying activator to one surface and the adhesive to the other, mate and clamp.

Heating

MXBON® 41352 can be cured by Heating. Generally, it should consider the substrate which could sustain at high temperature.

FIXTURE TIME

UV light and/or visible light

Initially cured

The cured rate depends on substrates. Fixture time is defined as the time to develop the shear strength of 0.1 N/mm².

Initial time : 6 mW/cm² @365nm, ≤ 12 second

30 mW/cm² @365nm, ≤ 10 second

100 mW/cm² @365nm, ≤ 6 second

Tack free time : 100 mW/cm² @365nm, ≤ 15 second

Deep (1-3 mm) Fixture time : 100 mW/cm² @365nm, < 60 second

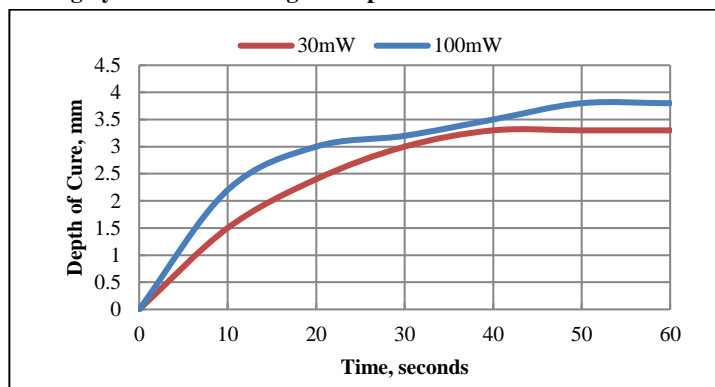
Fully cured

The cured rate depends on glue amount 、glue layer thickness (gap/depth) and light intensity (energy). It is between a few seconds to 30 seconds.

Deeply cured

The cured rate depends on the type of light source 、the wavelength range of the light radiated 、light intensity energy and lighting time. The figure shows that MXBON® 41352 apply to different light intensity, glue layer thickness and cured speed.

Curing System: Metal halogen lamp



Activator

Initially cured

The cured rate depends on substrates. Fixture time develop a shear strength of 0.1 N/mm²

Initial time: 2 to 6 minutes.

Fully cured

The cured rate depends on glue amount 、glue layer thickness (gap/depth) and substrates. Full strength will be achieved after 72 hours.

Heating

The bond area should be heated to 121°C and maintained at that temperature for 30 minutes.

Cured speed and glue layer thickness

The cured rate depends on glue amount and glue layer thickness (gap). The thinner adhesive layer has a faster curing rate and bonding strength. On the contrary, the large gap has a slower curing rate and lower bonding strength.

Cured speed and substrates

The cured rate depends on substrates. MXBON® 41352 has not suitable for soft materials, such as: rubber and silicone.

ADHESIVE PERFORMANCE

Cured @ 100mW/cm², measured @365nm, for 30 seconds using a medium pressure mercury arc light source

Physical properties

| | |
|--|-----|
| Durometer (Shore D), ISO 868 | 55 |
| Elongation, at break (%), ISO 527-3 | 250 |
| Water absorption (%) | 8.8 |
| Refractive index (%), ASTM D542 | 1.5 |
| Glass transition temperature(°C), ISO 11357-2 | 50 |

Electrical characteristics

| | |
|--|----------------------|
| Dielectric strength (kv/mm), IEC 60243-1 | 22 |
| Volume resistivity (Ω·cm), IEC 60093 | 8 x 10 ¹² |
| Dielectric constant @1-kHz, IEC 60250 | 5.0 |
| Dielectric dissipation factor @1-kHz, IEC 60250 | 0.02 |

Shear strength (ISO 13445)

| Substrate | N/mm ² | psi |
|------------------|-------------------|------|
| Steel / Glass | 16.5 | 2400 |
| Aluminum / Glass | 10.2 | 1485 |
| PC / Glass | 8.2 | 1200 |
| PVC / Glass | 8.8 | 1290 |

Corresponding with MXBON® 037387 @Single side, @24hrs @22°C

Shear strength (ISO 4587)

| Substrate | N/mm ² | psi |
|---------------|-------------------|------|
| Steel / Steel | 15.2 | 2200 |

Heating @121 °C, @45 minutes

Shear strength (ISO 13445)

| Substrate | N/mm ² | psi |
|-----------|-------------------|-----|
|-----------|-------------------|-----|

| Steel / Glass | 20.6 | 3000 |
|---------------|------|------|
|---------------|------|------|

Heating @121 °C, @30 minutes

Shear strength (ISO 13445)

| Substrate | N/mm ² | psi |
|------------------|-------------------|------|
| Aluminum / Glass | 18.6 | 2710 |

Heating @121 °C, @30 minutes

Shear strength (ISO 13445)

| Substrate | N/mm ² | psi |
|-------------------|-------------------|------|
| Steel / Steel | 13.1 | 1910 |
| Aluminum/Aluminum | 10.6 | 1540 |

Chemical/Solvent Resistance

Aged under conditions indicated and tested @22°C

| Environment | °C | % of initial strength | |
|---------------------|-----|-----------------------|-------|
| | | 300 h | 500 h |
| Air | 121 | 70 | 75 |
| Air | 150 | 45 | 50 |
| Motor oil(10W30) | 22 | 90 | 85 |
| Unleaded gasoline | 22 | 70 | 80 |
| Heat/humidity 90%RH | 50 | 45 | 35 |

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be use with chlorine or other strong oxidizing materials. Where washing systems are used to clean the surfaces before bonding, it is important to check the compatibility of the washing solution with the adhesive. Users are recommended to confirm compatibility of the product with such substrates.

Storage & Handling precaution

Keep adhesive in a cool and dry place. The storage temperature is recommended at 8 °C to 21 °C. Shelf life is two years 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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