



Adhesive Solutions for OEM Structural and Assembly Applications



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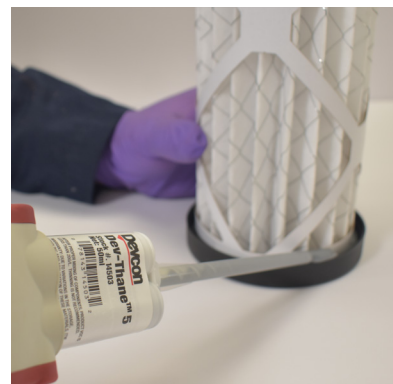
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Introduction

ITW Performance Polymers provides a broad range of advanced structural and semi-structural adhesives that help simplify assembly processes, resulting in lower production cost and higher manufacturing throughput. Our portfolio of adhesive solutions comprises proven brands including Plexus methylmethacrylate adhesives, Devcon epoxy adhesives and Permatex cyanoacrylate adhesives. These products are well suited for bonding a wide range of composites, thermoplastics, metals and dissimilar substrates in several end-markets including transportation, wind, marine, signs and general industrial.

Our continued success is due to the importance we place on building strong and lasting relationships with our customers to provide the highest level of service. Our commitment to quality is reflected in every adhesive system that we produce providing our customers with reliability and consistency in every one of our products.

Services and Support

Comprehensive test programs developed to help in the understanding of how our adhesives will behave on our customers substrates.

Invaluable technical and sales support with assistance in product selection, application guidance, dispensing methods, and equipment support.

Access to the global distribution network through our strategic partners. Our customers have access to the high-quality products and services around the world. We understand the challenges in today's production environments and are always available to demonstrate the wide range of bonding solutions for any application.

Products

Plexus® Adhesives

Plexus MMA and Hybrid adhesives are room temperature cured and provide excellent adhesion to metals, composites and plastics. Plexus adhesive solutions can be tailored to fit any process and offer superior toughness over a wide range of gaps, substrate thicknesses, and environmental conditions. The result is a structural bond and final seal that can be used in a variety of environmental settings.

Devcon® Adhesives

Devcon epoxy adhesives provide excellent adhesions to the toughest of metals and come in a wide variety of cure times and package sizes. They deliver excellent peel and shear strength while offering extreme chemical and environmental resistance.

Permatex® Adhesives

Permatex range of cyanoacrylates and anerobic threadlockers provide excellent adhesion in just seconds. These adhesives develop strength quickly so you never have to fear moving your part. The thin bond lines are virtually invisible, making them an excellent choice for small repairs.



Substrate Guide

Product	Metals					Plastics						Composites					Other
	Aluminum	Cold Rolled Steel	Painted/Coated Metals	Hot Dipped Galvanized	Stainless Steel	ABS	Acrylics	Polyamides (Nylons)	Polycarbonate	Polyesters	Vinyls (PVC)	Gelcoats	Fiberglass	Phenolics	RTM	SMC	
MA205HV	●	●	●		●	●	●	○	●		●	●	○		○	○	●
MA300	○	○	●		○	●	●		○	○	●	●	●	●	●	○	●
MA310	○	○	●		○	●	●	○	○	●	●	●	●	●	●	○	●
MA320	○	○	●		○	●	●			●	●	●		●	○		
AO/MA420	○	○	●		○	●	●	○	●	●	●	●	●	●	○		●
MA420FS	○	○	●		○	●	●	○		●	●	●		●	○		
MA422	○	○	●		○	●	●	○		●	●	●		●	○		
MA425	○	○	●		○	●	●	○		●	●	●		●	○		
MA530	○	○	●		○	●	●	○		●	●	●		●	○		
MA560-1	○	○	●		○	●	●	○		●	●	●		●			
MA550	○	○	●		○	○	●	○		●	●	●		●			
MA590	○	○	●		○	●	●	○		●	●	●		●			
MA685	○	○	●		○	●	●	●		●							
MA830	●	●	●		●	●	●			●	●	●		●	○		●
MA832	●	●	●		●	●	●			●	●	●		●	○		●
MA8110	●	●	●	●	●	●	●	●	○	●	●	●	●	●	○		○
MA8120	●	●	●	●	●	●	●	●	○	●	●	●	●	●	○		○
MA920	○	○	●		○	●	●			●	●	●		●	○		
MA1020	○	○	●		○	●	●	●		●	●	●		●	○		
MA1025	○	○	●		○	●	●	○		●	●	●		●	○		
MA2015 WHITE		○	●			●	●	○		●	●	●		●			
MA2045 WHITE			●			●	●	○		●	●	●		●			
MA2030		○	●			●	●	○		●	●	●		●			
MA2045			●			●	●	○		●	●	●		●			
MA2090			●			●	●	○		●	●	●		●			
MA2230	●	●	●		●	●	●	○		●	●	●		●			
MA2245	●	●	●		●	●	●	○		●	●	●		●			
MA2290	●	●	●		●	●	●	○		●	●	●		●			

● = Preferred | ○ = Good (May require PC120 on metals) | Blank = Contact ITW PP Technical Services.

The technical information, recommendations, and other statements contained in this brochure are based upon tests or experience that ITW Performance Polymers believes are reliable, but the accuracy or completeness of such information is not guaranteed. The information provided is not intended to substitute for the customers own testing.

Product	Metals							Plastics						Composites				
	Aluminum	Cast Iron	Copper	Cold Rolled Steel	Painted/Coated Metals	Plated Metals	Brass	Stainless Steel	ABS	Acrylics	Polyamides (Nylons)	Polycarbonate	Polyesters (PET, PBT)	Vinyls (PVC)	Gelcoats	Fiberglass	Phenolics	RTM

Epoxy

1 Minute Epoxy Gel	○	●	○	●	●		○	○			○		○						
5 Minute Epoxy	○	●	○	●	●		○	○						○					
5 Minute Epoxy Gel	○	●	○	●	●		○	○						○					
10 Minute Epoxy	○	●	○	●	●	○	○	○	○	○				○		○			
2-Ton Epoxy	○	●	○	●	●	○	○	○						○		○			
HP 250	○	●	○	●	●	○	○	○			○		○		○	●		○	
Epoxy Plus 25	○	●	○	●	●	○	○	○		○	○		○	○	○	●		○	
Food Grade Pot & Seal	○	●	○	●	●		○	○						○					

MMA

PLASTIC WELDER WHITE	○	○		○	●			○	●	●	●	●	●	●	●	●	●	●	○
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PU

Devthane-5	○	○		○	●	○		○	●	●					●	●			
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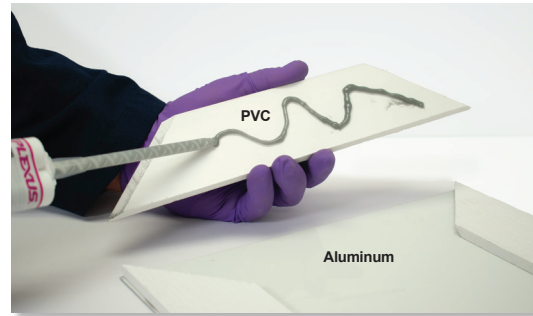


