Permabond®
Engineering Adhesives

ADHESIVES FOR METAL FABRICATION



Advances in adhesive technology allow designers to eliminate mechanical fasteners and welding without sacrificing structural integrity or strength.

Driving factors for specifying adhesives are increasing strength and durability of products while reducing costs.

Fasteners and spot welding can create stress concentration points. Adhesives distribute stress across the entire bond joint increasing the resistance to fatigue while preventing corrosion. Flexible adhesives absorb stress caused by flexing, vibration, impact, and thermal expansion, further reducing fatigue.

KEY FEATURES:

- Increase strength
- Increase durability
- Reduce costs
- Reduce weight
- Distribute stress
- Increase fatigue resistance
- Absorb stress
- Reduce vibration noise
- Prevent corrosion
- Improve aesthetics
- Increase assembly speed
- Reduce production costs
- Join dissimilar materials such as metals, plastics, and composites







IDEAL FOR BONDING:

- Aluminum
- Bronze
- Carbon Fiber
- Composite
- Copper
- Ferrite
- Gold
- Glass
- Lead
- Nickel
- Platinum
- Plastic
- Rare Earth
- Rubber
- Silver
- Stainless Steel
- Steel
- Titanium
- Various Alloys
- Wrought Iron
- Zinc

...and many more!

Description/Application	Product	Technology	Temperature Resistance		Viscosity cP= mPa.s	Gap fill mm (in) when bonding	Fixture time	Shear Strength Grit Blasted Steel N/mm² (psi)
Removable threadlocker	MM115	Anaerobic	-54°C (-65°F)	150 °C (300 °F)	1300 cP Thixotropic	0.15 (0.006)	10 mins	10 (1450)
Permanent threadlocker	HM128	Anaerobic	-54°C (-65°F)	150 °C (300 °F)	500 cP	0.15 (0.006)	15 mins	17 (2500)
Retaining compound	HM162	Anaerobic	-54°C (-65°F)	200 °C (390 °F)	1000 cP	0.2 (0.008)	5 - 8 mins	28 - 31 (4000 - 4500)
Bonding prior to paint bake	ET5401	2-Component Epoxy with heat cure	-40°C (-40°F)	140°C (285°F)*	Thixotropic Paste	5.0 (0.20)	60 - 90 mins	20 - 30* (2900-4400)*
Fast curing, excellent general purpose epoxy	ET503	2-Component Epoxy	-40°C (-40°F)	100°C (215°F)	15,000 cP	1.0 (0.04)	6 mins	20-26 (2900-3770)
FDA Compliant formulation for food contact	ET5147	2-Component Epoxy	-40°C (-40°F)	120°C (250°F)	Thixotropic Paste	2.0 (0.08)	16 hrs @ 23°C 30 mins @ 60°C	18 - 20 (2600 - 2900)
General purpose, metal bonder, with a long pot life	ET538	2-Component Epoxy	-40°C (-40°F)	100°C (215°F)	Thixotropic Paste	5.0 (0.2)	3 - 5 hrs	25 - 30 (3625 - 4350)
Ideal for high temperature resistant metal bonding	ES5504	Heat Cure Epoxy	-40°C (-40°F)	275°C (525°F)	Paste	2.0 (0.08)	N/A	18 - 22 (2600 - 3200)**
No sag or flow during cure	ES569	Heat Cure Epoxy	-40°C (-40°F)	180°C (355°F)	375,000 cP	5.0 (0.20)	N/A	27- 41 (4000 - 6000)
Surface activated with Initiator 43	TA436	Structural Acrylic	-54°C (-65°F)	150°C (300°F)	20rpm: 25,000 2.5rpm: 60,000 cP	0.5 (0.02)	1 - 3 mins	15 - 25 (2200 - 3600)
Use as single component or with initiator 41 for increased cure speed.	TA437	Structural Acrylic	-54°C (-65°F)	200°C (390°F)	20rpm: 40,000 2.5rpm: 130,000	0.5 (0.02)	5 - 10 mins or 20-30 secs with Initiator 41	14 - 20 (2000 - 3000)
Use with Initiator 46, very high strength	TA4246	Surface Activated Methyl methacrylate	-40°C (-40°F)	120°C (250°F)	28,000 cP	0.5 (0.02)	2 - 4 mins	33 - 35 (4800 - 5100)
Two component, thixotropic, non-sag.	TA4810	2 component Methyl methacrylate	-40°C (-40°F)	120°C (250°F)	175,000 cP	2.0 (0.08)	20 - 30 mins	21 - 28 (3000 - 4000)
Ideal for sealing with excellent elongation, Shore A 50, no read through	MS359 Grey	MS Polymer	-40°C (-40°F)	100°C (212°F)	Non-sag, Paste	sealing	skin over time 10 - 20 mins	2 - 3 (290 - 430)
Non-sag, strong bonds to metal, plastic, and composite. Cured material remains soft and flexible, no read through.	MT3821	Modified epoxy	-40°C (-40°F)	120°C (250°F)	Thixotropic Paste	5.0 (0.20)	60 - 90 mins	4 - 7 (600 - 1000)
Extended pot life allows covering large areas.	PT328	2- Component Urethane	-40°C (-40°F)	120°C (250°F)	5250 cP	5.0 (0.20)	pot life 15 - 20 mins	12 - 18 (1700 - 2600)
The Original! General purpose metal bonding	910	Cyanoacrylate	-54°C (-65°F)	90°C (195°F)	80 cP	0.15 (0.006)	10 -15 secs	23 - 29 (3300-4200)
Ideal for bonding metal name tags and labels to fabricated housings and equipment.	2011	Cyanoacrylate	-54°C (-65°F)	120°C (250°F)	Thixotropic Gel	0.5 (0.02)	5 - 10 secs	20 - 24 (2900 - 3500)

*Heat cure increases temperature resistance to values stated
**Aluminum

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