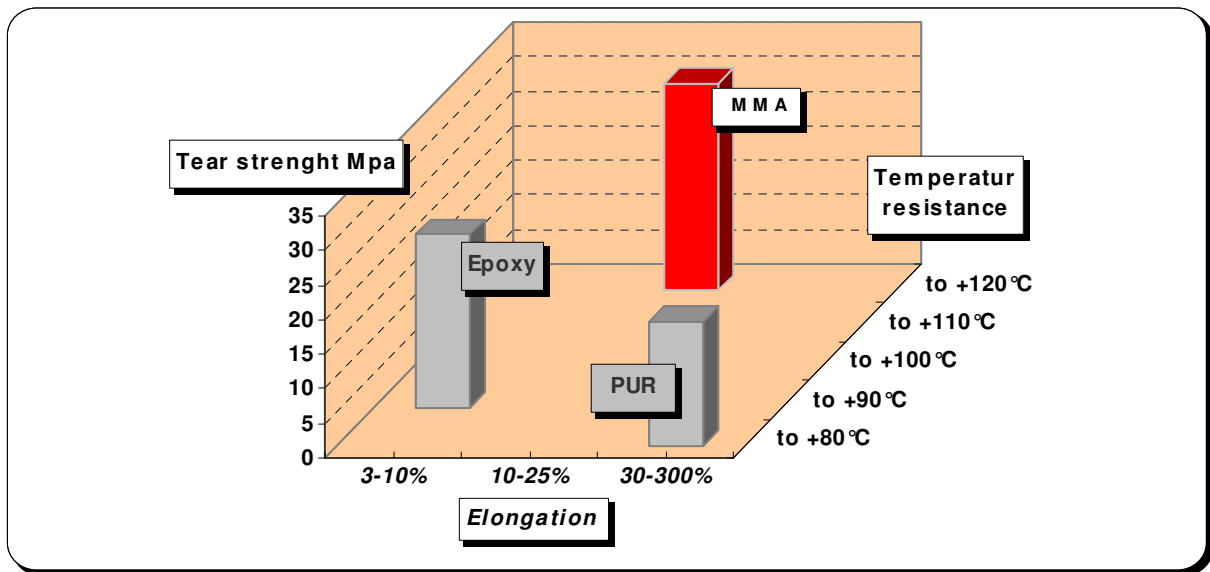


2K Methacrylate PowerWeld – Trans

**Methacrylate**

**1. Characteristics:** Structural bonding in modern manufacturing & processing demands extremely high degrees of strength, speed and safety for the functional bonding of modern materials. The *PowerWeld Trans* is a transparent, low odour 2-component structural adhesive for transparent gluing in particular glass and plastics. You can achieve high strength, tough yet slightly elastic bonds, mostly without chemical or mechanical preparation of the surface. Compared to classic structural bonding (e.g. Epoxies), MMA scores with its exceptional tear strength, remaining elasticity as well as its high degree of resistance to temperature extremes. The *PowerWeld Trans* adhesive is easy to apply because of its slight sagging viscosity. MMA is a state-of-the-art modern alternative to many conventional bonding methods like welding, soldering or riveting



- ◆ **Transparent Bonding**
- ◆ High lapshear resistance
- ◆ Very good chemical resistance
- ◆ High temperature specification
- ◆ Good application viscosity
- ◆ Partly no primer / no sanding
- ◆ Remains elastic
- ◆ Wide adhesion spectrum
- ◆ Very good working consistency
- ◆ Fills cuts and gaps up to 4mm
- ◆ Good reworkability
- ◆ UV stable



## 2. Applications:

### ***Automotive & Trucks & Transport:***

Bonding of design elements and spoilers  
GRP-Panels on the metal frame  
GRP-Panels to steel  
Aluminium parts to steel substrates  
Carbon panels to steel  
Repair of headlamp-fixtures  
Plastic panelling and casings  
Load-areas covers on buses  
Reinforcement and fixation of floor-panels  
Fixation of metal sheets to the A-frame  
Bonding of roof panels  
Bonding of reinforcement beams  
Bonding of skips  
Bonding of side panels on refrigerated trucks  
Bonding of rail carriages  
Bonding of bus frames  
Bonding of rear spoilers  
Bonding of various car panels  
Edge reinforcements in coach building