Product	Metals					Plastics						Composites					Other	
	Aluminum	Cold Rolled Steel	Painted/Coated Metals	Hot Dipped Galvanized	Stainless Steel	ABS	Acrylics	Polyamides (Nylons)	Polycarbonate	Polyesters	Vinyls (PVC)	Gelcoats	Fiberglass	Phenolics	RTM	SMC		Rubbers
GPE 3	●	●	●		●	●	●	○	○	●	●	●	○	○	○	○	○	●
GPE 15	●	●	●		●	●	●	○	○	●	●	●	○	○	○	○	○	●
GPE 30	●	●	●		●	●	●	○	○	●	●	●	○	○	○	○	○	●
GPE 100	●	●	●		●	●	●	○	○	●	●	●	○	○	○	○	○	●
TE 1000	●	●	●	○	●	●	●	○	○	●	●	●	○	○	○	○	○	●
TE 2400	●	●	●	○	●	●	●	○	○	●	●	●	○	○	○	○	○	●

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Featured Products



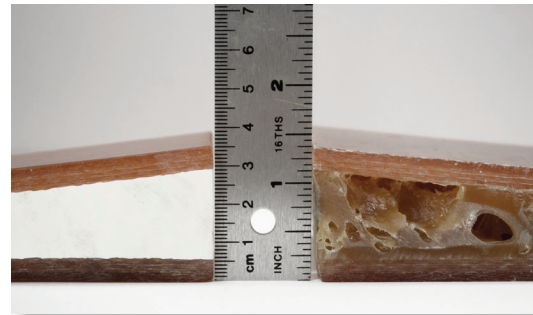
Plexus MA8000 Series Ideal for bonding galvanized & dissimilar materials

Plexus MA8110

- Forms high strength bonds on more materials than any other product in the line.
- Requires little to no surface preparation
- Exceptional durability

Plexus MA8120

- All the features of MA8110 with a longer working and fixture time.
- Great for applications that need slightly longer elongation.



MA2000 White (left) can fill 1" gaps without boiling

Plexus MA2000 White Series A UV and yellowing resistant adhesive that cures white

Plexus MA2015 White

- Great for A-surface applications.
- No-sag formula allows for gap fill up to 1" thick without boiling.
- Incredible strength and toughness on Fiber Reinforced Plastics.

Plexus MA2045 White

- A formulation of the MA2015 with a longer working and fixture time.



Plexus A0420 / MA420 A high strength all-purpose adhesive with an extremely fast working and fixing time

- Excellent fatigue endurance, impact resistance and toughness.
- Outstanding shear strength on a variety of materials.

Plexus MA685

The clear adhesive solution when clarity is a must.

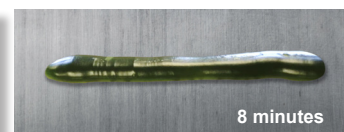
- Translucent Appearance
- UV Stable
- Water Resistant
- Joins a variety of materials



Plexus MA205HV

A high strength adhesive with an extremely fast working and fixture time.

- Changes from blue to green indicating it's ready to be unclamped or sanded.
- Bonds to a wide variety of materials.
- Perfect for A-surfaces that may need to be painted or sanded.

