

Weicon VM 120 Super Glue for Metal is a special kind of contact adhesive which creates very high strength bonds with metal surfaces and parts. This cyanoacrylate adhesive is based on methyl ester which makes it different to the more common ethyl ester based super glues you will find. This is the source of its excellent compatibility with metals and the high strength bonds it creates.

VM 120 is a colourless, clear super glue that has a medium viscosity. This glue has a slightly slower curing process which allows you a little time to accurately position the parts you are joining after you're put on the glue. Like most glues, cure time for VM 120 will vary depending on materials and the conditions you are bonding in. Maximum cure time will be around 120 seconds (bonding PVC in a cool area with low humidity). Usually it will be closer to 20-40 seconds.



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When used to bond sand-blasted steel, its shear strength was tested to be 25 N/mm<sup>2</sup> which is an incredibly strong result for a super glue. VM 120 also rubbers and most plastics quite well. It struggles with glass, ceramic, wood and leather (luckily, we have other super glues for these).

### Applications

- Fixing snapped metal parts, ornaments and figurines.
- Reattaching metal levers and control devices.
- Securing name plates.
- Fitting small metal components in industrial devices.
- Bonding metal plates to one another.
- Attaching metal wear strips to various other materials.
- Fastening and securing metal components on boats and in the transport industries.
- Model making and craft.

### Technical Details

#### General Surface Compatibility

Metal	++
Plastic*	+
Rubber	+
EPDM Elastomers	-
Wood	-
Balsa-Wood	-
Glass / Ceramic	-
Leather	-

++ = Highly Compatible + = Compatible - = Not Compatible

\*Performance will vary depending on the exact type of plastic being bonded. Generally, low surface energy plastics will be much harder to bond to than high surface energy (such as rigid PVC).

#### Important

The values listed here and the information presented should not be treated as a substitute for specific technical advice. We cannot warrant the products performance or suitability for particular applications.

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### Properties

Ester Type	Methyl	
Condition / Nature	Colourless, Clear Liquid	
Viscosity at 20°C Brookfield	100-130 MPa	
Maximum Gap Covering Power**	0.15mm	
Specific Gravity at 20°C	1.1 g/cm <sup>3</sup>	
Flash Point According To Abel-Pensky DIN 55213	87°C	
Initial Adhesion on Aluminium*	50-70 Seconds	
Initial Adhesion on Nora Test Rubber*	10-60 Seconds	
Initial Adhesion on Rigid PVC*	30-120 Seconds	
Final Strength After	24 Hours	
Shear Strength Acc. To DIN 53283	Sand-Blasted Steel	25 N/mm <sup>2</sup>
	Sand-Blasted Aluminium	19 N/mm <sup>2</sup>
	Rigid PVC	12 N/mm <sup>2</sup>
	ABS	11 N/mm <sup>2</sup>
	PC	12 N/mm <sup>2</sup>
	NBR	>8 N/mm <sup>2</sup> (bonding exceeds strength of substrate)
Temperature Resistance	-50°C to +80°C	
Short-Term Temperature Resistance	+100°C	
Squatting Temperature	+150°C	
Refractive Index	1.49 n <sup>D20</sup> (Similar to Glass)	
Linear Thermal Expansion Coefficient ISO 11359 / ASTM D 696 (K <sup>-1</sup> )	80 x 10 <sup>-6</sup>	
Specific Forward Resistance DIN 53482* / ASTM D 257	>10 <sup>15</sup> Ω mm	
Dielectric Strength DIN 53481* / ASTM D 149	25 kV/mm	
Thermal Conductivity ISO 8894-2 / ASTM C 177	0.1 W/m·K	

### Solubility

Dimethyl Formamide, Dimethyl Sulfoxide, Acetonitrile, Alkali.  
Swelling is possible after long-term storage in ethyl acetate, acetone and methylene chloride.

\*Achieved in normal climate (DIN 50014) +23°C and 50% relative humidity. Within the given time period, handling strength can be reached.

\*\*These details are dependent on the type of material to be bonded and its properties.

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**Preparation of the Surface**

To achieve the best possible results, the surfaces being bonded must be clean and dry. Smooth surfaces should be roughened whenever possible (e.g. by sanding) as this increases the available surface area for the adhesive to bond with.

**Application**

Apply Weicon VM 120 Super Glue for Metal to one of the surfaces being joined. The bond line (or gap between the parts being bonded) should be between 0.05mm and 0.15mm. Outside of this, complete curing may not be achieved.

If bonding larger surface areas, Weicon Super Glues should be applied drop by drop to minimise the risk of inner tension of the adhesive. All of these glues are very economical as a single drop is sufficient for covering about 3-5cm<sup>2</sup> of surface area.

Weicon VM 120 should be used in an environment with 40-80% relative humidity if at all possible. In conditions below 40%, the cure will be substantially slowed or even inhibited. With a relative humidity greater than 80%, or when bonding basic substrates such as glass, shock-curing can occur. In such situations, some materials exhibit a drop in bond strength of approximately 10-15% due to inner tensions created in the bonding line.

Basic reacting surfaces (with pH values >7) will cure faster while acidic reacting surfaces will slow, and under certain conditions, completely inhibit polymerisation.

*Physiological properties / health and safety*

Physiologically, all Weicon Cyanoacrylate Adhesives may be considered essentially harmless. However, it is prudent to ensure that there is sufficient ventilation of work areas to cope with vapours released by the adhesive. Vapours released from contact adhesives may cause irritation to mucus membranes and the eyes. Avoid contact with skin and eyes (wear gloves and protective goggles). The use of Weicon Hand Protective Foam will also assist with preventing skin irritation and hand cleaning problems. For more information on this topic, please refer to the appropriate SDS.

**Storage**

Weicon VM 120 Super Glue should always be stored in a cool, dry and dark area. The shelf life is at least 9 months if stored at room temperature. If stored at 5°C (in a refrigerator) the shelf life can be extended to over 12 months.

**Availability**

Weicon VM 120 Super Glue for Metal is available from Swift Supplies in 30gm or 60gm Pens or 500gm Bottles.

These pens are a unique feature of our Weicon Adhesive range that allows for natural, accurate and easy application of the adhesive.

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