

### PRODUCT DESCRIPTION

**MXBON® 214211** is a black, thermal resistant instant adhesive. It has been specially formulated to provide impact, peel and improved resistance to heat, humidity or damp conditions, which can be used for virtually any type of fastening job. It has been specially formulated to achieve the strongest possible bond between well-mated, non-porous surfaces, such as rubber, metals, plastics, glass, etc. **MXBON® 214211** is a one-component, solvent-free system and does not require the use of a catalyst, heat or clamps. When a thin layer of **MXBON® 214211** applied between two surfaces comes into contact with atmospheric moisture, a rapid polymerization occurs producing the ultimate bond.

### TYPICAL PROPERTIES OF UNCURED

#### MATERIAL

Base	Ethyl Cyanoacrylate
Color	Black liquid
Specific Gravity @ 25°C	1.05
Cure	Moisture
Flash point	See SDS
Application	Bonding
Viscosity, Brookfield @25°C mPa · s (cP)	2000-3000
Service temperature range	-54~135°C (-65~275°F)
Full cure (hrs)	24
Shelf life	18 months unopened when stored at 2-8°C

\*Keep in a cool area out of direct sunlight. Refrigeration to 2-8°C gives optimum storage stability. When stored in a refrigerator, allow the adhesive to gradually warm to room temperature prior to use. It will prevent condensation inside the bottle which can reduce shelf life. Containers should be tightly sealed when not in use. The shelf-life is 18 months from date of manufacture.

### TYPICAL CURING PERFORMANCE

The rate of cure can be affected by temperature, humidity, the smoothness of the surface, the closeness of the surface and specific surfaces being bonded. Although full functional strength is developed in a relatively short time, curing continues for at least 24 hours before full chemical/solvent resistance is developed.

#### Cure Speed vs. Substrate

The rate of cure will depend on the substrate used. Acidic surfaces such as paper and leather may have longer cure times than most plastics and rubbers. Some plastic with very low surface free energies, such as polyethylene, polypropylene, PTFE and silicone rubber may require the use of a primer. The table below shows the fixture time achieved on different materials at 25°C/50% RH. This is defined as the time to develop shear strength of 0.12 N/mm<sup>2</sup> (1.2 kgf/cm<sup>2</sup>) and the strength keeps at least 10 seconds.

Bonding Identical Substrate	Fixture Time (seconds)
Mild steel	50 to 150
Stainless Steel	80 to 150
Aluminum A5754	60 to 90
Zinc plated	70 to 200
ABS (Acrylonitrile Butadiene Styrene)	10 to 30
PC(Polycarbonate)	40 to 100
NBR(Nitrile-Butadiene Rubber)	5 to 15
Phenolics	40 to 100

#### Cure Speed vs. Bond Gap

The rate of cure will depend on the bond line gap. A thinner bond line will give faster polymerization and a strong bond. Large bond gaps will result in a slower cure and lower bond strength. Cartell Activator may be used to increase cure speed.

### TYPICAL PERFORMANCE OF CURED

#### MATERIAL

#### Adhesive Properties

Cured for 24 hrs @ 25°C

Lap Shear Strength, ISO 4587/ASTM D1002/JIS K6850

Bonding Identical Substrate	kgf/cm <sup>2</sup>	N/mm <sup>2</sup>	psi
GBMS (Grit Blasted Mild Steel)	257.4	25.2	3660.4
Stainless Steel	177.0	17.3	2515.8
Aluminum A5754	180.3	17.7	2562.7
ABS	82.8*	8.1*	1176.9*
PVC(Polyvinyl chloride)	70.6*	6.9*	1003.5*
PC(Polycarbonate)	100.9*	9.9*	1434.2*
NBR(Nitrile-Butadiene Rubber)	5.1*	0.5*	72.5*

\* Substrate failure

Important Notice: Strength results will vary depending on the level of surface preparation and gap.

Cured for 24 hrs @25°C

#### Physical Properties

Coefficient of Thermal Expansion, ISO 11359-2, mm/mm/K	90×10 <sup>-6</sup>
Coefficient of Thermal Conductivity, ISO 8302, W/mK	0.10
Glass Transition Temperature, ISO 11359-2, °C	165

Cured for 24 hrs @25°C

#### Electrical Properties

Dielectric Constant, IEC 60250, @ 10kHz	3.4
Dielectric Breakdown Strength, IEC 60243-1, kV/mm	25
Surface Resistivity, IEC 60093, Ω	2 × 10 <sup>17</sup>
Volume Resistivity, IEC 60093, Ωcm	8 × 10 <sup>15</sup>
Dielectric Dissipation Factor, IEC 60250, @ 10kHz	<0.04

### TYPICAL ENVIRONMENTAL

#### RESISTANCE

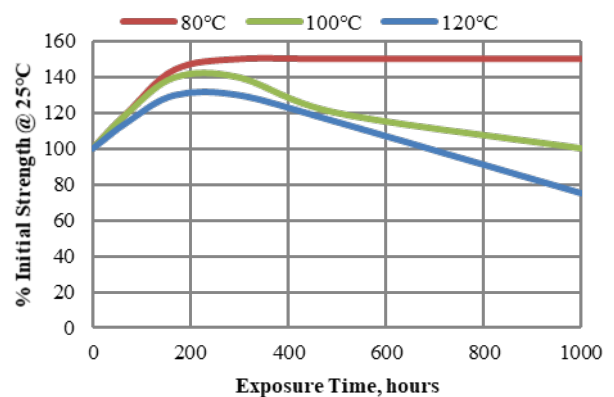
Cured for 1 week @ 25°C

Lap Shear Strength, ISO 4587/ASTM D1002/JIS K6850

GBMS (Grit Blasted Mild Steel)

#### HEAT AGING

Aged at temperature indicated and tested @25°C



### GENERAL INFORMATION

This product is not recommended for use in contact with strong oxidizing materials and polar solvents although will withstand a solvent wash without any bond strength deterioration. Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene. Full information can be obtained from the Safety Data Sheet (SDS).

#### Conversions:

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

**Storage & Handling precaution**

Keep in a cool area out of direct sunlight. Refrigeration to 2-8°C gives optimum storage stability. Containers should be tightly sealed when not in use. Product removed from containers may be contaminated during use. Do not pour back any product to the original container. Misuse of product will void all warranties. The shelf-life is 18 months from date of manufacture.

1. Use with proper ventilation. Avoid contact with skin and eyes.
2. If contact with skin occurs, rinse with warm water or dissolve gradually with solvent such as acetone or nitromethane.
3. Do not try to remove forcibly.
4. If adhesive gets into eye, keep eye open and rinse thoroughly. Seek medical attention immediately.
5. Keep well out of reach of children.

**Note:**

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