



BEACON ADHESIVES CO.

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Magna-Tac M688

Product Information Sheet

Room Temperature Curing Epoxy Adhesive

Viscosity Range	Color	Base	Wt/Gal	Solids	Diluant	Shelf Life
700,000 - 1 Million	Light Tan	Modified epoxy	10 lbs.	100 %	Do not dilute	1 year

MagnaTac M688 is a thixotropic, room-temperature curing 100% reactive, two part, formulated epoxy for bonding all metals and other rigid materials (such as glass, ceramics, plastics, plastic foams and structural laminates) to themselves and to each other. Fully cured bonds exhibit minimal shrinkage, are electrical insulators and provide excellent resistance to weather, galvanic action and most chemical, acids and alkalis.

When mixed, Magna-Tac M688 is soft and buttery, making it extremely easy to spread smoothly and evenly. Once applied, it maintains its form and does not flow during the cure cycle. It is excellent for "poor fit" and similar void filling applications as well as where dripping or running of adhesive must be controlled.

Choice of Catalyst

CH-8: Room Temp. cure provides a good combination of shock-resistance, peel and lap shear strengths.

CH-16: Offers shock-resistance, peel strength and higher lap shear strength than CH-8.

Catalyst Number	Mixing Ratio (by wt)	Properties	Pot Life @ 77°F	Average Lap Shear Strength
M688 CH-8	100 PARTS 13 PARTS	For best balance of properties.	45 minutes (1 qt)	1500 psi
M688 CH-16	100 PARTS 32 PARTS			
M688 CH-16	100 PARTS 32 PARTS	For best impact and peel strength.	45 minutes (1 qt)	2100 psi

Surface Preparation

All bonding surfaces must be thoroughly cleaned, degreased and dried. For plastic surfaces, remove mold release if any.

Preparation of Adhesive

Always stir each part thoroughly, weigh accurately and mix slowly to avoid entrapping air.



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Depending on the type of strength desired, Magna-Tac M688 can be cured with Hardener CH-8 or Hardener CH-16. Always stir each part thoroughly, weigh accurately, and knead slowly to avoid entrapping air.

Note: Pot life can be lengthened substantially if shallow mixing vessels are used or smaller batches are mixed. Cover mixed material to prevent water absorption. Mixed adhesive may be applied with trowel, spatula, knife, paint roller, brush, etc. Apply enough mixed adhesive to leave about 4-6 mils in the final glue line. This may be accomplished by coating 4-6 mils on one surface only or by coating 2-3 mils on each surface.

If one surface is porous, more adhesive must be applied to fill the voids and yet produce a final glue line thickness of 4-6 mils.



Cure Time

Cure With Hardener CH-8

At room temperature, assemblies can be handled in approximately 4-6 hours. Magna-Tac M688 develops 85% of its maximum strength in 24-48 hours.

Fast Cure with Hardener CH-8

If a faster cure is required, the following cycles may be used:

Elevated Temperatures With CH-8

Temperature	Cure Time
150° F	90 minutes
200° F	30 minutes
250° F	20 minutes

Bonds will continue to improve in strength at room temperature until optimum is reached, usually within 3-4 days.



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Cure With Hardener CH-16

At room temperature, assemblies can be handled in approximately 4-6 hours. Magna-Tac M688 develops 85% of its maximum strength in 24-48 hours.

Elevated Temperatures With CH-16

Temperature	Cure Time
150° F	60 minutes
200° F	15 minutes
250° F	10 minutes

Typical lap shear values obtained when Magna-Tac 688 is used to bond 0.064" etched 2024T3 aluminum alloy to itself in a 1/2 overlap are as follows:

Test Temperature	CH-8 Tensile Shear, psi	CH-16 Tensile Shear, psi
-30 F	1350	2000
77F	1500	2400
200F	200	400

Properties

Thermal Conductivity:	5,000 x 10 ⁻⁶ Calories/(second)(square cm.)
Dielectric Constant @ 106 cps:	3-4
Linear Thermal Coefficient of Thermal Expansion:	40 x 10 ⁶ inches/inches/C

Container Sizes

1 quart cans

1 gallon cans

5 gallon pails

55 gallon drums