

## Permabond is a global manufacturer of adhesives and sealants



“Our Science Your Success”

ANAEROBIC

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CYANOACRYLATE

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UV-LIGHT CURABLE

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# ANAEROBIC

Product	Description	Application	Color	Viscosity @ 25°C cP	
LM113	Removable, low strength, for small diameter fasteners	Threadlocker	Purple	1,200	
MM115	Removable, general purpose	Threadlocker	Blue	1,300	
MM115 Pure	Removable, general purpose NSF/ANSI 61 Certified	Threadlocker	Colorless	1,300	
HM118	Removable, high strength	Threadlocker	Red	1,800	
HH120	Permanent, maximum strength, for large diameter bolts	Threadlocker	Red	7,000	
HL126	Wicking grade for post assembly	Threadlocker	Green	12	
HM128	Permanent, general purpose	Threadlocker	Red	500	
HM129	Permanent, high strength, for up to 1" diameter fasteners	Threadlocker	Red	500	
HH131	Permanent, high temp. resistant, high strength, up to 1½" diameter fasteners	Threadlocker	Red	10,000	
LM012	No fillers, hydraulic sealing	Threadsealer	Brown	2,000	
LH050	General purpose pipe sealant	Threadsealer	White	250,000	
LH050 Pure	General purpose, NSF/ANSI 61 Certified	Threadsealer	White	250,000	
LH051	Automatic dispensing	Threadsealer	White	250,000	
MH052	Medium strength for coarse threads	Threadsealer	Yellow	50,000	
LH054	Easy to remove, low strength	Threadsealer	White	260,000	
LH150	Stainless steel pipe sealant	Threadsealer	White	260,000	
HH190	General purpose flange sealant	Gasketmaker	Purple	600,000	
MH196	Fast curing, high temperature resistant	Gasketmaker	Red	150,000	
LH197	Flexible, easy to remove	Gasketmaker	Green	37,000	
MH199	Highly thixotropic, high temperature resistant	Gasketmaker	Red	185,000	
HH040	General purpose, maximum gap fill	Retaining Compound	Green	5,000	
HH040 Pure	General purpose, NSF/ANSI 61 Certified	Retaining Compound	Colorless	5,000	
HL138	General purpose, press fit	Retaining Compound	Green	150	
HM160	General purpose, slip fit	Retaining Compound	Green	600	
HM161	Gap fill, slip fit	Retaining Compound	Green	2,000	
HM162	Fast curing, high temperature resistant	Retaining Compound	Green	800	
HM165	Maximum gap fill, high temperature resistant	Retaining Compound	Green	10,000	
HH167	Maximum gap fill, metal repair	Retaining Compound	Silver	500,000	
ASC10	Activator for all anaerobic grades	Activator	Green	2	

