



## 3M™ Scotch-Weld™ Epoxy, Acrylic, and Urethane Adhesives

### Load-bearing formulations for metals, rubber, glass and more

As an alternative to mechanical or fusion fastening, the reasons for 3M™ Scotch-Weld™ Epoxy, Acrylic and Urethane Adhesives are many: greater design latitude, cleaner lines, material substitution, less machining, lighter weight, more durability, and often less cost.

To meet application and end-use requirements, there are formulations for bonding steel, aluminum, copper, low surface energy plastics, rubber, glass, wood, masonry and more. Depending on adhesive, select from duo-pak cartridges, cans, tubes, pails, and drums.

Whatever properties you need – durable adhesion, flexibility, creep resistance, heat and environmental resistance, or void-filling – you’ll likely find a 3M™ Scotch-Weld™ Structural Adhesive to meet your requirements and expectations.



13

With handling strength in 2 hours and full cure in 24 hours, 3M™ Scotch-Weld™ Epoxy Adhesive DP420 bonds the shaft into the head of a golf club. Flexibility of the toughened two-part formulation helps absorb repeated impact for a secure bond. Available in 37ml, 200ml and 400ml duo-pak cartridges for use with any of the convenient hand-held 3M™ EPX™ Applicators.



14

With a 400ml cartridge, the 3M™ EPX™ Pneumatic Applicator applies 3M™ Scotch-Weld™ Two-Part Epoxy Adhesive to bond ABS components of an automotive breather valve. The toughened epoxy at the inlet port seals in the high pressure and air/fuel mixture.



15

With no surface preparation, 3M™ Scotch-Weld™ Structural Acrylic Adhesive DP8005 bonds the mitered corners of a simulated-wood composite plastic P.O.P. display, eliminating nails that would compromise appearance.



16

3M™ Scotch-Weld™ Low Odor Acrylic Adhesive DP810 requires minimal surface preparation for bonding metal hinges into awning frames. Reaches handling strength in only 10 minutes.



17

Brush-applied 3M™ Scotch-Weld™ Epoxy Adhesive 2216 B/A provides a tough, flexible bond between honeycomb and the framework in entry step panels of commuter aircraft.



18

3M™ Scotch-Weld™ Two-Part Epoxy Adhesive bonds steel couplings into aluminum tubing of a bicycle frame. Couplings are threaded for easy assembly and disassembly.

Product Information: 3M™ Scotch-Weld™ Adhesives in Duo-Pak Cartridges (continued)

Product (Color) <sup>(1)</sup>	Description	Mix Ratio (Volume) B:A	Approximate <sup>(2)</sup> Viscosity 75°F (24°C) (CPS)	Approximate <sup>(3)</sup> Worklife At 75°F (24°C)	Average T-Peel <sup>(4)</sup> At 75°F (24°C) (PIW)	Overlap Shear Strength <sup>(5)</sup> (PSI)		
						-67°F (-55°C)	75°F (24°C)	180°F (82°C)
Acrylic	DP8005 Off-White	10:1	27,500	2.5-3 Min.	16	–	2000	300
	DP8010	10:1	17,000 - 22,000	10 Min.	30	-	1800	400
	DP8010NS	10:1	27,000 - 45,000	10 Min.	30	–	2400	400

