

# Devcon® MA2805

Low-halogen, Metal bonding, Acrylic, Structural adhesive

## PRODUCT DESCRIPTION

Devcon® MA2805 is an advanced nonconductive, low halogen content two-part methacrylate adhesive designed for the structural bonding of various electronic assemblies. In addition, MA2805 does a superb job of bonding of metals without primers, and engineered thermoplastics and composite assemblies with little to no surface preparation. Combined at a 10:1 ratio by volume, MA2805 has a working time of approximately 3 minutes and achieves 0.35MPa(50 psi) in approximately 10 minutes and 3.45MPa(500 psi) in approximately 20 minutes on Al6061 at 23°C(73°F). This product provides a unique combination of high strength, excellent fatigue endurance, outstanding impact resistance, and superior toughness.

## PRODUCT CHARACTERISTICS

Chemical Class	Acrylic
Appearance(Part A)	Off-white
Appearance(Part B)	Blue or black
Appearance(mixed)	Light blue or black
Components	Two component-requires mixing
Mix Ratio by Volume	Part A: Part B=10:1
Application	Bonding Solutions

## TYPICAL PROPERTIES OF UNCURED MATERIALS

### Part A:

Density @ 23 °C (73 °F), g/cc(lbs./gal)	0.97(8.10)
Viscosity@ 25 °C TB92, 10 rpm, cps	45,000-70,000
Shelf life, mos	9

### Part B:

Density @ 23 °C (73 °F), g/cc(lbs./gal)	0.95(7.93)
Viscosity@ 25 °C TB92, 10 rpm, cps	25,000-45,000
Shelf life, mos	13

### Mixed:

Mix ratio by weight, Part A : Part B	10:1
Mix ratio by Volume, Part A : Part B	10:1
Density @ 23 °C (73 °F), g/cc (lbs./gal)	0.95(7.95)
Gap Filling, mm(in)	Up to 6.4(0.25)
Work Time @ 23 °C (73 °F) min	3-4
Ionic Contaminants, ppm	
Chloride	≤900
Bromine	≤900
Halogen	≤900

Mix Recommendation Cartridge 50 ml

Nozzle of more than 18 elements

Substrates Recommended	Aluminum, Magnesium, CRS, Stainless steel, Galvanized steel, ABS, Polycarbonate, PVC, Acrylics Polyesters, Epoxies
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## TYPICAL CURING PERFORMANCE

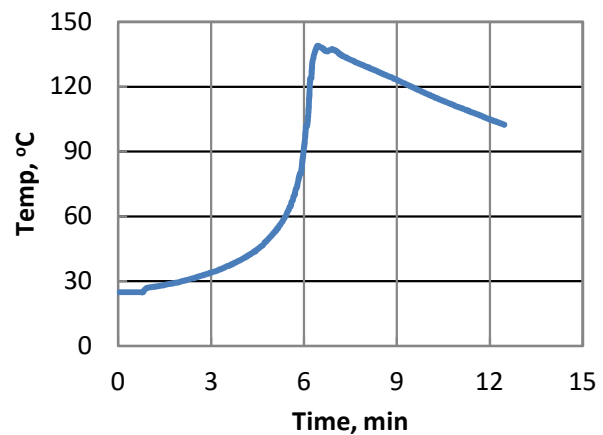
**Fixture Time** is defined as the time to develop a shear strength of 0.1 MPa.

Fixture Time, min	8
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**Exotherm Profile** was performed on 10 gram mass at

room temperature.

Exotherm Peak Time, min	6.5-8.5
Exotherm Peak Temperature, °C(°F)	>130(266)



Typical Exotherm Curve for DEVCON® MA2805 in 10 gm Mass at 23 °C(73 °F)

## TYPICAL PROPERTIES OF CURED MATERIALS

### Adhesive Properties:

Lap Shear Strength @ 23 °C(73 °F), MPa(psi)	
Al6061, ASTM D1002	13.5-15.5(1958-2248)
G60, ASTM D1002	16.5-18.5(2393-2683)

## CHEMICAL RESISTANCE

**Excellent Resistance to:** Hydrocarbons, Acids and Bases (pH 3-10), Salt solutions

**Susceptible to:** Polar Solvents, Strong Acids and Bases

## HANDLING AND APPLICATION PRECAUTIONS

Devcon® MA2805 is flammable. Contents include Methacrylate Ester. Keep containers closed after use. Wear gloves and safety glasses to avoid skin and eye contact. Wash with soap and water after skin contact. In case of eye contact, flush with water for 15 minutes and get medical attention. Harmful if swallowed. Keep out of reach of children. Keep away from heat, sparks, and open flames. Reference the Material Safety Data Sheet for more complete safety information prior to using this product.