	Max. Gap Fill		Shear Strength Steel @ 25°C		Torque, M10 Steel nuts & bolts				Fixture Time, Steel @ 25°C mins	Temperature Range		Approvals <sup>1,2</sup> * MIL-S-46163A ** MIL-S-22473E *** MIL-R-46082B
	in	mm	psi	N/mm <sup>2</sup>	Breakaway		Prevail			Min. °F(°C)	Max. °F(°C)	
					in·lb	N·m	in·lb	N·m				
	0.006	0.152	750	5	80	9	40	5	15	-65 (-54)	300 (150)	Type II Grade M*
	0.006	0.152	1,500	10	140	16	60	7	10	-65 (-54)	300 (150)	CVV ** Type II Grade N*
	0.006	0.152	1,500	10	140	16	60	7	10	-65 (-54)	300 (150)	NSF / ANSI 61
	0.008	0.203	2,500	17	200	23	280	32	10	-65 (-54)	300 (150)	Type II Grade O*
	0.010	0.254	2,500	17	275	31	300	34	10	-65 (-54)	300 (150)	AVV** Type I Grade L*
	0.005	0.127	1,500	10	125	14	300	34	8	-65 (-54)	300 (150)	AA** Type III Grade R*
	0.006	0.152	2,500	17	275	31	350	40	5	-65 (-54)	300 (150)	Type I Grade K*
	0.006	0.152	2,500	17	280	32	500	56	10	-65 (-54)	300 (150)	
	0.012	0.305	2,500	17	240	27	480	54	15	-65 (-54)	445 (230)	
	0.008	0.203	750	5	25	3	15	2	30	-65 (-54)	350 (177)	HVV**
	0.020	0.508	1,000	7	35	4	25	3	120	-65 (-54)	350 (177)	UL Listed
	0.020	0.508	1,000	7	35	4	25	3	120	-65 (-54)	350 (177)	NSF / ANSI 61
	0.020	0.508	1,000	7	35	4	25	3	120	-65 (-54)	350 (177)	
	0.020	0.508	1,400	10	180	20	100	11	15	-65 (-54)	300 (150)	BAM
	0.020	0.508	1,000	7	25	3	20	2	120	-65 (-54)	350 (177)	
	0.020	0.508	1,000	7	35	4	25	3	120	-65 (-54)	350 (177)	UL Listed
	0.025	0.635	900	6	N/A		N/A		15	-65 (-54)	250 (121)	
	0.020	0.508	1,500	10	N/A		N/A		15	-65 (-54)	390 (200)	
	0.012	0.305	750	5	N/A		N/A		20	-65 (-54)	300 (150)	
	0.020	0.508	1,100	8	N/A		N/A		20	-65 (-54)	390 (200)	
	0.010	0.254	2,000	14	200	23	300	34	15	-65 (-54)	300 (150)	
	0.010	0.254	2,000	14	200	23	300	34	15	-65 (-54)	300 (150)	NSF / ANSI 61
	0.005	0.127	2,300	16	180	20	320	36	10	-65 (-54)	300 (150)	Type I***
	0.008	0.203	3,000	21	250	28	400	45	10	-65 (-54)	350 (177)	Type II***
	0.010	0.254	3,500	24	275	31	400	45	10	-65 (-54)	350 (177)	Type III***
	0.008	0.203	4,300	30	280	32	550	62	5	-65 (-54)	390 (200)	
	0.012	0.305	3,800	26	250	28	480	54	15	-65 (-54)	445 (230)	
	0.012	0.305	4,700	32	280	32	400	45	15	-65 (-54)	300 (150)	
	N/A		N/A		N/A				N/A	N/A		Primer Grade N & T** Primer Grade F*

Anaerobic Adhesives and Sealants are single component products that cure in the presence of metal and absence of oxygen to bond and/or seal components. Products are available in varying strengths and viscosities. The full line includes products appropriate for potable water contact, gas contact and hydraulic systems.

Permabond anaerobic adhesives and sealants provide inherent corrosion resistance and excellent chemical resistance, including solvents, hydrocarbons, steam, and glycol-based products. For more information please contact our technical staff.

The products are categorized by application. Permabond Threadlockers are available for all threaded metal fasteners. Permabond Pipe Sealants perform similar to threadlockers but are designed to seal the larger threads and diameters of pipes. Permabond Retaining Compounds are available for cylindrical non-threaded assemblies and Permabond Gasketmakers replace or augment pre-cut gaskets.



**Threadlockers**

Prevent loosening due to vibration or thermal expansion. For use on all metal threaded fasteners, threadlockers replace lockwashers and locknuts in low, medium & high strength applications.

Reduce inventory of small parts, lower production costs and gain corrosion resistance.

**Threadsealers**

Fire protection, meter installation and pumps are just a few of the applications that benefit from instant seal at 1000psi and when fully cured, exceed the burst rating of the pipe.

For Potable Water, ask for LH050Pure - NSF/ANSI 61 Certified.

Coarse threaded applications use MH052, for higher torque values. Oxygen contact requiring BAM certification (to 145psi) - use MH052.



**Gasketmakers**

Silicone free, high viscosity and easy to dispense, these sealants improve load transfer and stress distribution across mated faces. Eliminate stock of pre-cut gaskets in various sizes.

Take advantage of rapid cure speeds and seal integrity to improve production rates and gain the added benefit of corrosion resistance at no additional cost.

**Retaining Compounds**

Don't settle for less than 100% surface to surface contact in retaining applications!

Increase the load carrying capacity of up to five times that of mechanical joining techniques.

Extend component life with high viscosity repair grades; decrease re-machining costs with wicking grades for assemblies with close tolerances.