Product Information: 3M™ Scotch-Weld™ Two-Part Structural Adhesives

Product (Color) <sup>(1)</sup>	Description	Mix Ratio (Volume) B:A	Approximate <sup>(2)</sup> Viscosity 75°F (24°C) (CPS)	Approximate <sup>(3)</sup> Worklife At 75°F (24°C)	Average T-Peel <sup>(4)</sup> At 75°F (24°C) (PIW)	Overlap Shear Strength <sup>(5)</sup> (PSI)		
						-67°F (-55°C)	75°F (24°C)	180°F (82°C)
Two-Part Epoxy	1751 B/A Gray	3:2	700,000	45 Min.	4	1400	2000	500
	1838 B/A Green	4:5	400,000	60 Min.	4	1500	3000	500
	1838 B/A Tan	6:5	250,000	60 Min.	5	1500	3000	500
	1838L B/A Translucent	1:1	10,000	60 Min.	5	2000	3000	300
	2158 B/A Gray	1:1	375,000	120 Min.	4	1700	2000	400
	2216 B/A Gray	2:3	80,000	90 Min.	25	2000	2500	400
	2216 B/A Tan Non-sag	2:3	350,000	90 Min.	25	2000	2500	400
	2216 B/A Translucent	1:1	10,000	120 Min.	25	3000	2000	150
	3501 B/A Gray	1:1	500,000	7 Min.	5	1500	2400	300
Two-Part Urethane	3532 B/A Brown	1:1	30,000	7 Min.	25	2500	2000	300
	3535 B/A Off-White	1:1	30,000	3 Min.	25	2500	2000	300
	3549 B/A Brown	1:1	30,000	60 Min.	25	2500	2000	300

Note: The technical information and data on these pages should be considered representative or typical only, and should not be used for specification purposes.

(1) Color is mixed if two-part product.

(2) Brookfield viscometer viscosity values are typical values for the mixed product.

(3) The time during which an adhesive will adequately wet-out on a substrate.

(4) 180° peel tested on .030" aluminum per ASTM D 1876-61T.

(5) Tested per ASTM D 1002-64.

## Product Information: 3M™ EPX™ Applicators and Nozzles

Cartridge Size	35ml (10:1)	37ml (2:1)	50ml (1:1)	200ml (1:1 and 2:1)	250ml (10:1)	400ml (1:1 and 2:1)
<b>3M™ EPX™ Applicators</b> <i>Manual</i>	EPX Plus II Applicator with 10:1 Plunger	EPX Metal Applicator with 2:1 Plunger	EPX Metal Applicator with 1:1 Plunger	EPX 200ml Manual Applicator with Plunger*	None	None
		EPX Plus II Applicator with 2:1 Plunger*	EPX Plus II Applicator with 1:1 Plunger*			
<i>Pneumatic</i>	None	EPX 50ml Pneumatic Applicator**	EPX 50ml Pneumatic Applicator	EPX 200ml Pneumatic Applicator	EPX 200ml Pneumatic Applicator	EPX 400ml Pneumatic Applicator
					10:1 Conversion Kit for EPX 200ml Pneumatic Applicator	
<b>3M™ EPX™ Nozzles</b>	10:1 Mixing Nozzle for the EPX Plus Applicator	EPX Mixing Nozzle for 50ml Applicator	EPX Mixing Nozzle for 50ml Applicator	EPX 6mm Nozzle for 200ml/400ml Applicators**	10:1 Mixing Nozzle for the EPX 250ml Applicator	EPX 6mm Nozzle for the 200ml/400ml Applicator**
		EPX Plus II Mixing Nozzle - Square Gold	EPX Plus II Mixing Nozzle - Square Gold	EPX 10mm Nozzle for 200ml/400ml Applicators		EPX 10mm Nozzle for 200ml/400ml Applicators

\*Included with the applicator.

\*\*Recommended for all low viscosity products.

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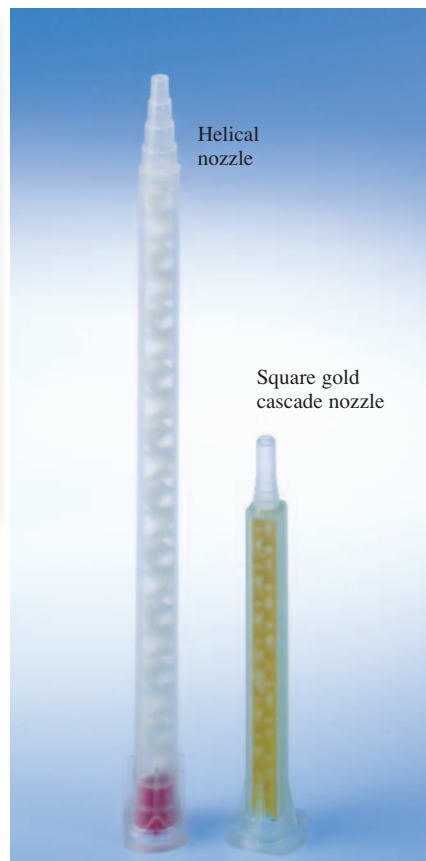


21

To meet the performance requirements of your structural application, 3M doesn't just develop adhesives, but whole dispensing systems designed to facilitate production in low and high volume assembly operations.