## DIRETION FOR USE

Devcon® MA2805 may be applied manually or with all stainless steel bulk dispensing equipment. Static mixer

selection is critical to the proper mixing and performance of ITW adhesives. All machines dispensing ITW should have shrouds where applicable. Stainless Steel bulk equipment is recommended. For additional information concerning meter-mix equipment, contact ITW Sales Representatives. Pre-measured cartridges are also available, as well as the hand-held guns with which to dispense the adhesive.

1. To assure maximum bond strength, remove surface contaminants such as paint, oxide films, oils, dust, mold release agents and all other surface contaminants.
2. Use gloves to minimize skin contact. DO NOT use solvents for cleaning hands.
3. **Cartridges:** To begin using a new cartridge, remove cartridge cap and dispense a small amount of adhesive, making sure both Parts A&B are extruding. Attach proper nozzle, dispense to fill in the full nozzle in 2-3 times and then dispense approximately 25 mm beads, before applying onto part(s) to be bonded. Partially used cartridges can be stored with the mixing nozzle attached. To reuse, remove and discard old nozzle, attach a new nozzle, dispense approximately 25 mm beads, before applying onto part(s) to be bonded.
4. For maximum bond strength, apply adhesive evenly to both surfaces to be assembled.
5. Application to the substrates should be made as soon as possible. Larger quantities and/or higher temperatures will reduce the work time.
6. Surfaces must be mated within the specified working time and allow to cure. Use sufficient material to ensure the joint is completely filled when parts are mated and clamped. Higher temperatures will speed up curing.
7. After indicated working time, parts must remain undisturbed until the fixture time is reached. The bond should be allowed to develop full strength before subjecting to any service load.
8. All adhesive application, part positioning, and fixture should occur before the working time has expired.
9. Clean-up is easiest before the adhesive has cured. Citrus terpene or N-methyl pyrrolidone (NMP) containing cleaners and degreasers can be used for best results. If the adhesive is already cured, careful scraping, followed by a solvent wipe may be the most effective method of clean up.

**EFFECT OF TEMPERATURE**

Application of adhesive at temperatures between 18 °C (65 °F) and 26 °C (80 °F) will ensure proper cure. Temperatures below 18 °C (65 °F) will slow cure speed; above 26 °C (80 °F) will increase cure speed. The viscosities of Parts A and B of this adhesive are affected by temperature. To ensure consistent dispensing in meter-mix equipment, adhesive and activator temperatures should be held reasonably constant throughout the year.

**STORAGE**

Shelf life of DEVCON® MA2805 adhesive (Part A) is 9 months. Shelf life of activator (Part B), including cartridges that contain activators, is 13 months. Shelf life is based on continuous storage between 12 °C (54 °F) and 23 °C (73 °F). Long term exposure above 23 °C (73 °F) will reduce the shelf life of these materials. Prolonged exposure of activators, including cartridges that contain activators, above 37 °C (98 °F) quickly diminishes the reactivity of the product and should be avoided. These products should never be frozen.

**CONVERSIONS**

(°C x 1.8) + 32 = °F	N/cm / 1.75 = pli
kV/mm x 25.4 = V/mil	MPa x 145 = psi
mm / 25.4 = inches	N·m x 8.851 = lb·in
µm / 25.4 = mil	N·m x 0.738 = lb·ft
N x 0.225 = lb	N·mm x 0.142 = oz·in
N/mm x 5.71 = lb/in	mPa·s = cP
N/mm <sup>2</sup> x 145 = psi	

**WARRANTY**

ITW will only replace any material found to be defective. Because the storage, handling and application of this material are beyond our control, we can accept no liability for the results obtained.

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