Technical Data Sheet
MXBON® 41131M

Revision: EN001
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PRODUCT DESCRIPTION

MXBON® 41131M is a transparent, colorless, light-curing general purpose acrylic adhesive. Suitable for stress-sensitive plastics and can be cured at high speed. Mainly used to bond hard or flexible PVC to PC polycarbonate, its flexible properties improve the ability of the bonding surface to withstand loads. MXBON® 41131M is primarily used for plastic-to-plastic bonding, but can also be used on many different substrate surfaces and used in medical device industry.

Chemical Type	Acrylated urethane
Appearance (uncured)	Light yellow
Components	One component – requires no mixing
Viscosity	Low
Cure	Ultraviolet (UV) light and/or Visible light
Application	Bonding
Specific Gravity @25 °C	1.1
Viscosity, mPa·s (cP) Brookfield-RVT (@25 °C)	
Spindle 1, 20 rpm	200 to 400
Shelf life	Storage in 8 ℃ to 21 ℃ , 12 months (Unopened condition)

TYPICAL CURING PERFORMANCE

MXBON® 41131M can be cured by UV light and/or visible light of 365nm、395nm and 460nm. 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.

ISO 10993-5

MXBON® 41131M has been tested base on biological evaluation. It could use in medical device industry.

Fixture time

Fixture time is defined as the time to develop the shear strength of 0.1 N/mm^2.

UV Fixture Time, ISO 4587, Glass microscope slides, seconds:

6 mW/cm^2 @365nm, ≤ 15

UV Fixture Time, ISO 4587, Polycarbonate, seconds:

30 mW/cm^2 @365nm, ≤ 5

100 mW/cm^2 @365nm, ≤ 5

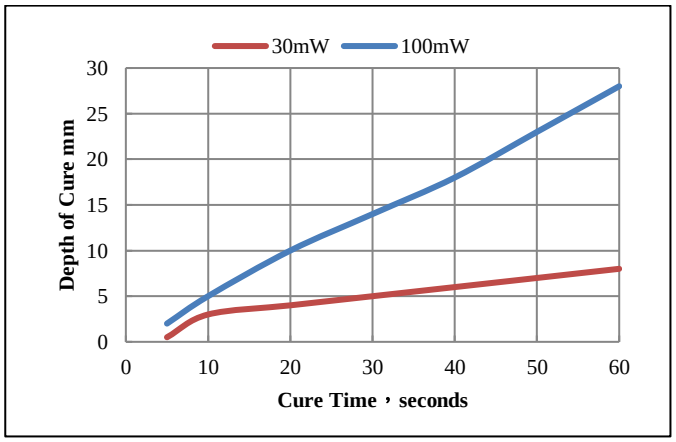
Tack free time :100 mW/cm^2 @365nm, ≤ 20

Deep (1-3 mm) Fixture time : 100 mW/cm^2, ≤ 60

Depth of Cure vs. Irradiance (365 nm)

The graph below shows the increase in depth of cure with time at 50mW/cm² - 100mW/cm² as measured from the thickness of the cured pellet formed in a 15mm diameter PTFE die.

Curing System: Metal Halide (Doped)



TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 30 mW/cm², measured @ 365 nm, for 80 seconds using a glass filtered metal halide light source

Physical properties

Durometer (Shore D), ISO 868	60
Max. Operating Temperature (°C)	-54 to 149
Refractive index (%)	1.5

Electrical characteristics

Dielectric strength, IEC 60250 (kv/mm)	28
Volume resistivity, IEC 60093 (Ω˙cm)	8.1 x 10^{14}
Dielectric constant, IEC 60250 @1-kHz	4.67
Dielectric dissipation factor, IEC 60093 @1-kHz	0.02

TYPICAL PERFORMANCE OF CURE MATERIAL

Adhesive properties

Cured @ 30 mW/cm², measured @ 365 nm, for 80 seconds using a glass filtered metal halide light source (samples with 0.5 mm gap).

Lap shear strength , ISO 4587

Polycarbonate

Substrate	N/mm^2	psi
PC / PC	12*	1740*

* substrate failure

TYPICAL ENVIRONMENTAL RESISTANCE

Cured @ 30 mW/cm², measured @ 365 nm, for 80 seconds using a metal halide light source, (samples with 0.5 mm gap).
Lap Shear Strength, ISO 4587:
Polycarbonate

Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22 ℃.

		% of initial strength		
Environment	℃	2H	24H	170H
Boiling water	100	*100	------	------
Water immersion	49	------	------	*100
Isopropanol immersion	21	------	*100	------
Heat/humidity	38	------	------	*100

* substrate failure

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. In some cases, these solutions can affect the cure and performance of 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. For details, consult the Safety Data Sheet, (SDS). Shelf life is one 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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