For low volume applications and take-it-to-the-job convenience, the 3M™ EPX Plus II and EPX metal manual dispensers are engineered for comfortable grip and easy loading. With a choice of plungers, you can put any of the 3M™ Scotch-Weld™ Duo-Pak Structural Adhesives to work.

For higher volume, select the 200ml manual dispenser or pneumatic dispenser, or the 400ml pneumatic dispenser.



22

### Choice of helical or cascade nozzle

With the unique chambered design of the square gold nozzle, the two parts of the adhesive cascade through the nozzle with just low pressure. You mix and apply even higher viscosity adhesives with just an easy squeeze of the 3M™ EPX™ Applicator palm trigger.

The helical nozzle design is your choice whenever you want extended reach for convenience and access.



23



24

Both the helical and square gold 3M™ EPX™ Nozzles simultaneously mix, meter, and dispense 3M™ Scotch-Weld™ 2-Part Adhesives from Duo-Pak cartridges. Extended reach helical nozzle is used here in bonding ABS components of a pump housing.





# 3M™ Scotch-Weld™ Instant Adhesives

## Fast bonding with the right combination of strength, cure time, and viscosity

For speed and performance, you'll likely find a product in this line with precisely the right combination of bond strength, cure time and viscosity.

These one-part cyanoacrylate adhesives rapidly reach handling strength at room temperature without a catalyst. On many applications, bonds reach handling strength in 5-10 seconds and 80% of full strength in an hour. A single drop per square inch can bond many plastics, rubber, metals and more with tensile strength up to 5,000 psi.

Application is easy from their own containers or through intermediate manual dispensers or automated systems. Curing requires no expensive equipment or fixturing.



3M™ Scotch-Weld™ CA40 Instant Adhesive works on many problem surfaces where other adhesives may fail, such as EPDM rubber.



For repair of fiberglass/concrete cast pottery, 3M™ Scotch-Weld™ Instant Adhesive CA50 Gel bonds with high tensile and shear strength. Non-sagging for neat application.



For wood and veneer repair, 3M™ Scotch-Weld™ Instant Adhesive CA40H is a high viscosity liquid for a fast void-filling bond.



3M™ Scotch-Weld™ Instant Adhesive CA8 is a multi-purpose product for use in a variety of assembly applications.

## Product information: 3M™ Scotch-Weld™ Instant Adhesives

Product	Description	Base	Time <sup>(1)</sup> To Handling Strength (Sec.)	Viscosity (CPS)	Average <sup>(2)</sup> T-Peel At 75°F (24°C) (PIW)	Overlap Shear Strength <sup>(3)</sup> @ 75°F (24°C) (PSI)					
						Steel	Alumi- num	Nitrile Rubber	Neoprene Rubber	ABS	Rigid PVC
CA4	• Fast setting for a variety of plastics and rubbers	ethyl	5-40	150	1-2	2300	2800	35*	55*	800*	800*
CA5	• Higher viscosity, slower setting version of CA4 for filling gaps • Meets CID A-A-3097, Type II, Class 3	ethyl	15-60	2000	1-2	2500	650	35*	55*	800*	800*
CA7	• Very fast setting • Excellent adhesion to metals, plastics, and rubbers	methyl	1-30	15-40	2-4	2500	2400	35*	55*	900*	1000*
CA8	• Slower setting than CA7 • Excellent adhesion to metals, plastics and rubbers • Meets CID A-A-3097, Type II, Class 2	ethyl	5-40	70-130	2-4	2000	2100	35*	55*	900*	1000*
CA9	• Slower setting version of CA8 for wire tacking and coil terminating • Meets CID A-A-3097, Type II, Class 3	ethyl	20-70	1000-1700	2-4	2000	2400	35*	55*	900*	1000*
CA40	• Very fast setting • Excellent adhesion to many substrates including flexible vinyl and EPDM rubber	ethyl	3-20	20	1-2	1700	2600	35*	55*	800*	800*
CA40H	• Higher viscosity version of CA40 • Better void filling capabilities.	ethyl	5-40	400-600	1-2	1500	1500	35*	55*	900*	1000*
CA50 Gel	• High-viscosity, non-sag gel • Less sensitive to acidic surfaces.	ethyl	60-120	45,000-85,000	1-2	2000	900	105*	130*	800*	600*
CA100	• High peel and impact strength • High thermal shock and heat resistance	ethyl	20-70	2500-4500	15	2000	2900	95*	120*	600*	700*
Surface Activator	• Clear, colorless organic-based liquid helps speed curing and prime surfaces • Comes with brush and spray pump										