### ***Model Building & Prototyping***

Composite & metal bonding on prototypes for car, truck, bus, ship or rail

### ***Aircon & Energy Engineering***

Bonding of Vents and Shafts  
Bonding of Conductors

### ***Windows & Glass Processing***

Window frames, edges  
Corner angle bonding

### ***Marine & Ship Building***

High spec. assembly bonding  
Ships deck and hull bonding  
Bonding of the ships interior  
Cabin shells  
Bathroom units

### ***Wind & Solar Energy***

Bonding of stall-stripes on the rotorblades edge  
Bonding of lightning-security-receptors  
Cableschaft bonding

### ***Sports & Leisure Industries***

Sports articles (e.g. snowboards & skies)  
Bonding of trim  
Bonding of reinforcements

### ***Plastic Working Industries***

Bonding of reinforcements  
Bonding of fixations (clips, etc.)  
Bonding of metal sheets to flexible plastic parts  
Bonding of trim and decorative lining

### ***Metal Working Industries***

Signage frame bonding  
Bonding of Illuminated signs  
Part group assembly bonding  
Bonding of mountings, supports, sleeves, fixations, metal-spindles  
Pinhole filling on metal surfaces  
Repair of holes, gaps and bridges  
Panel bonding

### ***Plant-, Model- and Machinery Engineering***

Structural bonding of a large variety of metal- and composite parts  
Tube bonding  
Bonding of rubber lips to Composites  
Grip elements, extension elements  
Bonding of trim and decorative lining

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3. Technical properties

| Product name / packaging                      | Power Weld Trans  | 50ml cartridge   |
|---|---|--|
| <b>Chemical Base</b>                          | Component A: MMA Blend  | Component B: Amine   |
| <b>Colour</b>                                 | Component A: transparent  | Component B: transparent   |
| <b>Viscosity [mPa*s]</b>                      | Component A: ~30.000  | Component B: ~25.000   |
| <b>Density [g/cm<sup>3</sup>]</b>             | Component A: 0,99   | Component B: 0,98  |
| <b>Shore Hardness [Sh-D]</b>                  | 65 ± 5  |  |
| <b>Mixing ratio [Volume]</b>                  | 1:1   |  |
| <b>Working temperature (material) [°C]</b>    | +10°C bis +30°C   |  |
| <b>Working temperature (environment) [°C]</b> | +6°C bis +30°C  |  |
| <b>Thermal stability [°C]</b>                 | -40°C bis +80°C   |  |
| <b>Potlife [min]</b>                          | ~ 2 - 4   |  |
| <b>Tack free [min]</b>                        | ~ 20 - 40   |  |
| <b>Full curing time [h]</b>                   | ~ 24  |  |
| <b>Solvent</b>                                | No  |  |
| <b>VOC [EPA Methode 24]</b>                   | 430g/kg   |  |
| <b>Elongation [%]</b>                         | ~ 18  |  |
| <b>Change in volume [%]</b>                   | < 5   |  |
| <b>Maximum gapwidth [mm]</b>                  | ~ 0,5   |  |
| <b>Flash point [°C]</b>                       | < 12  |  |
| <b>Exotherm heat [°C]</b>                     | < 89  |  |
| <b>Tear strength [ASTM D1002]</b>             | ABS/ABS<br>PC/PC<br>PVC (hard)/PVC (hard)<br>PDCPD<br>Phenole<br><br>AL/AL<br>Steel/Steel   | ~ 4 N/mm <sup>2</sup> (S)<br>~ 3 N/mm <sup>2</sup> (C)<br>~ 5 N/mm <sup>2</sup> (C)<br>~ 10 N/mm <sup>2</sup> (C)<br>~ 7 N/mm <sup>2</sup> (S)<br><br>~ 14 N/mm <sup>2</sup> (S)<br>~ 12 N/mm <sup>2</sup> (C) |
| <b>Chemical Resistance</b>                    | Water<br>Saltwater<br>Oil & Grease<br>Petrol & Diesel<br>Water 90°C<br>Acetic acid 10%<br>Xylol<br>Strong Acids & Alkaline                                      | A<br>A<br>A<br>A<br>B<br>B<br>B<br>C   |
| <b>Shelf life</b>                             | 6 months  |  |
| <b>Shelf conditions</b>                       | Cool & dry (< +20°C; avoid high levels of humidity)<br>Keep away from direct sunlight<br>Temperatures above +25°C reduce the shelf life<br>Keep away from frost |  |