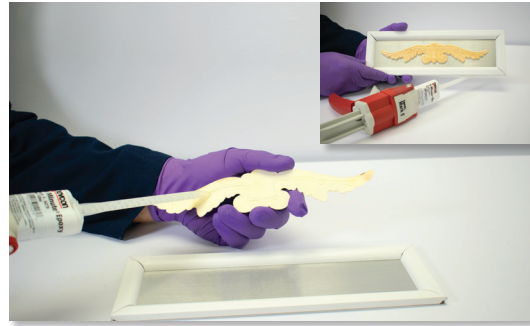


Product Properties

Product	Description	Working Time ¹ , min.	Fixture Time ² , (min.)	Tensile Strength, psi (MPa)	Tensile Elongation, %	Maximum Gap Fill, in. (mm)	Part A Viscosity, cP * 10 ³	Part B Viscosity, cP * 10 ³
MA205HV	Primerless to aluminum, ultra-fast fixture times	3 - 5	7 - 9	2,000 - 2,500 (13.8 - 17.2)	20 - 50	0.250 (6.35)	100 - 130	15 - 50
MA300	All purpose, high strength	3 - 6	12 - 15	3,000 - 4,000 (20.7 - 27.6)	5 - 15	0.125 (3.17)	40 - 70	40 - 70
MA310	All purpose, high strength	15 - 18	45 - 55	3,500 - 4,500 (24.1 - 31.0)	5 - 15	0.125 (3.17)	40 - 70	40 - 70
MA320	Low modulus, high elongation, high toughness	8 - 12	25 - 30	1,700 - 2,200 (11.7 - 15.2)	60 - 100	0.375 (9.52)	135 - 175	30 - 70
AO/MA420	All purpose, high strength, high toughness	4 - 6	18 - 22	2,700 - 3,000 (18.6 - 20.7)	30 - 50	0.375 (9.52)	100 - 125	35 - 80
MA420FS	Ultra-fast for robotic applications	1 - 2	3 - 4	1,250 - 1,500 (8.6 - 10.3)	5 - 15	0.125 (3.17)	80 - 100	50 - 80
MA422	All purpose, high toughness	17 - 24	35 - 40	2,700 - 3,000 (18.6 - 20.7)	75 - 100	0.375 (9.52)	100 - 125	35 - 70
MA425	All purpose, high toughness	30 - 35	80 - 90	2,000 - 2,600 (13.8 - 17.9)	110 - 150	0.375 (9.52)	100 - 125	35 - 70
MA530	Highly thixotropic, high toughness	30 - 40	90 - 160	2,500 - 3,500 (17.2 - 24.1)	90-160	0.700 (17.78)	130 - 180	160 - 215
MA550	UV stable white	40 - 50	70 - 75	1,800 - 2,400 (12.4 - 16.5)	40 - 80	0.375 (9.52)	130 - 160	30 - 70
MA560-1	Highly thixotropic, high toughness	55-70	220 - 240	2,500 - 3,100 (17.2 - 21.3)	>130	1.000 (25.40)	145 - 185	170 - 205
MA590	Highly thixotropic, high toughness	90 - 105	250 - 380	2,000 - 2,500 (13.8 - 17.2)	>130	1.500 (38.10)	140 - 230	165 - 230
MA685	Crystal clear, UV stable	8 - 12	15 - 25	N/A	> 20	0.25 (6.35)	180 - 240	30 - 40
MA830	Primerless to aluminum, high strength	4 - 6	15 - 25	3,200 - 3,800 (22.0 - 26.2)	30 - 60	0.500 (12.70)	80 - 120	35 - 80
MA832	Primerless to aluminum, high strength	12 - 16	55 - 60	2,700 - 3,000 (18.6 - 20.7)	30 - 60	0.500 (12.70)	80 - 130	35 - 80
MA8110	Next generation multi-material bonder, low odor	8 - 12	35 - 50	3,100 - 3,600 (21.4 - 24.8)	40 - 70	0.500 (12.70)	40 - 70	40 - 70
MA8120	Next generation multi-material bonder, low odor	18 - 22	75 - 90	2,500 - 3,000 (17.2 - 20.6)	50 - 80	0.500 (12.70)	40 - 80	80 - 120
MA920	Low odor, high toughness	4 - 6	15 - 18	1,700 - 2,200 (11.7 - 15.2)	80 - 100	0.375 (9.52)	80 - 120	35 - 80
MA1020	Low odor, low shrink	4 - 6	15 - 20	1,750 - 2,000 (12.1 - 13.8)	90 - 110	0.375 (9.52)	100 - 130	35 - 80
MA1025	Low odor, low shrink	20 - 25	40 - 45	1,400 - 1,800 (9.7 - 12.4)	90 - 110	1.000 (25.40)	180 - 220	35 - 70
MA2015 White	UV stable white, highly thixotropic	12 - 18	40 - 50	2,700 - 3,200 (18.6 - 22.1)	> 30	1.500 (38.10)	180 - 220	35 - 70
MA2045 White	UV stable white, highly thixotropic	40 - 50	90 - 120	2,200 - 2,900 (15.2 - 20.0)	> 30	1.500 (38.10)	180 - 220	35 - 70
MA2030	Highly thixotropic, high toughness	25 - 35	70 - 90	3,000 - 3,400 (18.6 - 23.4)	90 - 125	1.500 (38.10)	180 - 220	35 - 70
MA2045	Highly thixotropic, high toughness	40 - 45	100 - 130	2,200 - 2,900 (15.2 - 20.0)	90 - 125	1.500 (38.10)	180 - 220	35 - 70
MA2090	Highly thixotropic, high toughness	80 - 100	190 - 230	2,200 - 2,900 (15.2 - 20.0)	90 - 120	1.500 (38.10)	180 - 220	35 - 70
MA2230	Low shrink, highly thixotropic, high toughness	20 - 30	70 - 90	2,000 - 2,800 (13.4 - 19.3)	>60	1.500 (38.10)	180 - 220	35 - 70
MA2245	Low shrink, highly thixotropic, high toughness	40 - 45	100 - 130	2,000 - 2,800 (13.4 - 19.3)	>60	1.500 (38.10)	180 - 220	35 - 70
MA2290	Low shrink, highly thixotropic, high toughness	80 - 100	190 - 230	2,200 - 2,900 (15.2 - 20.0)	90 - 120	1.500 (38.10)	180 - 220	35 - 70

1. The maximum allowable time to apply adhesive, mate, and position parts after mixing adhesive and activator at room temperature.
2. Time required for adhesive to generate sufficient bond strength to allow the parts to be handled without deformation of the bond line.

Featured Products



Devcon 5 Minute® Epoxy
A rapid-curing, general-purpose adhesive that forms hard, rigid bonds in minutes.

Devcon 5 Minute® Epoxy

- Cures fast for quick metal to metal bonds.
- Also suitable for wood, fabrics, ceramics, glass, and concrete.
- Easy to dispense and reaches functional strength within 1 hour.

Devcon 5 Minute® Epoxy Gel

- All the features of 5 Minute® Epoxy in a gel.
- Thixotropic, non-migrating gel adhesive.
- Excellent gap filling properties.



Devcon 2-Ton Epoxy
Two-part high strength, non-shrinking, weather resistance epoxy system

- Once cured, adhesive has excellent resistance to water, solvents, and wide temperature cycles.
- Excellent impact resistance.
- Suitable for bonding ceramics, ferrous and non-ferrous metals, ferrites, wood, glass, and concrete.



Devcon Dev-Thane™ 5
Two-part urethane adhesive for high-performance bonding and sealing

- Primerless solution joins and seals in one easy step.
- High tensile elongation makes it great for dissimilar substrates.
- Bonds to aluminum, steel, ABS, urethane, wood, glass and concrete.



Permatex TE 2400
Exceptional flexibility and thermal shock resistance

- High-viscosity, rubber-toughened, instant adhesive.
- Capable of bonding dissimilar materials.
- Provides enhanced toughness to peel and shock loads, even while filling large gaps.
- Humidity and water resistant.

Product Properties

Product	Working Time ¹ , min.	Fixture Time ² , min.	Shear Strength, psi (MPa)	Tensile Elongation, %	Impact Strength, ft-lb/in ² (J/cm ²)	Maximum Gap Fill, in. (mm)	Mixed Viscosity, cP * 10 ³	Operating Temperature, °F (°C)
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Epoxy

1 Minute Epoxy Gel	45 sec.	1	1,600 (11.0)	1	4.5 (0.95)	0.500 (12.70)	70	-40°F - 200°F (-40°C - 93°C)
5 Minute Epoxy	3 - 6	10 - 15	1,900 (13.1)	5	5.5 (1.16)	0.137 (3.48)	10	-40°F - 200°F (-40°C - 93°C)
5 Minute Epoxy Gel	4 - 7	10 - 15	2,500 (17.2)	1	6.5 (1.37)	0.137 (3.48)	Gel	-40°F - 200°F (-40°C - 93°C)
10 Minute Epoxy	10	20	2,400 (16.6)	5	10 (2.10)	0.500 (12.70)	80 - 90	-40°F - 200°F (-40°C - 93°C)
2-Ton Epoxy	8 - 12	30 - 35	2,250 (15.5)	1	6.5 (1.37)	0.500 (12.70)	8	-40°F - 200°F (-40°C - 93°C)
HP 250	65	300	3,200 (22.1)	25	12.3 (2.58)	0.980 (24.89)	105	-67°F - 250°F (-19°C - 121°C)
Epoxy Plus 25	25	210	2,750 (19.0)	20	10 (2.10)	0.700 (17.78)	70	-40°F - 200°F (-40°C - 93°C)
Food Grade Pot & Seal	42	10	1,940 (13.4)	1	5.2 (1.09)	0.375 (9.52)	100	-40°F - 275°F (-40°C - 135°C)