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(1) The time it takes assembled parts to reach a strength where further handling and processing can take place. Times will depend on surface to be bonded, temperature and humidity.

(2) Tested per ASTM D 1876-61T.

(3) Tested per ASTM D 1002-64.  
\* Substrate failure.

## Product information: 3M™ Scotch-Weld™ Anaerobic Adhesives

### 3M™ Scotch-Weld™ Threadlockers

Product number	Removal (torque-break/prevail)	Bolt size	Description	Color	Size
3493	Low 50/30 lb. in.	Less than 5/16"	• Screw grade • Thixotropic to reduce flow after application to surface • Hand tools for disassembly	Purple	10, 50, 250 ml
3494	Medium 120/50 lb. in.	Up to 3/4"	• Nut grade • Thixotropic to reduce flow after application to surface • Oil tolerant • Hand tools for disassembly	Blue	10, 50, 250 ml
3495	Medium/high 200/100 lb. in.	Up to 1"	• Permanent, controlled torque • High breakaway, reduced prevailing torque • Heat and hand tools for disassembly	Red	10, 50, 250 ml
3496	High 230/330 lb. in.	Up to 1"	• Permanent • Low viscosity • High breakaway, high prevailing torque • Heat and hand tools for disassembly	Red	10, 50, 250 ml
3497	High 130/225 lb. in.	Up to 1-1/2"	• Permanent • High viscosity • Wide temperature range -65°F to 450°F (-55 to 232°C) • High breakaway, high prevailing torque • Heat and hand tools for disassembly	Red	10, 50, 250 ml
3498	Medium 85/250 lb. in.	Greater than 1/4"	• Wicks into pre-assembled bolts • Seals welds and porous metals • Locks and seals small compression and ferrule fittings • Service temperature to 400°F (204°C) • Heat and hand tools for disassembly	Green	10, 50, 250 ml

17

### 3M™ Scotch-Weld™ Thread Sealants

Product number	Removal torque	Pipe size	Description	Color	Size
3477	Low 15 lb. in.	Up to 2"	• Medium viscosity with no fillers • For all hydraulic and pneumatic fittings • No clogging of valves or filters • Hand tool disassembly for pipes under 1", heat required for over 1"	Purple	50 ml
3478	Low 25 lb. in.	Up to 2"	• Faster cure than 3477 • Wide temperature range from -65°F to 400°F (-55°C to 204°C) • For stainless steel, Monel®, and other inactive surfaces • Hand tool disassembly	White	50 ml
3479	Medium 50 lb. in.	Up to 3"	• High lubricity for easy threading • Instant seal with slow cure • Re-adjustable for up to 24 hours • Wide temperature range from -65°F to 400°F (-55°C to 204°C) • Hand tool disassembly	White	50 ml

### 3M™ Scotch-Weld™ Retaining Compounds

Product number	Shear strength (psi)	Gap fill	Description	Color	Size
3434	2500	Up to 0.015"	• Medium-high strength • High viscosity • Thixotropic to reduce flow after application to surface • Temperature resistance to 450°F (232°C) for cylinder, heat exchanger, and other high temperature applications	Green	50 ml
3435	2500	Up to 0.005"	• Medium strength • Low viscosity general purpose compound for rigid cylindrical assemblies • Augments press fits	Green	50 ml
3436	3250	Up to 0.020"	• Medium strength • Gel formulation for repair of worn shafts, splines, keyways, and housings	Gray	50 ml
3437	3700	Up to 0.015"	• High strength • Medium viscosity • For rigid and slip fit assemblies	Green	50 ml