Cyanoacrylate adhesives are single component adhesives that cure by reacting to small traces of moisture on the surface of the substrates being bonded. Permabond has a complete line of cyanoacrylates which vary in adhesion to different substrates, viscosity, color, temperature resistance, gap filling capability, cure speed and compatibility. Permabond's high performance cyanoacrylates include rapid cure, high temperature resistance, surface insensitive (for acidic surfaces), non-blooming and impact resistance.

## High Temperature Resistant



The 800 series offers the highest temperature resistance available without using a secondary heat cure process. For select applications, Permabond 920 is formulated to offer increased temperature resistance with the use of a secondary heat cure process.

PRODUCT	TEMP RESIST
820	200°C
920	250°C*
typical ethyl	82°C
typical methyl	90°C

\* with secondary heat cure

Cyanoacrylate Adhesives resist various chemicals and a broad range of temperatures.

## Surface Insensitive

Permabond overcomes the challenges posed when bonding acidic surfaces such as wood, leather, paper or cork with their selection of surface insensitive products. These cyanoacrylates also perform well on very dry or porous materials, thereby extending the range of application possibilities. The full range includes wicking grades for post assembly application, gap filling to 0.508 mm and a true non-sag, no-drip gel for vertical applications.



## Non-blooming, Low Odor

Odors and residue (blooming or frosting) are caused by molecules released in the air during the cure process of traditional cyanoacrylates. Permabond's proprietary formulations contain low vapor pressure monomers which result in a less volatile product. Simply put, the product remains quite stable with little odor during application and virtually no residue when cured.

Cyanoacrylate Adhesives fixture in seconds!

## Metal Bonding

The original instant adhesive, 910, continues to be the only pure methyl cyanoacrylate. It is relied on to create the strongest bonds between metal substrates.

## Impact Resistance



Cyanoacrylates form bonds with strong shear and tensile properties. For increased impact resistance, Permabond offers its impact resistant 730 series in either clear or black. Consider this series when the assembly is subject to vibration, impact, peel or flexing stresses.

Cyanoacrylate Adhesives are very effective at bonding many substrates, including metals, plastics, ceramics, elastomers and wood.

Cyanoacrylate Adhesives are single component, 100% solids and solvent free.

## Wicking Grades and Gap Filling Formulas

Permabond has a broad range of viscosities to suit the flowability requirements of all applications. For post assembly applications, wicking grades are suited to the tight tolerances between parts. Uneven surfaces benefit from a true gel - no drip, no sag, perfect for vertical applications.

# CYANOACRYLATE

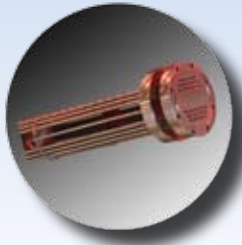
Grade	Chemistry	Description	Appearance
101	Ethyl	General purpose, wicking type, plastic bonding	Clear
102	Ethyl	General purpose, plastic bonding	Clear
105	Ethyl	General purpose, elastomer bonding	Clear
108	Ethyl	Intermediate gap fill, plastic bonding	Clear
268	Ethyl	Fast curing, maximum gap fill	Clear
731	Ethyl	Toughened with high peel, impact & shear strength	Clear
735	Ethyl	Toughened with high peel, impact & shear strength	Black
737	Ethyl	Impact resistant, gap fill	Black
790	Ethyl	Surface insensitive, extremely fast curing, wicking type	Clear
791	Ethyl	Surface insensitive, extremely fast curing, close fitting parts	Clear
792	Ethyl	Surface insensitive, extremely fast curing, close fitting parts	Clear
795	Ethyl	Surface Insensitive, extremely fast curing, general purpose	Clear
799	Ethyl	Surface insensitive, extremely fast curing, maximum gap fill	Clear
801	Ethyl	High temperature resistant to 130°C, wicking type	Clear
802	Ethyl	High temperature resistant to 160°C	Clear
820	Ethyl	High temperature resistant to 200°C	Clear
2010	Ethyl	Very high viscosity, thixotropic	Clear
2011	Ethyl	Thixotropic gel, non-sag, surface insensitive	Clear
170	Methyl	Metal bonding, maximum gap fill	Clear
910	Methyl	General purpose, metal bonding	Clear
910FS	Methyl	Metal bonding, wicking type	Clear
919	Allyl	Wicking type, high temperature resistant to 250°C	Clear
920	Allyl	General purpose, high temperature resistant to 250°C	Clear
922	Allyl	Maximum gap fill, high temperature resistant to 250°C	Clear
930	Methoxypropyl	Low odor, non-fogging or frosting	Clear
931	Methoxypropyl	Low odor, non-fogging or frosting	Clear
932	Methoxypropyl	Low odor, non-fogging or frosting	Clear
940	Alkoxyethyl	Low odor and low bloom, wicking type	Clear
941	Alkoxyethyl	Low odor and low bloom, close fitting parts	Clear
943	Alkoxyethyl	Low odor and non-blooming, general purpose	Clear
947	Alkoxyethyl	Low odor and low bloom, gap fill	Clear
POP	Solvent	Polyolefin primer	Clear
QFS16	Solvent	Cyanoacrylate accelerator	Clear
CSA-NF	Solvent	Non-flammable cyanoacrylate accelerator	Clear

