

# **3M**

# **Scotch-Weld™**

## **Metal Instant Adhesives**

### **MC100 • MC1500**

**Technical Data**

**September, 2014**

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**Product Description**

3M™ Scotch-Weld™ Metal Instant Adhesives are designed to give optimum performance and high strength bonds on metals, including galvanized or anodized surfaces.

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**Specific Features**

- 3M™ Scotch-Weld™ Metal Instant Adhesive MC100 is a low viscosity cyanoacrylate designed for metals bonding but which can also bond plastics, rubbers and other common substrates.
- 3M™ Scotch-Weld Metal Instant Adhesive MC1500 is a high viscosity Cyanoacrylate adhesive specially formulated for bonding metals, but can also bond most plastics, rubbers and other common substrates. MC1500 has excellent gap-filling capability.

# 3M™ Scotch-Weld™ Metal Instant Adhesives MC100 • MC1500

## Typical Uncured Physical Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

	3M™ Scotch-Weld™ Metal Instant Adhesives	
	MC100	MC1500*
Color	Clear	Clear
Base	Ethyl	Ethyl
Appearance	Liquid	Liquid
Specific Gravity (g/ml)	1.06	1.08
Viscosity (cps)	71 - 95 <sup>1</sup>	1200 – 1650 <sup>2</sup>
Time to Handling Strength (sec)**	4 - 30	15 - 30
Time to full cure (hr)	24	24

<sup>1</sup> Method Cone-Plate viscosity, CP75 @ 3000/s shear rate; <sup>2</sup> Cone-Plate viscosity, CP50 @ 100/s shear rate; \* Not available in the Americas Region; \*\* On EPDM. Time to handling is substrate dependent

## Typical Cured Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

	3M™ Scotch-Weld™ Metal Instant Adhesives	
	MC100	MC1500
Temperature Range (°F)	-60 to 180	-60 to 180
Gap Fill (in)	0.006	0.008
	Overlap Shear Strength (psi) <sup>1</sup>	
Steel <sup>2</sup>	2169	2277
Stainless Steel <sup>2</sup>	3039	2593
Aluminum <sup>2</sup>	2298	2413
ABS	914 <sup>3</sup>	925 <sup>3</sup>
Polycarbonate	791 <sup>3</sup>	874 <sup>3</sup>
PVC	1253 <sup>3</sup>	1164 <sup>3</sup>
Nylon	746	879
Polypropylene <sup>4</sup>	760 <sup>3</sup>	809 <sup>3</sup>
Silicone Elastomer <sup>5</sup>	106 <sup>3</sup>	107 <sup>3</sup>

<sup>1</sup> ASTM D-1002 <sup>2</sup> Grit blasted <sup>3</sup> Substrate failure <sup>4</sup> Primed with AC77 <sup>5</sup> Primed with AC79

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Temp (F)	Percent of Initial Strength	
	MC100	MC1500
72	100	100
167	84	84
212	69	72
257	22	21

**Handling Information**

**Surface Preparation**

For optimum strength structural bonds, paint, oxide films, oils, dust, mold release agents, and all other surface contaminants must be completely removed. However, the amount of surface preparation depends on the required bond strength and the environmental aging resistance desired by the user. Typical quick surface preparation would include wiping with a clean solvent (such as isopropyl alcohol\*), abrading the surface with a clean fine abrasive, and then wiping again with a clean solvent to remove loose particles.

**Directions for Use**

1. Ensure that parts are clean, dry, and free from oil and grease.
2. An instant adhesive activator may be required if there are bonding gaps or porous substrate surfaces, if substrates are low surface energy plastics (e.g., polyethylene, polypropylene) or if substrates have acidic surfaces (e.g., paper, leather).
3. Bond speed is typically very fast so ensure that parts are properly aligned before dispensing.
4. Product is normally hand applied from the bottle. Apply sparingly to one surface and press parts firmly together until handling strength is achieved. As a general rule, as little cyanoacrylate as possible should be used. Over application will result in slower cure speed and lower bond strength.

**Cured Bond Characteristics**

1. Full bond strength will typically be achieved within a 24 hour cure time.
2. Low humidity or low temperature conditions will slow down the cure rate.
3. After curing, 3M™ Scotch-Weld™ Metal Instant Adhesive bonds are suitable for use up to about 180°F (82°C).
4. Cyanoacrylate bond resistance to most oils and solvents is excellent. Long term humidity, moisture, or water immersion may affect the strength of a cured cyanoacrylate bond depending on the substrates and the bond gap. Testing is recommended to evaluate the effect.

**\*Note:** When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer’s precautions and directions for use.

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<b>Storage</b>	For short term storage (<30 days), keep adhesive in a cool (60°F to 80°F [16°C to 27°C]), dry place out of direct sunlight. Keep containers tightly covered and free of moisture. Refrigeration (40°F [4°C]) gives optimum long term storage stability.
<b>Shelf Life</b>	3M™ Scotch-Weld™ Metal Instant Adhesives can be expected to have a shelf life of one year from the date of shipment from 3M when stored under refrigerated conditions.
<b>Precautionary Information</b>	Refer to Product Label and Material Safety Data Sheet for health and safety information before using this product. For additional health and safety information, call 1-800-364-3577 or (651) 737-6501.
<b>Technical Information</b>	The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.
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**ISO 9001:2000**

This product was manufactured under a quality system registered to ISO 9001:2000 standards.

## **3M** Industrial Adhesives and Tapes Division

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