MMA

Plastic-Welder White	2-3	8 - 10	1,300 - 3,000 (9.0 - 20.7)	15 - 25	22 (4.62)	0.125 (3.17)	50	-67°F - 250°F (-19°C - 121°C)
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Dev-Thane 5	5	45	630 - 2,750 (4.3 - 19.0)	200	N/A	1.000 (25.40)	45	-40°F - 200°F (-40°C - 93°C)
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Product	Viscosity, cP	Mixed Color	Type	Maximum Gap Fill, in. (mm)	Adhesive Tensile Shear, psi (MPa)	Operating Temperature, °F (°C)	Cure Speed, sec Steel / Plastic / Rubber
GPE 3	3	Clear	Ethyl	0.003 (0.08)	3,200 (22.1)	-65°F - 200°F (-54°C - 90°C)	5 - 10 / 3 - 5 / <2
GPE 15	15	Clear	Ethyl	0.005 (0.13)	3,200 (22.1)	-65°F - 200°F (-54°C - 90°C)	5 - 10 / 4 - 10 / <3
GPE 30	30	Clear	Naomer Ethyl	0.004 (0.10)	3,200 (22.1)	-65°F - 200°F (-54°C - 90°C)	5 - 12 / 5 - 13 / <6
GPE 100	100	Clear	Ethyl	0.004 (0.10)	3,200 (22.1)	-65°F - 200°F (-54°C - 90°C)	10 - 20 / 10 - 20 / <5
TE 1000	1000	Clear	Ethyl	0.006 (0.015)	3,700 (25.5)	-65°F - 280°F (-54°C - 138°C)	25 - 40 / 25 - 50 / 20 - 50
TE 2400	2400	Clear	Ethyl	0.009 (0.23)	3,700 (25.5)	-65°F - 280°F (-54°C - 138°C)	40 - 70 / 25 - 50 / 25 - 50

1. The maximum allowable time to apply adhesive, mate, and position parts after mixing adhesive and activator at room temperature.
2. Time required for adhesive to generate sufficient bond strength to allow the parts to be handled without deformation of the bond line.

Ordering Guide

Product	Available Sizes	Color	Item Number	Items Per Case	Mix Ratio	Shelf life, Months	Dispenser	Nozzle
MA205HV	490 ml Cartridge	BLUE	IT025X	12	10:1	10	30016/30013	30076/30077
MA300	25 ml Twin Cartridge	STRAW	14300	12	1:1	13	N/A	N/A
	50 ml Twin Cartridge	BLACK	IT410	12	1:1	13	14280	14285
	50 ml Twin Cartridge	STRAW	30500	12	1:1	13	14280	14285
	400 ml Twin Cartridge	BLACK	IT412	12	1:1	13	30020/30010	30095/3333
	400 ml Twin Cartridge	STRAW	30000	12	1:1	13	30020/30010	30095/3333
	5 gal Pail Adhesive	STRAW	IT405	1	1:1	13	Consult ITWPP Technical Services	
	5 gal Pail Activator	STRAW	IT406	1	1:1	13		
	50 gal Drum Adhesive	STRAW	IT407	1	1:1	13		
	50 gal Drum Activator	STRAW	IT408	1	1:1	13		
MA310	50 ml Twin Cartridge	STRAW	31500	12	1:1	7	14280	14285
	400 ml Twin Cartridge	STRAW	31000	12	1:1	7	30020/30010	30095/3333
	5 gal Pail Adhesive	STRAW	IT435	1	1:1	7	Consult ITWPP Technical Services	
	5 gal Pail Activator	STRAW	IT406	1	1:1	13		
	50 gal Drum Adhesive	STRAW	IT437	1	1:1	7		
	50 gal Drum Activator	STRAW	IT408	1	1:1	13		
MA320	490 ml Cartridge	BLACK	32000BX	12	10:1	7	30016/30013	30076/30077
	490 ml Cartridge	STRAW	32000X	12	10:1	10	30016/30013	30076/30077
	490 ml Cartridge	WHITE	32000WX	12	10:1	10	30016/30013	30076/30077
	5 gal Pail Adhesive	STRAW	32200	1	10:1	13	Consult ITWPP Technical Services	
	5 gal Pail Activator	STRAW	32420	1	10:1	10		
	5 gal Pail Activator	BLACK	32910	1	10:1	7		
	5 gal Pail Activator	WHITE	35420	1	10:1	10		
	50 gal Drum Adhesive	STRAW	32800	1	10:1	13		
	50 gal Drum Adhesive	STRAW	32800	1	10:1	13		
A0/MA420	490 ml Cartridge	BLACK	35701	12	10:1	7	30016/30013	30076/30077
	490 ml Cartridge	BLUE	IT101BX	12	10:1	10	30016/30013	30076/30077
	490 ml Cartridge	STRAW	IT101X	12	10:1	10	30016/30013	30076/30077
	5 gal Pail Adhesive	STRAW	IT102	12	10:1	13	Consult ITWPP Technical Services	
	5 gal Pail Activator	STRAW	IT112	1	10:1	10		
	5 gal Pail Activator	BLUE	IT114	1	10:1	10		
	5 gal Pail Activator	BLACK	IT140	1	10:1	7		
	50 gal Drum Adhesive	STRAW	IT100	1	10:1	13		
	50 gal Drum Adhesive	STRAW	IT100	1	10:1	13		
MA420FS	490 ml Cartridge	BLUE	IT800X	12	10:1	10	30016/30013	30076/30077
	490 ml Cartridge	BLACK	IT804X	12	10:1	7	30016/30013	30076/30077
	5 gal Pail Activator	STRAW	IT112	1	10:1	10	Consult ITWPP Technical Services	
	5 gal Pail Activator	BLUE	IT114	1	10:1	10		
	5 gal Pail Activator	BLACK	IT140	1	10:1	7		
	50 gal Drum Adhesive	STRAW	IT801	1	10:1	10		
MA422	490 ml Cartridge	BLUE	IT133	12	10:1	10	30016/30013	30076/30077
	5 gal Pail Adhesive	STRAW	IT132	1	10:1	13	Consult ITWPP Technical Services	
	5 gal Pail Activator	BLUE	IT159	1	10:1	10		
MA425	490 ml Cartridge	BLUE	IT151X	12	10:1	10	30016/30013	30076/30077
	5 gal Pail Adhesive	STRAW	IT152	1	10:1	13	Consult ITWPP Technical Services	
	5 gal Pail Activator	BLUE	IT159	1	10:1	10		
	50 gal Drum Adhesive	STRAW	IT150	1	10:1	13		