### 3M™ Scotch-Weld™ Gasket Makers

Product number	Hardness	Gap fill primed/unprimed	Description	Color	Size
3453	Rigid	Up to 0.020"/0.010"	• General purpose gasketing with wide temperature range from -65°F to 400°F (-55°C to 204°C) • Hand dispense or screen print • Instant low pressure seal	Red	50 ml
3454	Flexible	Up to 0.050"/0.010"	• Gasketing for aluminum flanges • Does not shrink or relax • Instant low pressure seal without priming	Red	50 ml
3455	Flexible	Up to 0.050"/0.010"	• General purpose gasketing for gearbox covers, pump flanges, fuel and water pumps • Provides instant low pressure seal	Purple	50 ml

### 3M™ Scotch-Weld™ Anaerobic Activator

Product number	Description	Size
3989 Anaerobic Activator	• Accelerates cure of all 3M anaerobic adhesive products • Helps assure cure on inactive metals • Dry time 30-60 seconds • 30 days on-part life • Solvent-based (flammable acetone)	4.5 oz.

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# 3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy Adhesives and Applicator

## Production power of dual technologies in one self-contained system

The easy-to-use and maintain 3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy Adhesive Applicator and moisture-curing polyurethane adhesives combine benefits typical of two technologies at a new low dispensing temperature (170°F/77°C):

1. Production benefits typical of hot melt adhesive technology.
  - Fast initial set and handling strength in as few as 5 seconds helps eliminate or minimize fixturing.
2. Performance benefits typical of structural adhesive technology.
  - Greater than 1000 lbs. of overlap shear strength within minutes exceeds strength of conventional hot melt.

Plastic disposable nozzle allows easy, quick changeover of cartridges.



Bond wood or plastic rosettes to wood drawers without fixturing or drying time. Adhesive dispenses warm at 170°F (77°C) and can remain in the applicator at dispensing temperature for up to 40 hours.



Trigger a fast, easy, and neat bead of adhesive from self-contained hand-held applicator at up to 11 pounds per hour.



Thin, flexible bond lines help improve the fit, appearance and durability.



Up to 2.5-minute open time allows positioning of multiple or complex parts.



Assemble miter joints with a tough, flexible bond for long life durability.



Bond simulated-wood plastic trim to wood cabinet doors with an invisible bond line.



Assemble mirror components with hot melt adhesive speed and structural strength.

# Product information: 3M™ Scotch-Weld™ Polyurethane Reactive (PUR) Easy Adhesives

Product	Description	Viscosity @ 121°C (CPS)	Open Time (Min.)	Set Time (Sec.)	Shore D	Tensile Strength (PSI)	Elongation (%)
17005	• Very fast set time • Thin glue line • Medium open time	28,600	0.75	5	65	3900	725
17010	• Fast set time • Best for bonding wood and plastics • Small-to-medium parts assembly	14,200	0.75	10	35	1055	750
17030	• Medium set time • Low viscosity • Best for bonding wood to select plastics • Thin glue line	15,700	1	30	60	4000	625
17060	• Long open time • Lower viscosity • Thin glue line	9600	2.5	60	30	1625	400

### Terminology

Open times and set times are based on a room temperature environment. High temperatures will lengthen open times and set times while lower environmental temperatures will shorten open times and set times.