	Viscosity @ 25°C cP	Max. Gap Fill		Shear Strength* @ 25°C		Set Time, Steel @ 25°C sec	Temperature Range		Approvals
		in.	mm	psi	N/mm <sup>2</sup>		Min. °F(°C)	Max. °F(°C)	A-46050C
	2	0.002	0.051	3,000	21	5	-65 (-54)	180 (82)	Type II, Class 1
	80	0.006	0.152	3,100	21	10	-65 (-54)	180 (82)	Type II, Class 2
	40	0.004	0.102	2,900	20	10	-65 (-54)	180 (82)	Type II, Class 1
	500	0.008	0.203	3,000	21	10	-65 (-54)	180 (82)	N/A
	1,800	0.017	0.432	3,000	21	10	-65 (-54)	180 (82)	Type II, Class 3
	150	0.006	0.152	4,000	27	30	-65 (-54)	250 (120)	N/A
	250	0.006	0.152	4,000	27	30	-65 (-54)	250 (120)	N/A
	3,000	0.020	0.508	3,100	21	15	-65 (-54)	250 (120)	N/A
	2	0.002	0.051	2,900	20	3	-65 (-54)	180 (82)	Type II, Class 1
	40	0.004	0.102	2,900	20	3	-65 (-54)	180 (82)	Type II, Class 1
	80	0.006	0.152	2,900	20	3	-65 (-54)	180 (82)	Type II, Class 2 <sup>1</sup>
	500	0.007	0.178	2,900	20	4	-65 (-54)	180 (82)	Type II, Class 3
	5,000	0.020	0.508	3,000	21	8	-65 (-54)	180 (82)	Type II, Class 4
	35	0.003	0.076	3,000	21	10	-65 (-54)	270 (130)	N/A
	100	0.006	0.152	3,000	21	10	-65 (-54)	320 (160)	N/A
	100	0.006	0.152	3,000	21	10	-65 (-54)	390 (200)	N/A
	23,000	0.020	0.508	3,100	21	15	-65 (-54)	180 (82)	N/A
	Gel	0.020	0.508	3,200	22	10	-65 (-54)	180 (82)	N/A
	1,500	0.015	0.381	3,500	24	15	-65 (-54)	195 (90)	Type I, Class 3
	80	0.006	0.152	3,700	26	10	-65 (-54)	195 (90)	Type I, Class 2 <sup>1</sup>
	3	0.002	0.051	3,700	26	5	-65 (-54)	195 (90)	Type I, Class 1 <sup>1</sup>
	4	0.002	0.051	3,000	21	10	-65 (-54)	482 (250)**	Type V, Class 1
	80	0.006	0.152	3,000	21	10	-65 (-54)	482 (250)**	Type V, Class 2 <sup>1</sup>
	1,600	0.017	0.432	3,000	21	10	-65 (-54)	482 (250)**	Type V, Class 3 <sup>1</sup>
	3	0.002	0.051	2,700	19	8	-65 (-54)	167 (75)	N/A
	40	0.004	0.102	2,700	19	8	-65 (-54)	167 (75)	N/A
	100	0.006	0.152	2,700	19	8	-65 (-54)	167 (75)	N/A
	7	0.002	0.051	2,600	18	10	-65 (-54)	180 (82)	N/A
	30	0.003	0.076	2,600	18	10	-65 (-54)	180 (82)	N/A
	100	0.006	0.152	2,600	18	10	-65 (-54)	180 (82)	N/A
	1,200	0.010	0.254	2,600	18	25	-65 (-54)	180 (82)	N/A
	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\* Grit blasted steel

\*\* Secondary curing mechanism required

<sup>1</sup> Approvals meets MIL-A-46050C and Commercial item Std. A-A-3097



### High Strength Heat Cure - Single Part Epoxy

Single-part epoxies are ideal for use in heavy wear-and-tear applications such as bonding tungsten carbide tools & machinery. They are ideal for replacing welding and brazing and can significantly reduce assembly production costs. It is for this reason their use is widespread sealing heat exchange tubes and end plates in heat exchanger manufacturing. Their excellent impact and high temperature resistance\* also make them popular for bonding electric motor magnets.