Product	Available Sizes	Color	Item Number	Items Per Case	Mix Ratio	Shelf life, Months	Dispenser	Nozzle
MA530	400 ml Twin Cartridge	GRAY	53000	12	1:1	6	30020/30010	30095/3333
	400 ml Twin Cartridge	WHITE	53500	12	1:1	4	30020/30010	30095/3333
	5 gal Pail Adhesive	WHITE	IT203	1	1:1	7	Consult ITWPP Technical Services	
	5 gal Pail Activator	BLACK	IT205	1	1:1	7		
	50 gal Drum Adhesive	WHITE	IT200	1	1:1	7		
	50 gal Drum Activator	BLACK	IT206	1	1:1	7		
MA550	490 ml Cartridge	WHITE	35000X	12	10:1	10	30016/30013	30076/30077
	5 gal Pail Adhesive	STRAW	35200	1	10:1	13	Consult ITWPP Technical Services	
	5 gal Pail Activator	WHITE	35420	1	10:1	10		
	50 gal Drum Adhesive	STRAW	35800	1	10:1	13		
MA560-1	400 ml Twin Cartridge	GRAY	56000	12	1:1	6	30020/30010	30095/3333
	400 ml Twin Cartridge	WHITE	56500	12	1:1	4	30020/30010	30095/3333
	5 gal Pail Adhesive	WHITE	IT213	1	1:1	7	Consult ITWPP Technical Services	
	5 gal Pail Activator	BLACK	IT219	1	1:1	7		
	50 gal Drum Adhesive	WHITE	IT210	1	1:1	7		
	50 gal Drum Activator	BLACK	IT211	1	1:1	7		
MA590	400 ml Twin Cartridge	GRAY	59000	12	1:1	7	30020/30010	30095/3333
	5 gal Pail Adhesive	WHITE	IT177	1	1:1	7	Consult ITWPP Technical Services	
	5 gal Pail Activator	BLACK	IT178	1	1:1	7		
	50 gal Drum Adhesive	WHITE	IT170	1	1:1	7		
	50 gal Drum Activator	BLACK	IT175	1	1:1	7		
MA685	35 ml Cartridge	CLEAR	68505	12	10:1	10	14280	14285
MA830	35 ml Cartridge	GRAY GB	35839	25	10:1	10	14280	14285
	490 ml Cartridge	GRAY	IT186X	12	10:1	10	30016/30013	30076/30077
	490 ml Cartridge	GRAY GB	IT187X	12	10:1	10	30016/30013	30076/30077
	5 gal Pail Adhesive	STRAW	IT185	1	10:1	13	Consult ITWPP Technical Services	
	5 gal Pail Activator	GRAY	IT262	1	10:1	10		
	5 gal Pail Activator	GRAY GB	IT284	1	10:1	10		
	50 gal Drum Adhesive	STRAW	IT188	1	10:1	13		
MA832	490 ml Cartridge	GRAY	IT332X	12	10:1	10	30016/30013	30076/30077
	490 ml Cartridge	GRAY GB	IT331X	12	10:1	10	30016/30013	30076/30077
	5 gal Pail Adhesive	STRAW	IT330	1	10:1	10	Consult ITWPP Technical Services	
	5 gal Pail Activator	GRAY	IT262	1	10:1	10		
	5 gal Pail Activator	GRAY GB	IT284	1	10:1	10		
	50 gal Drum Adhesive	STRAW	IT333	1	10:1	10		

Contact Technical Services for equipment recommendations: NA: +1 855 489 7262 | EMEA: +353 61 771 500

Ordering Guide

Product	Available Sizes	Color	Item Number	Items Per Case	Mix Ratio	Shelf life, Months	Dispenser	Nozzle
MA8110	400 ml Twin Cartridge	GRAY	81100	12	1:1	7	30020/30010	30095/3333
	5 gal Pail Adhesive	GRAY	81101	1	1:1	7	Consult ITWPP Technical Services	
	5 gal Pail Activator	GRAY	81103	1	1:1	7		
	50 gal Drum Adhesive	GRAY	81102	1	1:1	7		
	50 gal Drum Activator	GRAY	81104	1	1:1	7		
MA8120	400 ml Twin Cartridge	GRAY	81200	12	1:1	7	30020/30010	30095/3333
	5 gal Pail Adhesive	GRAY	81101	1	1:1	7	Consult ITWPP Technical Services	
	5 gal Pail Activator	GRAY	81203	1	1:1	7		
	50 gal Drum Adhesive	GRAY	81102	1	1:1	7		
	50 gal Drum Activator	GRAY	81104	1	1:1	7		
MA920	490 ml Cartridge	BLUE	35900X	12	10:1	10	30016/30013	30076/30077
	5 gal Pail Activator	STRAW	IT112	1	10:1	10	Consult ITWPP Technical Services	
	5 gal Pail Activator	BLUE	IT114	1	10:1	10		
	5 gal Pail Activator	BLACK	IT140	1	10:1	10		
	50 gal Drum Adhesive	STRAW	35910	1	10:1	13		
MA1020	490 ml Cartridge	BLUE	IT222X	12	10:1	10	30016/30013	30076/30077
	5 gal Pail Adhesive	STRAW	IT220	1	10:1	13	Consult ITWPP Technical Services	
	5 gal Pail Activator	BLUE	IT114	1	10:1	10		
	50 gal Drum Adhesive	STRAW	IT225	1	10:1	13		
MA1025	490 ml Cartridge	BLUE	IT232X	12	10:1	10	30016/30013	30076/30077
	5 gal Pail Adhesive	STRAW	IT236	1	10:1	13	Consult ITWPP Technical Services	
	5 gal Pail Activator	BLUE	IT237	1	10:1	10		
	50 gal Drum Adhesive	STRAW	IT235	1	10:1	13		
MA2015 WHITE	490 ml Cartridge	WHITE	20155	12	10:1	6	30016/30013	30076/30077
	5 gal Pail Activator	BLUE	IT247	1	10:1	10	Consult ITWPP Technical Services	
MA2030	50 gal Drum Adhesive	STRAW	IT030	1	10:1	13		
	MA2045 WHITE	490 ml Cartridge	WHITE	20455	12	10:1	7	30016/30013
MA2045		490 ml Cartridge	BLUE	IT248X	12	10:1	10	30016/30013
	5 gal Pail Activator	BLUE	IT247	1	10:1	10	Consult ITWPP Technical Services	
	50 gal Drum Adhesive	STRAW	IT209	1	10:1	13		
	5 gal Pail Adhesive	STRAW	IT195	1	10:1	13		
MA2090	5 gal Pail Activator	BLUE	IT247	1	10:1	10	Consult ITWPP Technical Services	
	50 gal Drum Adhesive	STRAW	IT221	1	10:1	13		
	490 ml Twin Cartridge	BLUE	22301	12	10:1	7		30016/30013
MA2230	490 ml Twin Cartridge	BLACK	22304	12	10:1	7	30016/30013	30076/30077
	5 gal Pail Activator	BLUE	IT247	1	10:1	10	Consult ITWPP Technical Services	
	5 gal Pail Activator	BLACK	IT496	1	10:1	7		
	50 gal Drum Adhesive	CREAM	22303	1	10:1	12		
	490 ml Twin Cartridge	BLUE	22450	12	10:1	7		30016/30013
MA2245	490 ml Twin Cartridge	BLACK	22451	12	10:1	7	30016/30013	30076/30077
	5 gal Pail Activator	BLUE	IT247	1	10:1	10	Consult ITWPP Technical Services	
	5 gal Pail Activator	BLACK	IT496	1	10:1	7		
	50 gal Drum Adhesive	CREAM	32245	1	10:1	12		
	490 ml Twin Cartridge	BLUE	22901	12	10:1	7		30016/30013
MA2290	50 gal Drum Adhesive	CREAM	22903	1	10:1	12	Consult ITWPP Technical Services	

