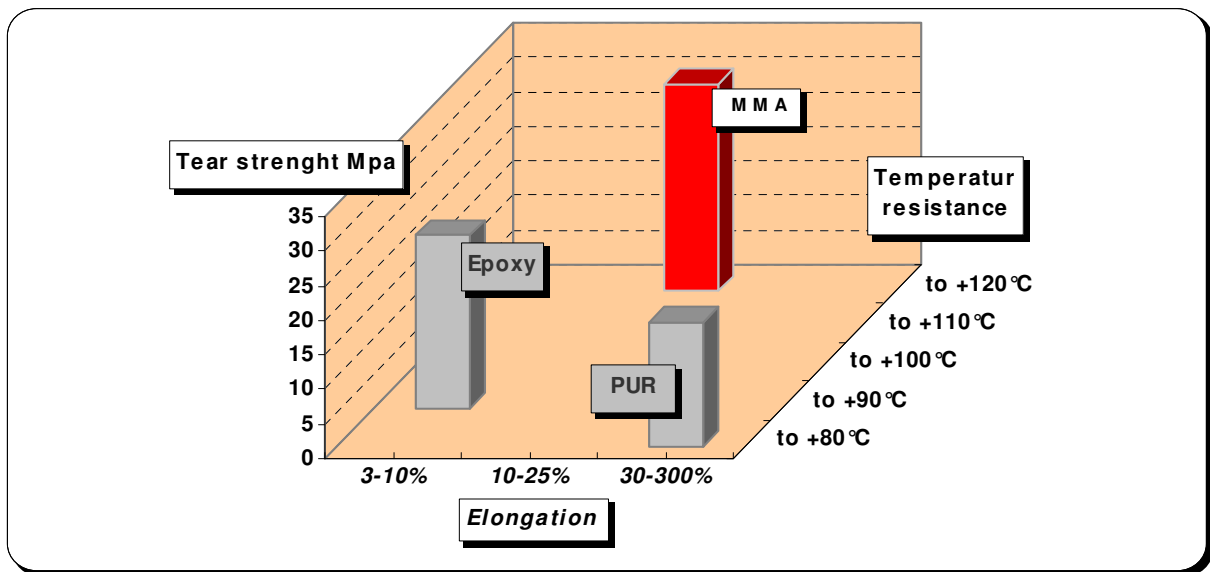


2K Methacrylate PowerWeld PP/PE

Methacrylate

1. Characteristics: Structural bonding in modern manufacturing and processing demands extremely high degrees of strength, speed and safety of the functional bonding of modern materials. The *PowerWeld PP/PE* is a special designed adhesive, that can bond polyolefins and many low surface energy plastics, including many grades of polypropylene and polyethylene. The *PowerWeld PP/PE* is a 2-component structural adhesive (10:1). You can achieve high strength, tough yet slightly elastic bonds, mostly without special surface preparation. The adhesive is easy to apply and mostly non-sag, because of its thixotropic viscosity. MMA is a state-of-the-art modern alternative to many conventional fixing methods like welding, soldering or riveting.



- ◆ **PP/ PE Bonding**
- ◆ High lapshear resistance
- ◆ Very good chemical resistance
- ◆ High temperature specification
- ◆ Mostly no priming / no sanding
- ◆ Wide adhesion spectrum
- ◆ Non-sag; 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
Cableshaft 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	Power Weld PP/PE	50ml
Chemical Base	Component A: Methacrylate	Component B: Amine
Colour	Component A: white	Component B: transparent
Viscosity [mPa*s]	Component A: 7.500-8.000	Component B: 5.000-6.000
Density [g/cm ³]	Component A: 0,99	Component B: 0,98
Shore Hardness [Sh-D]	55 ± 5	
Mixing ratio [Volume]	10:1	
Working temperature (material) [°C]	+10°C to +30°C	
Working temperature (environment) [°C]	+6°C to +30°C	
Thermal stability [°C]	-50°C to +120°C	
Potlife [min]	~ 2-4	
Tack free [min]	~ 8-12	
Full curing time [h]	~ 24	
Solvent	No	
VOC [EPA Methode 24]	430g/kg	
Elongation [%]	~ 19	
Change in volume [%]	< 5	
Maximum gapwidth [mm]	~ 4	
Flash point [°C]	> 85	
Exotherm heat [°C]	< 25	
Tear strength [ASTM D1002]	PP/PP PE/PE ABS/ABS PC/PC PMMA/PMMA PVC (hard)/PVC (hard) Polystyrol/Polystyrol GRP/GRP AL/AL AL/PE Stainless steel/PE	~ 4 N/mm ² (S) ~ 5 N/mm ² (S) ~ 7 N/mm ² (S) ~ 6 N/mm ² (S) ~ 7N/mm ² (S) ~ 10 N/mm ² (C) ~ 5 N/mm ² (S) ~ 15 N/mm ² (C) ~ 14 N/mm ² (C) ~ 8 N/mm ² (S) ~ 8 N/mm ² (S)
S = Substrate failure C = Cohesive failure		
Chemical Resistance	Water Saltwater Oil & Grease Petrol & Diesel Water 90°C Acetic acid 10% Xylol Strong Acids & Alkaline	A A A A B B B C
A = no effect B = minimal effect C = failure		
Shelf life	6 months	
Shelf conditions	Cool & dry (< +20°C; avoid high levels of humidity) Keep away from direct sunlight Temperatures above +25°C reduce the shelf life 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.

4. Substrates:

Metals		Plastics		Composites & other	
Aluminium (eloxised)	A	ABS	A	GRP	A
Aluminium (abraded)	X	PA	X	Carbon	X
Stainless steel	A	PBT	X	BMC (Bulk Molding Compound)	X
Iron	X	PC	A	DMC (Dough Molding Compound)	X
Cast iron	X	PE - HDPE, LDPE	A	SMC (Sheet Molding Compound)	X
Copper	X	PETG	A	EPDM	X
Brass	X	PMMA (acrylic glass, Plexiglass®)	A	Biofibre-Compound (Hemp & Flax)	X
Metal paints (2K)	X	Polyester	X	PP-EPDM	X
Steel (electrolytically galvanised)	X	PP	A	EDM-PVC	X
Steel (fire galvanised)	X	PS (Polystyrol) – Polystyrene	A	PVC-MBR	X
Steel (galvanised)	X	PUR	X	PC-Blend	X
Steel (phosporised)	X	PVC - hard/soft	A	Siliziumcarbid, -nitride, -boride	X
Steel (sandblasted)	A	PDCPD (Telene)	X	Concrete	X
Steel (increased fraction of nickel)	X	PTFE (Teflon)	X	Basalt	X
		TPO (Thermoplastic Polyolefins)	A	Glass	X
Chromium metals	X	POM	A	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 material safety data sheet (MSDS) 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 (10:1) 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.

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	10:1 Cartridge application - manually – plastic	PMX 5004
Mischer Supreme	10:1 mixer for 50ml cartridge - bell type - 16 elements	PMX 4966

*) For further accessories, please check out the latest VIP Product/Pricelists or our web page: 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.