## Adhesive Selection Guide

Substrates	Wood/hard-board	MDF*	PVC	Poly-styrene (bead board)	Poly-carbonate <sup>4</sup>	Mela-mine	ABS	FRP-epoxy	Poly-acrylic	Poly-styrene	Fabric/felt/cork	Leather	SBR	Nitrile Rubber <sup>3</sup>	Neo-prene <sup>3</sup>	Glass/ceramic	Alumi-num <sup>1, 2</sup>	
Wood/hardboard	17005 17030 17010 17060	17005 17030 17005 17060	17010 17060 17005 17030	17005 17030 17010 17060	17005 17030 17060 17010	17005 17030 17060 17010	17005 17030 17060 17010	17005 17030 17060 17010	17005 17030 17060 17010	17010 17060 17005 17030	17005 17030 17060 17010	17005 17030 17060 17010	17010 17060 17005 17030	17010 17060 17005 17030	17030 17060 17005 17010	17010 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030
MDF*		17005 17030 17010 17060	17010 17060 17005 17030	17005 17030 17010 17060	17005 17030 17060 17010	17005 17030 17060 17010	17005 17030 17060 17010	17005 17030 17060 17010	17005 17030 17060 17010	17010 17060 17005 17030	17005 17030 17060 17010	17005 17030 17060 17010	17010 17060 17005 17030	17010 17060 17005 17030	17030 17060 17005 17010	17010 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030
PVC			17010 17060 17005 17030	17010 17060 17005 17030	17005 17030 17060 17010	17005 17030 17060 17010	17005 17030 17060 17010	17005 17030 17060 17010	17005 17030 17060 17010	17010 17060 17005 17030	17005 17030 17060 17010	17005 17030 17060 17010	17010 17060 17005 17030	17010 17060 17005 17030	17030 17060 17005 17010	17010 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030
Polystyrene (Beadboard)				17005 17030 17010 17060	17005 17030 17060 17010	17005 17030 17060 17010	17005 17030 17060 17010	17005 17030 17060 17010	17030 17060 17005 17030	17010 17060 17005 17030	17005 17030 17060 17010	17005 17030 17060 17010	17030 17060 17005 17030	17010 17060 17005 17030	17030 17060 17005 17010	17030 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030
Polycarbonate <sup>4</sup>					17005 17030 17060 17010	17005 17030 17060 17010	17005 17030 17060 17010	17005 17030 17060 17010	17030 17060 17005 17030	17010 17060 17005 17030	17005 17030 17060 17010	17005 17030 17060 17010	17030 17060 17005 17030	17010 17060 17005 17030	17030 17060 17005 17010	17030 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030
Melamine					17010 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030	17030 17060 17005 17030	17010 17060 17005 17030	17005 17030 17060 17010	17005 17030 17060 17010	17010 17060 17005 17030	17010 17060 17005 17030	17030 17060 17005 17010	17030 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030
ABS						17005 17030 17010 17060	17005 17030 17010 17060	17030 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030	17005 17030 17060 17010	17005 17030 17060 17010	17010 17060 17005 17030	17030 17060 17005 17010	17030 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030
FRP-epoxy							17005 17030 17010 17060	17030 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030	17005 17030 17060 17010	17005 17030 17060 17010	17010 17060 17005 17030	17030 17060 17005 17010	17030 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030
Polyacrylic								17030 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030	17005 17030 17060 17010	17005 17030 17060 17010	17010 17060 17005 17030	17030 17060 17005 17010	17030 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030
Polystyrene										17010 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030	17030 17060 17005 17010	17030 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030
Fabric/felt/cork											17005 17030 17010 17060	17005 17030 17060 17010	17010 17060 17005 17030	17030 17060 17005 17010	17030 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030
Leather												17005 17030 17010 17060	17030 17060 17005 17030	17030 17060 17005 17010	17030 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030	17010 17060 17005 17030
SBR													17030 17060	17030 17060	17030 17010	17010 17060	17010 17060	17010 17060
Nitrile Rubber <sup>3</sup>														17030 17060	17030 17010	17010 17060	17010 17060	17010 17060
Neoprene <sup>3</sup>															17030 17010	17010 17060	17010 17060	17010 17060

1 Not recommended for bonding metal, glass and ceramic to itself or each other due to low moisture transmission of substrates.  
2 Abrade uncoated aluminum. Not for use on uncoated aluminum subjected to hot/humid conditions.  
3 Rubbers vary in composition. Adhesion to specific rubber must be evaluated by user.  
4 Adhesive may partially delaminate from polycarbonate at elevated temperatures.  
For polypropylene and polyethylene, corona or plasma treatment may improve adhesion.

\*Medium Density Fiberboard

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