Product	Available Sizes	Mixed Color	Item Number	Items Per Case	Mix Ratio	Shelf life, Months	Dispenser	Nozzle
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Epoxy

1 Minute® Epoxy Gel	50 ml Cartridge	CLEAR	14277	12	1:1	12	14280 (manual)	14285
	25 ml Dev-Tube™	CLEAR	14250	24	1:1	36	N/A	N/A
5 Minute® Epoxy	50 ml Cartridge	CLEAR	14270	12	1:1	36	14280 (manual)	14285
	2.5 oz	CLEAR	14210	24	1:1	36	N/A	N/A
	400 ml Cartridge	CLEAR	DA051	12	1:1	36	30020 (manual)	3333
	15 oz	CLEAR	14200	6	1:1	36	N/A	N/A
5 Minute® Epoxy Gel	9 lb	CLEAR	14630	1	1:1	36	N/A	N/A
	25 ml Dev-Tube™	OPAQUE	14240	24	1:1	36	N/A	N/A
	50 ml Cartridge	OPAQUE	14265	12	1:1	36	14280 (manual)	14285
10 Minute® Epoxy	400 ml Cartridge	OPAQUE	DA052	12	1:1	36	30020 (manual)	30095
	50 ml Cartridge (Clear)	BLACK	14251	12	1:1	36	14280 (manual)	14285
	50 ml Cartridge (Black)	CLEAR	14255	12		36	14280 (manual)	14285
2-Ton Epoxy	25 ml Dev-Tube™	CLEAR	14310	24	1:1	36	N/A	N/A
	50 ml Cartridge	CLEAR	14260	12	1:1	36	14280 (manual)	14285
	400 ml Cartridge	CLEAR	14355	12	1:1	36	30020 (manual)	3333
	9 lb	CLEAR	14360	1	1:1	36	N/A	N/A
HP 250	50 ml Cartridge	STRAW	14315	12	2:1	36	14280 (manual)	14285
	400 ml Cartridge	STRAW	14415	1	2:1	36	30020 (manual)	30095
Epoxy Plus 25	50 ml Cartridge	GRAY	14278	12	1:1	36	14280 (manual)	14285
	400 ml Cartridge	GRAY	14350	12	1:1	36	30020 (manual)	30095
Food Grade Pot & Seal	400 ml Cartridge	WHITE	DA999	6	4:1	36	15043	15047

MMA

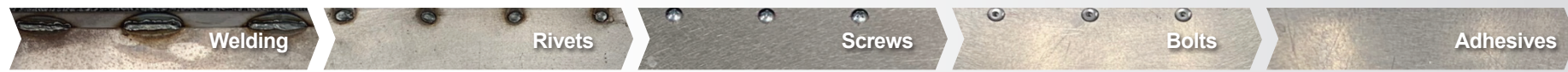
Plastic-Welder White	50 ml Cartridge	WHITE	DA291	12	1:1	10	14280 (manual)	14285
	400 ml Cartridge	WHITE	DA160	12	1:1	10	30020	3333

PU

Dev-Thane-5	50 ml Cartridge	GRAY	14503	12	1:1	12	14280 (manual)	14285
	400 ml Cartridge	GRAY	14500	10	1:1	12	30020	3333



Product	Available Sizes	Item Number	Items Per Case	Shelf Life, Months
GPE 3	14g bottle	70144	12	12
GPE 15	1/3 oz. bottle	70213	12	12
GPE 30	1 oz. bottle	70350	10	12
GPE 100	1 oz. bottle	70450	10	12
TE 1000	1 lb. bottle	72161	1	7
TE 2400	1 oz. bottle	72250	10	7
TE 2400	1 lb. bottle	72261	1	9



Why Choose Plexus Adhesives?

Engineers are always looking for better ways to assemble parts and design joints. When evaluating joining methods, there are several critical factors:

- How much force will the joint see?
- How long is the joint expected to last?
- Will the joint be permanent?
- How long will it take to assemble?
- How much will it cost to assemble?
- What type of labor will it require?

When it comes to permanent joints, engineers have traditionally relied on two choices: mechanical fasteners or welding. But today, there is a third proven choice that offers several advantages over traditional fastening methods: Adhesives.

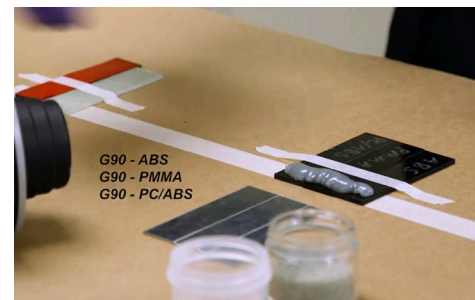
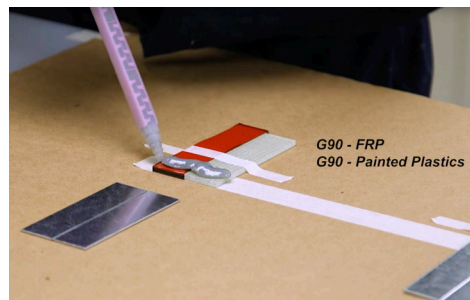
Adhesives Join Materials without Adding Holes or Heat Affected Zones

Like rivets or welding, Plexus adhesives provide a permanent way to bond to materials. In fact, there are many occasions when a Plexus adhesive will prove to be a stronger joint than these methods.

However, strength isn't the only important property. Engineers must still consider numerous factors like: how long the joint is expected to last, how long the joint takes assemble, and how much the joining method costs in terms of both materials and labor.



Corrosion and moisture intrusion in environmentally aged samples



Plexus MA 8100 testing shows bonding of composites, metals and dissimilar substrates

Across many of these factors, Plexus adhesives perform better than mechanical fasteners for several reasons:

Continuous Connections

Adhesives uniformly distribute stress, improving not only the joint strength, but overall durability. Rivets concentrate the stress, weakening the joint and reducing the overall durability.

Fast Assembly

Dispensing an adhesive is fast; often they are significantly faster than traditional joining methods. Rivets typically require pre-drilling and placement of the rivets. Welding, especially aluminum welding, requires thorough surface cleaning before starting work. With Plexus adhesives, there is little to no surface prep needed.

Dissimilar Material Joining

Plexus adhesives can join metal to a wide variety of materials. Unlike welding, Plexus adhesives can join stainless steel to aluminum, or G90 to cold rolled steel without galvanic corrosion. Plexus adhesives are significantly stronger than rivets when joining metal to thermosets, thermoplastics, and fiber reinforced plastics.