#### ES Series: 1 - Part (One Component)

Product	Application	Viscosity @ 25°C, cP	Color	Maximum Gap Fill in. (mm)	Shear Strength Steel to Steel** @ 25°C psi (N/mm²)	Peel Strength Steel to Steel PIW (N/25mm²)	Cure Time @ 120°C mins
ES550	High Strength; No Sag	1,500,000	Grey	0.12 (3.00)	4,000 - 6,000 (27 - 41)	20 - 30 (89 - 135)	40
ES558	High Strength; Free Flowing	200,000	Grey	0.02 (0.50)	4,000 - 6,000 (27 - 41)	20 - 30 (89 - 135)	60
ES562	High Strength; Free Flowing	20,000	White	0.01 (0.25)	3,000 - 5,000 (20 - 35)	8 - 14 (35 - 62)	45
ES569	High Strength; No Sag	375,000	Black	0.20 (5.00)	4,000 - 6,000 (27 - 41)	10 - 20 (45 - 89)	60
ES578	Excellent Thermal Conductivity	700,000	Black	0.20 (5.00)	4,000 - 6,000 (27 - 41)	10 - 20 (45 - 89)	40

\*Service Temperature Range for ES Series = -40°F to 355°F (-40°C to 180°C)

\*\*Grit blasted steel



### Strength and Fast Curing - Two Part Epoxy

These 1:1 mix epoxies can be easily dispensed with a static mixing nozzle. No measuring or hand mixing is needed. Heat cure is not needed as the adhesives will cure at room temperature. For cure times faster than those stated on the chart, heat can be used to increase the speed of cure.

#### ET Series: 2 - Part (Two Component)

Product	Application	Viscosity cP, Mixed	Color	Maximum Gap Fill in. (mm)	Shear Strength* @ 25°C psi (N/mm²)	Peel Strength PIW (N/25mm²)	Working Strength mins	Full Cure hours
ET500	Very Fast Curing, Clear, Non-yellowing	12,000	Clear	0.08 (2.00)	1,750 - 2,000 (12-14)	10 (45)	4 - 6	24
ET505	Tough, Structural, Multipurpose Adhesive for Bonding A Wide Variety Of Materials	20,000	Amber	0.08 (2.00)	2,600 - 3,000 (18 - 21)	13 (60)	180	72
ET510	Rapid Curing And Flexible for Excellent Impact and Peel Resistance	25,000	Amber	0.08 (2.00)	1,200 - 1,750 (8 - 12)	17 (80)	15 - 25	72
ET515	Clear And Flexible, With Excellent Peel and Impact Resistance	20,000	Slightly Amber	0.08 (2.00)	1,200 - 1,750 (8 - 12)	13 (60)	15 - 25	72
ET536	Toughened, Thixotropic, High Strength	200,000	Gray	0.20 (5.00)	2,100 - 3,500 (15 - 24)	17 (80)	60 - 90	72
ET540	Toughened, Thixotropic Paste, High Strength, High Temperature Resistant**	300,000	Amber	0.20 (5.00)	2,000 - 2,600 (14 - 18)	17 (80)	60 - 180	70

\*Grit Blasted Steel

Service temperature range for ET500, ET505, ET510, ET515, ET536 = -40°F to 175°F (-40°C to 80°C)

\*\*Service temperature range for ET540 = -40°F to 240°F (-40°C to 120°C)



## Strength and Flexibility - Toughened Acrylic



PermaBond has three types of toughened acrylics to meet your needs: Bead on Bead, No Mix Adhesive and Initiator, and Single Component.

PermaBond structural acrylics offer fast fixture and cure at room temperature providing a solution to the continuous demands for increased line speeds. Room temperature cure also decreases the manufacturing costs that are associated with heat curing.