\*) All data measured at 23°C @ 50%rH. Meanderings at different ambience- and processing parameters have to be taken into account.

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**4. Substrates:**

| Metals                               |          | Plastics                          |          | Composites & other                |          |
|--------------------------------------|----------|-----------------------------------|----------|-----------------------------------|----------|
| Aluminium (eloxised)                 | <b>A</b> | ABS                               | <b>A</b> | GRP                               | X        |
| Aluminium (abraded)                  | X        | PA                                | X        | Carbon                            | X        |
| Stainless steel                      | X        | PBT                               | X        | BMC (Bulk Molding Compound)       | X        |
| Iron                                 | X        | PC                                | <b>A</b> | DMC (Dough Molding Compound)      | X        |
| Cast iron                            | X        | PE - HDPE, LDPE                   | X        | SMC (Sheet Molding Compound)      | X        |
| Copper                               | X        | PETG                              | X        | EPDM                              | X        |
| Brass                                | X        | PMMA (Acrylic glass, Plexiglass®) | <b>A</b> | Biofibre-Compound (Hemp & Flax)   | X        |
| Metall paints (2K)                   | X        | Polyester                         | X        | PP-EPDM                           | X        |
| Steel (electrolytically galvanised)  | X        | PP                                | X        | EDM-PVC                           | X        |
| Steel (fire galvanised)              | X        | PS (Polystyrol) – Styropor        | X        | PVC-MBR                           | <b>A</b> |
| Steel (galvanised)                   | X        | PUR                               | X        | PC-Blend                          | X        |
| Steel (phosporised)                  | X        | PVC - hard/soft                   | <b>A</b> | Siliziumcarbid, -nitride, -boride | X        |
| Steel (sandblasted)                  | <b>A</b> | PDCPD (Telene)                    | X        | Concrete                          | X        |
| Steel (increased fraction of nickel) | X        | PTFE (Teflon®)                    | X        | Basalt                            | X        |
|                                      |          | TPO (Thermoplastic polyolefines)  | X        | Glass                             | <b>A</b> |
| Chromium metals                      | X        |                                   |          | Granite                           | X        |
| Galvanised metals                    | X        |                                   |          | Rubber                            | X        |
|                                      |          |                                   |          | Wood                              | X        |
|                                      |          |                                   |          | Ceramics                          | X        |
|                                      |          |                                   |          | Marble                            | X        |
|                                      |          |                                   |          | Natural stone (eg. sandstone)     | X        |

**A** = very much suitable, partly without (\*) or with suitable chemical and/or mechanical pre treatment (\*).  
**X** = not specifically tested.

\*) Thorough cleaning of the substrates is always necessary. A suitable primer will always increase the adhesion, regardless of the adhesive system you are intending to use. Because of the large variety of usages of the individual products and the magnitude of circumstances (e.g. methods of usage, surface conditions, system build, etc.) the user is obliged to do a personal trial prior to usage. VIP GmbH offers the possibility of bonding trials in VIP's own lab for classification of various substrates and suitable adhesives.

#### **5. Directions for use:**

Before the Application of the Power Weld it is necessary to check the safety data sheet (SDS) for info on precautions and security measures associated with the product. Even on not classified products the usual precautions for chemical materials should always be adhered to.