Reduce Potential for Leaks

Rivets require holes in both materials and as structures move/flex this can cause stress cracking and widening of those holes. This greatly increase the chance for leaks, even if a secondary sealant is in place. Plexus adhesives join and seal in one step, which simplifies assembly and limits leak potential. In an internal test insulated panels were manufactured; one with rivets and a gasket tape and the other bonded with Plexus. When going through an accelerated aging cycle, the Plexus bonded panel absorbed 5X less moisture.

Reduced Weight

Joints formed with Plexus adhesive are often lighter than joints formed with rivets or welding.

Improved Surface Appearance

With Plexus adhesives there are no visual fasteners or surface distortions. Just a clean, smooth surface.

Strength of Plexus Adhesives Vs. Welding

Plexus adhesives have successfully replaced welding in a variety of structural applications. Continuous weld lines often lead to significant heat distortion and heat affected zones on the sheet metal. These distortions can weaken the overall strength and durability of the joint. As a result, the strength of a weld can vary significantly compared to bonding metal to metal with an adhesive. Welding thin sheet metal to thick gauge can cause serious distortion, whereas with Plexus there is no warping.

Eliminate Welding Distortion



The Right Design is Important When Switching to Plexus Adhesives to Glue Metal to Metal

Butt, Corner and Tee Joints may be suitable for welding, but the design will likely need to be modified to accommodate adhesive bonding. Fortunately, the changes are usually minor, and we have an expert staff of engineers in our Technical Service Department that would be happy to help you select the right design.

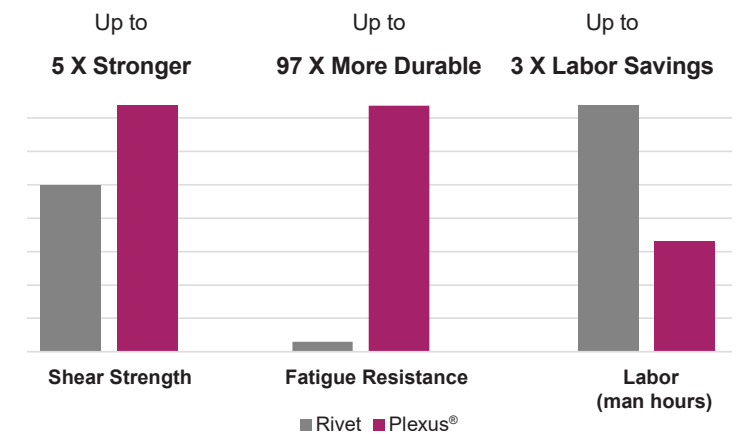
Strength of Plexus Adhesives vs. Rivets

Plexus adhesives have successfully replaced rivets in a variety of structural applications. The strength of a joint with rivets depends on the size of the rivet, the spacing of the rivet, and the gauge of the metal.

The Biggest Challenge Related to Durability with Rivets Is Stress Concentration

Drilling a hole through the material to place the rivet concentrates any loads experienced by the joint on that rivet.

Contrast that with a Plexus metal to metal adhesive. The adhesive provides a continuous connection, so the load can be evenly distributed across the joint. As such, Plexus adhesive achieves a much higher joint strength. One customer replaced rivets for joining their roof and found Plexus adhesives to be stronger, more durable and reduce their labor. Significantly stronger than rivets when joining metal to thermosets, thermoplastics, and fiber reinforced plastics.



Stiffer Structures with Thinner Materials

The continuous bond line and increased surface area of connection means you can use a thinner metal or plastic without losing stiffness.

Corrosion Protection

Plexus adhesives join and form a watertight seal in one step. No leak paths will be able to form. Additionally, the adhesive provides a barrier to electron transfer between the two different materials, preventing galvanic corrosion.

Contact Technical Service Department for help replacing inconsistent welds or weak rivets with Plexus adhesive:
 NA: +1 855 489 7262 | EMEA: +353 61 771 500

Chemistry Guide

Chemistry	MMA	Epoxy	Urethane	Cyanoacrylate
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Temperature Resistance, °F (°C)

Typical Temp Resistance	-40 - 250 (-40 - 121)	-40 - 250 (-40 - 121)	-40 - 180 (-40 - 82)	-40 - 200 (-40 - 93)
Highest Temp Resistance	250 (121)	250 (121)	180 (82)	280 (138)

Chemical Resistance

Polar Solvents	++	++	++	+
NonPolar Solvents	++	+++	++	++

Adhesion

Raw Metals	+++	++	+	++
Coated Metals	+++	++	+++	+++
Thermoplastics	+++	+	++	+++
Composites	+++	++	++	
Wood	++	++	+++	+++
Urethane Foam	+	+	+++	+
Lapshear Strength	++	+++	+	++
Peel Strength	++	+	+++	+
Elongation	++	+	+++/**	+
Hardness	Semi-Rigid	Rigid	Semi-Rigid	Rigid

Gap Fill, inches (mm)

Ideal	0.01 - 0.04 (0.25 - 1)	≤0.01 (<0.25mm)	0.005 - 0.03 (0.12 - 0.75)	0.001 - 0.009 (0.03 - 0.23)
Max Gap	0.250 (6.35)	0.250 (6.35)	0.250 (6.35)	0.250 (6.35)

Processing

Room Temp Cure	++	+	+	+++
Heat Accelerated Cure		++	+++	N/A
Surface Prep Metals	++	++	+	++
Surface Prep Plastics	++	+	++	+++
Surface Prep Composites	+++/**	++	++	N/A
Exo-Therm Temp	High	Low-Med	Low	Med-High
Odor	High	Med-Low	Low	Med

+++ = Preferred | ++ = Good | + = Not Recommended

The technical information, recommendations, and other statements contained in this brochure are based upon tests or experience that ITW Performance Polymers believes are reliable, but the accuracy or completeness of such information is not guaranteed. The information provided is not intended to substitute for the customers own testing.