PermaBond structural acrylics are suitable for bonding a wide variety of substrates, greatly expanding the range of design possibilities. Materials such as metals, glass, magnets and composites are easily bonded with PermaBond structural acrylics.

### TA Series - High Strength Toughened Acrylic Adhesives

Product	Application	Color	Visc. cP	Max Gap Fill in (mm)	Fixture Time sec	Shear Strength* psi (N/mm <sup>2</sup> )	Peel Strength PIW (N/25mm <sup>2</sup> )	Temperature Range, C° (F°)
<b>TA430 &amp; Initiator 41</b>	For the Bonding of Metals, Plastics, Ceramics and Wood. Fast Cure on Close Fitting Parts	Amber	30,000	0.020 (0.508)	50-90	2,200 - 3,600 (15-25)	10 -14 (45 - 65)	-54 to 120 (-65 to 250)
<b>TA435 &amp; Initiator 41</b>	For the Bonding Of Metals, Ferrites and Thermoplastics. High Impact Applications	Amber	90,000	0.020 (0.508)	50-90	2,200 - 3,600 (15-25)	18 - 22 (85 - 100)	-54 to 120 (-65 to 250)
<b>TA436 &amp; Initiator 43</b>	For the Bonding of Metals and Ferrites. High Impact and High Temperature Application	Amber	17,000	0.020 (0.508)	60-180	2,200 - 3,600 (15-25)	10 - 14 (45 - 65)	-54 to 150 (-65 to 300)
<b>TA437** &amp; Initiator 41</b>	For the Bonding of Ferrites and Metals for High Temperature Application	Amber	120,000	0.020 (0.508)	180-300; 30-45 w/ accel.	2,000 - 3,000 (14-20)	18 - 22 (85 - 100)	-54 to 200 (-65 to 390)
<b>TA440 A+B</b>	Bead On Bead for Rapid Bonding of Metal, Glass, Wood and Rigid Plastics	Part A: Amber Part B: Green	10,000	0.020 (0.508)	< 30	2,200 - 3,600 (15-25)	10 -14 (45 - 65)	-54 to 120 (-65 to 250)
<b>Initiator 41</b>	Cure Initiator for TA430, TA435; Cure Accelerator for TA437	Brown	2	N/A	N/A	N/A	N/A	N/A
<b>Initiator 43</b>	Cure Initiator for TA436	Green	2	N/A	N/A	N/A	N/A	N/A

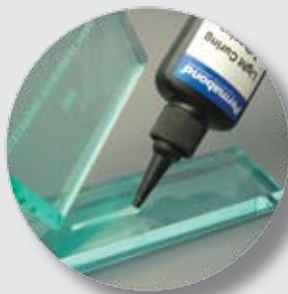
\*Grit blasted steel

\*\*TA437's unique properties enable it to cure at ambient temperature without an initiator. Using the initiator will speed up the cure.

Full cure is achieved in 24 Hours

Cure-speed is dependent on gap, substrates being bonded and temperature.

## Strength and Crystal Clear Bonds with UV Light Curable



Flexible and non-yellowing, PermaBond UV Light Curable Adhesives are single part, solvent-free adhesives that cure on demand and are suitable for a wide range of applications. Upon exposure to UV light of the proper intensity and spectral output, these products rapidly cure to form excellent bonds to a wide variety of substrates such as metals, glass and most plastics.