Easy application with hand operated or pneumatic dosage gun. To prevent any irregularities in the dried product a guaranteed (1:1) mixing ratio must be achieved at all times. This is only possible using the suitable static mixers with a minimum 16 mixing elements as recommended.

Surfaces must always be dry and free of dust, oils or any grease. For cleaning we recommend the VIP Special Cleaner. On all unprepared **metals**, please clean with a solvents base spirit wipe first. Please remove rust or other corrosion and fill the damaged areas using our VIP liquid metal or knead metal. In general the use of a chemical (use of a primer) or mechanical preparation (sanding, shot blasting, etc.) always increases the adhesion on the surface to be bonded.

Open the cartridge and attach the static mixer. First apply 2-3cms that you have to discard to ensure the proper mixing of the product. Afterwards apply the Power Weld onto the areas to be bonded. Please apply the adhesive immediately as a thin film or droplet onto the substrate. If required smoothen over the bond with a spatula.

The thickness of your bead is dependent on the materials to be bonded (ideally 0.75mm to 3mm). Please ensure that you position the parts within the recommended work time. Later corrections, while the material is curing can reduce the adhesion to your substrates. Please make sure hat the material completely fills the gap to achieve a homogenous adhesive bead.

The cure time is dependent on thickness, working temperature and the temperature of your substrates. For best results, please apply the product at 22°C. Materials with a high conductivity of heat will prolong the cure time. The product will not cure under a surrounding temperature of 6°C. If the substrate is too cold, a thin (mostly invisible) film of condensed water might build on the surface, and this can cause adhesion failure. These surfaces must be tempered and dried prior to bonding.

The cure speed varies depending on the surface materials (steel reacts faster than plastics). The optimum gap width is between 1-4 mms depending on adhesive area, material elongation, stress and mechanical strain.

The final cure is achieved after approx. 24 hours (dependent on temperature, material and gapwidth).

**Caution:** The mixing of the two components causes a chemical reaction with a strong exotherm build up of heat. When mixing larger amounts a plainly recognisable rise in temperature in the material will occur. Ideally please bond the parts with a low bead thickness (up to 3mm). Never exceed a bead thickness of 4mm. Do not discard the reacting material in plastic bins and do not hold metal work pieces in your hands while the adhesive is curing.

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**6. VIP Accessories for use**

| Product Description        |  | Art. no.* |
|----------------------------|--|-----------|
| Special Cleaner            | 1K Alkaline Liquid Cleaner – For Plastics and Metal surfaces     | PMX 4910  |
| Liquid metal (Alu & Steel) | 2K PowerPoxy – for Repair of holes and corrosion areas           | PPX 5020  |
| Knead metal (Alu & Steel)  | 2K Epoxy Kitt – for Repair of holes and corrosion areas          | PKI 5020  |
| Dosage gun 50ml            | 1:1 Cartridge application - manually – metal – <b>Deluxe</b>     | PMX 5003  |
| Mixer eco transparent      | For 25/50ml cartridges – Bayonet - 16 Mixing elements – round    | PMX 4942  |
| Mixer turbo blue           | For 25/50ml cartridges – Bayonet - 16 Mixing elements – square   | PMX 4944  |
| Mixer Supreme              | For 25/50ml cartridges – Bell type - 16 Mixing elements – square | PMX 4949  |

\*) For further accessories, please check out the latest VIP Product/Pricelists or our web page: [www.vip-gmbh.com](http://www.vip-gmbh.com)

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the user's responsibility to satisfy himself, by his own information and test, to determine suitability of the product for his own intended use, application and job situation and user assumes all risk and liability from his use of the product (e. g. usage parameters, conditions of the substrate, system build, etc.). We recommend in general testing the suitability on a small sample prior to use. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Changes in the material due to product improvements can occur and do not always warrant a change in the technical info.

The rights of the buyer regarding the quality of our materials are as per our terms of sale in the latest valid version. For special requests that are outside the scale of this technical info, please get in touch with our technical service team under +49-(0)89-89 55809 30 who will be happy to help.

Valid is only the latest updated version of this technical product information.

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