Equipment Information

Dispensers	Adhesive Sizes	Adhesive Ratios	Manual or Pneumatic	Item Number
50 MI Mark V™ Application Gun	50/35ml cartridges	1:1, 2:1, 10:1	Manual	14280
400ml Manual Dispenser	400ml	1:1, 2:1	Manual	30020
400ml Pneumatic Dispenser	400ml	1:1, 2:1	Pneumatic	30010
490ml Manual Dispenser	490ml	10:1	Manual	30016
490ml Pneumatic Dispenser	490ml	10:1	Pneumatic	30013

Mix Tips	Adhesive Sizes	Adhesive Ratios	Amount Per Pack	Item Number
Mark V™ Mix Nozzle	50/35ml cartridges	1:1, 2:1, 10:1	12	14285
Pink Square Mix Nozzle	400ml	1:1, 2:1	12	3333
White Spherical Mix Tip for 500 Series	400ml	1:1, 2:1	200	30095
Orange 490ml Mix Nozzle	490ml	10:1	12	30076
Orange 490ml Mix Nozzle	490ml	10:1	600	30076



Contact Technical Services for equipment recommendations: NA: +1 855 489 7262 | EMEA: +353 61 771 500

References

Devcon® Mil-Spec, UL and Other Government Specifications

Product Category	Specifications	Product	Part #	Size
Devcon® Silicone Adhesive Sealants	A-46106A	Siliite® Silicone RTV-Clear	17100	3 oz Cartridge
			17150	10.3 oz Cartridge
		Siliite® Silicone RTV-White	17140	10.3 oz Cartridge
			Siliite® Silicone RTV (High Temp.)	17130
Devcon® Metal Repair Compounds	MIL-PRF-24176C, Type I	Plastic Steel® Putty (A)	10110	1 lb
			10120	4 lb
			10130	25 lb
		Titanium Putty	10760	1 lb
			10770	2 lb
			11700	3 lb
	MIL-PRF-24176C, Type II	Aluminum Putty (F)	10610	1 lb
			10620	3 lb
			10210	1 lb
		Plastic Steel® Liquid (B)	10220	4 lb
			10230	25 lb
			10710	1 lb
MMM-A-1754	Aluminum Liquid (F-2)	10720	3 lb	

Devcon® ABS Type Approved Products

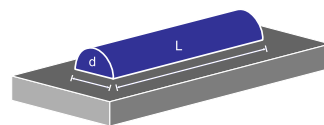
Product Category	ABS	Product	Part #	Size
Devcon® Urethane Repair Compounds	ABS	Flexane Brushable	15350	1 lb
Devcon® Metal Repair Putties	ABS	Plastic Steel® Putty (A)	10110	1 lb
			10120	4 lb
			10130	25 lb
		Plastic Steel® 5 Minute® Putty (SF)	10240	1 lb
			10610	1 lb
		Aluminum Putty (F)	10620	3 lb
		Titanium Putty	10760	1 lb
		10770	2 lb	
Stainless Steel Putty (ST)	10270	1 lb		
Bronze Putty (BR)	10260	1 lb		
Ceramic Repair Putty	11700	3 lb		
Devcon® Metal Repair Liquids/Wearing Compounds	ABS	Plastic Steel® Liquid (B)	10210	1 lb
			10220	4 lb
			10230	25 lb
		Aluminum Liquid (F2)	10710	1 lb
			10720	3 lb
		Brushable Ceramic Red	11760	2 lb
		11762	12 lb	
		Brushable Ceramic Blue	11765	2 lb
11767	12 lb			
Brushable Ceramic White	11770	2 lb		

Devcon® Registered Products

Product Category	NSF Approval	Product	Part #	Size
Devcon® Silicone Adhesive Sealants	NSF/ANSI 51	Siliite® Silicone RTV-Clear	17100	3 oz Tube
			17150	10.3 oz Tube
		Siliite® Silicone RTV-White	17140	10.3 oz Tube
			Siliite® Silicone RTV (High Temp.)	17130
Devcon® Metal Repair Compounds	NSF/ANSI 61	Stainless Steel Putty	10270	1 lb
		Brushable Ceramic (White)	11770	2 lb
Devcon® Flooring Repair	R2	Floor Patch™	13100	10 lb.
			13120	40 lb
		Floor Patch™ FC	13110	10 lb
		Epoxy Coat™ 7000 Non VOC	12710	2 gal

Bead Length² (inches)

Bead Diameter	50 ml	300 ml	490 ml	400 ml	1 lb	1 gal ³
1/4"	10.3"	61.7"	82.7"	78.8"	89.4"	787.5"
3/8"	4.7"	27.9"	37.3"	35.0"	39.8"	350.0"
1/2"	2.5"	15.0"	20.0"	19.2"	22.1"	196.7"
5/8"	1.7"	10.0"	13.3"	12.6"	14.3"	125.8"



d = Bead Diameter L = Bead Length

Permatex® Mil-Spec, UL & Other Government Specifications

Product Category	Specification	Product	Part #	Size	
Permatex® ZIP GRIP® Instant Adhesives	A-A-3097, Type II, Class 1	GPE 3 Wicking	70144	14 g bottle	
			70145	2 g tube	
		GPE 15 Rubber Bonder	70213	1/3 oz bottle	
			GPE 30 All Purpose	70350	1 oz bottle
			GPE 100 All Purpose-Medium Viscosity	70450	1 oz bottle
	A-A-3097, Type II, Class 2	TE 1000 Gap Filling	72161	1 lb bottle	
			72250	1 oz bottle	
	A-A-3097, Type II, Class 3	TE 2400 Gap Filling-Hi Temp	72261	1 lb bottle	

Permatex® NSF Registered Products

Product Category	NSF Approval	Product	Part #	Size
Permatex® Liquid Threadlockers	P1	Medium Strength Threadlocker BLUE	24210	10 ml Bottle
			24250	50 ml Bottle
			24225	250 ml Bottle
		Permanent Strength Threadlocker RED	26210	10 ml Bottle
			26250	50 ml Bottle
			26225	250 ml Bottle
Permatex® Gel Threadlockers	P1	Penetrating Grade Threadlocker GREEN	29050	50 ml Bottle
		Medium Strength Threadlocker BLUE	24010	10 g Gel Twist™ Carded
		High Strength Threadlocker RED	27010	10 g Gel Twist™ Carded
Permatex® Thread Sealants	P1	High Performance Thread Sealant	56521	50 ml tube, Carded
			56525	250 ml Tube
Permatex® Retaining Compounds	P1	Bearing Mount for Relaxed Fits	68050	50 ml Bottle
Permatex® Gasket Makers	P1	ULTRA BLUE® RTV Silicone Gasket Maker	81724	3.35 oz tube, Carded
			85519	9.5 oz PowerBead™ Can
			81725	13 oz Cartridge
		The Right Stuff® Gasket Maker	25224	7 oz Automatic Tube
			29208	5 oz Cartridge
			85224	9.5 oz PowerBead™ Can
			33694	10.1 fl oz Cartridge
		Anaerobic Gasket Maker	51813	50 ml tube, Carded
			51845	300 ml Cartridge

SDS/TDS: Access SDSs and TDSs from our website: www.itwperformancepolymers.com. Select the product brand to search.

Exclusions of warranties:

As to the herein described materials, there are no warranties which extend beyond the description on the face hereof. ITW Performance Polymers makes no other warranties, express or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. Since the use of the herein described materials involves many variables in methods of application, handling and/or use, the user in accepting and using these materials assumes all responsibility for the end result. ITW PANA shall not otherwise be liable for loss of damages, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including negligence, warranty or strict liability.

Visit www.itwperformancepolymers.com for our terms of sale, detailed warranties and exclusions, questions on agency approvals, certifications and SDS/TDS

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