Product	Application	Cure Type	Color (cured)	Visc. cP	Tensile Strength psi (N/mm <sup>2</sup> )	Shear Strength psi (N/mm <sup>2</sup> )	Shore D Hardness	Elongation	Temp. Range C° (F°)
UV610	High Strength; Glass To Metal	UV	Cloudy	900	2,500 (17)	1,900 - 2,300 <sup>1</sup> (13 - 16 <sup>1</sup> )	70	95%	-54 to 120 (-65 to 250)
UV620	General Purpose; Optically Clear; Glass Bonder	UV	Optically Clear, Colorless	2,500	2,300 (16)	1,300 - 1,500 <sup>1</sup> (9 - 10 <sup>1</sup> )	62	75%	-54 to 120 (-65 to 250)
UV625	Large Gaps; Vertical Application; Glass Bonder	UV	Clear, Colorless	Gel	2,400 (16.5)	1,400 - 1,600 <sup>1</sup> (10 - 11 <sup>1</sup> )	65	40%	-54 to 120 (-65 to 250)
UV670	Metal To Glass; Flexible	UV	Colorless	2,500	1,700 (12)	1,100 - 1,300 <sup>1</sup> (8 - 9 <sup>1</sup> )	58	85%	-54 to 120 (-65 to 250)
UV7141	UV & Anaerobic Curing for Ceramic Coated Glass; Glass to Metal	UV- Anaerobic	Colorless	1,500	3,000 (20)	2,000 - 2,500 <sup>1</sup> (14 - 17 <sup>1</sup> )	N/A	N/A	-54 to 150 (-65 to 300)
UV630	Low Viscosity; High Strength; Plastic Bonder	UV-Visible	Colorless	250	2,000 (14)	>1,300** <sup>2</sup> (>9** <sup>2</sup> )	60	110%	-54 to 120 (-65 to 250)
UV640	Medium Viscosity; Plastic bonding	UV-Visible	Colorless	3,500	1,900 (13)	>1,300** <sup>2</sup> (>9** <sup>2</sup> )	60	110%	-54 to 120 (-65 to 250)
UV645	High Viscosity; Plastic Bonding	UV-Visible	Colorless	10,000	2,000 (14)	>1,300** <sup>2</sup> (>9** <sup>2</sup> )	65	110%	-54 to 120 (-65 to 250)
UV649	Thixotropic Gel; Plastic Bonding	UV-Visible	Colorless	Gel	2,200 (15)	>1,300** <sup>2</sup> (>9** <sup>2</sup> )	65	110%	-54 to 120 (-65 to 250)

<sup>1</sup> Steel to glass

<sup>2</sup> Polycarbonate to polycarbonate

\* Cure speed depends wavelength and intensity of the light source, distance from the light to the bond site, UV transmission of the components and thickness of the adhesive.

\*\* Substrate failure observed: The polycarbonate failed at 1300 psi; the bond was still intact.



Standard UV light cure adhesives cure only while exposed to light in the UV wavelength. UV Visible light cure adhesives cure while exposed to a broader wavelength of light, including the visible range. For applications in which a portion of the bond area is in shadow, PermaBond has formulated a dual cure adhesive, that is suited to metal bonding applications.

PermaBond UV7141 continues to cure in areas that are not exposed to UV light. The secondary cure mechanism is an anaerobic which cures in the absence of oxygen and presence of metal so it is appropriate for bonding, encapsulating and sealing.

Cure speed of UV adhesives can be adjusted to suit your requirements. The variables affecting cure speed include the wavelength and intensity of the light source, distance from the light to the bond site, UV transmission of the components, and the thickness of the adhesive. PermaBond's technical staff will assist you with the right combination for your application.

Intensity	Distance	Approximate Time
5mW/cm <sup>2</sup>	1 cm	50 sec
50mW/cm <sup>2</sup>	1 cm	5 sec
200mW/cm <sup>2</sup>	2 cm	1 sec
200mW/cm <sup>2</sup>	10 cm	30 sec
2500mW/cm <sup>2</sup>	5 cm	< 1 sec

Examples of cure speeds listed are of a 0.5mm thick bond line. Intensity is measured at 365nm wavelength. **NOTE: Intensity is listed above, do not confuse intensity readings with bulb wattage. A 400 Watt bulb may put out 10mW/cm<sup>2</sup> or 100mW/cm<sup>2</sup> of intensity.**

## Services from PermaBond

PermaBond understands that choosing the best adhesive is only possible after consideration of the components to be bonded, the design requirements and the manufacturing process. PermaBond's staff has the necessary skills to assist your team in a confidential review of all of these elements.

PermaBond specializes in adhesives and sealants and will work closely with your engineers. Send your parts to our lab for testing or to develop custom formulations to meet the unique requirements of your applications. For both standard 'off the shelf' and customized dispensing and curing needs, PermaBond works closely with the industry's best equipment manufacturers. Whether your process utilizes on-demand spot application or a continuous high speed production line, PermaBond can direct you to the equipment supplier best suited to your particular needs.

Contact your Regional Sales Representative for more details, or call 1-800-640-7599 to discuss your immediate needs with an Application Specialist.

Permabond Adhesives and Sealants are sold worldwide  
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