

February, 2019

3M™ Scotch-Weld™ Low Odor Acrylic Adhesive DP810

Product Description

3M™ Scotch-Weld™ Low Odor Acrylic Adhesives are two-part, 1:1 mix ratio, toughened structural adhesives with less odor than most acrylic adhesives. These adhesives have excellent shear and peel strength along with good impact resistance and durability. They can quickly bond to most metals, ceramics, rubbers, plastics and wood with minimal surface preparation.



Product Features

- Tough, durable bonds
- Low odor acrylic adhesive
- Minimal surface prep
- 10 minute work life
- 20 minute time to handling strength
- 1:1 mix ratio
- Bonds stainless steel
- Excellent shear and peel strength

Technical Information Note

The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Typical Uncured Physical Properties

Property	Values	Test Condition	Notes
Base Color	Green		
Accelerator Color	White		
Base Viscosity	18000 to 22000 cP	Room Temperature	Viscosity obtained by Brookfield, DV-II, #7 Spindle, 20 rpm
Accelerator Viscosity	18000 to 22000 cP	Room Temperature	Viscosity obtained by Brookfield, DV-II, #7 Spindle, 20 rpm.
Base Resin	Acrylic		
Accelerator Resin	Acrylic		
Base Net Weight	8.7 to 9.1 lb/gal		
Accelerator Net Weight	8.7 to 9.1 lb/gal		
Mix Ratio by Volume (B:A)	1:1		
Mix Ratio by Weight (B:A)	1:1		

Typical Mixed Physical Properties

Property	Values	Test Condition	Notes
Worklife	10 min	Room Temperature	
Time to Handling Strength	20 min	Room Temperature	Minimum time required to achieve 50 psi of overlap shear strength. Cure times are approximate and depend on adhesive temperature.
Time to Full Cure	8 to 24 h	Room Temperature	Time to develop 80% of maximum overlap shear values.

Typical Mixed Physical Properties (continued)

Rate of Strength Buildup (OLS)	Dwell/Cure Time
50 lb/in ²	10 min
1500 lb/in ²	20 min
2250 lb/in ²	60 min
2750 lb/in ²	2 hr
2950 lb/in ²	4 hr
3350 lb/in ²	8 hr
3600 lb/in ²	24 hr

Property: Rate of Strength Buildup (OLS)

Method: ASTM D1002

Test Condition : Room Temperature

notes: Sample dimensions were 1" x 4" x 1/8", with a 1/2 square inch area of overlap, bonded to themselves unless otherwise noted. Data were collected using a Sintech 5GL Mechanical Tester with a 2000# or 5000# load cell. Test rate was 0.1"/minute.

Typical Performance Characteristics

Overlap Shear Strength		Substrate	Failure mode	Surface Preparation
4200 lb/in ²		Etched Aluminum	CF	
3900 lb/in ²	3800 lb/in ²	Aluminum	CF	Abraded
3100 lb/in ²		Cold Rolled Steel	CF	
3450 lb/in ²		Cold Rolled Steel	CF	Oily
3400 lb/in ²		Stainless Steel	CF	
3800 lb/in ²		FRP (Epoxy)	CF	
1100 lb/in ²		Acrylic (PMMA)	SF	
1000 lb/in ²		Polyvinyl chloride (PVC)	SF	
850 lb/in ²		Polycarbonate (PC)	MM	
600 lb/in ²		ABS	MM	

Property: Overlap Shear Strength

Method: ASTM D1002

Dwell/Cure Time: 6 hr @ Room Temperature

Test Condition : Room Temperature

notes: Sample dimensions were 1" x 4" x 1/8", with a 1/2 square inch area of overlap, bonded to themselves unless otherwise noted. Data were collected using a Sintech 5GL Mechanical Tester with a 2000# or 5000# load cell. Test rate was 0.1"/minute. SF = Substrate Failure/Break CF = Cohesive Failure AF = Adhesive Failure MM = Mixed (Mode of AF and CF)

Overlap Shear Strength (at Temperature)	Test Condition	Failure mode
1750 lb/in ²	@ -20°F(-29°C)	MM
3650 lb/in ²	Room Temperature	CF
2000 lb/in ²	@ 120°F(49°C)	CF

Table continued on next page

Typical Performance Characteristics (continued)

Overlap Shear Strength (at Temperature)	Test Condition	Failure mode
550 lb/in ²	@ 180°F(82°C)	CF

Property: Overlap Shear Strength (at Temperature)

Method: ASTM D1002

Dwell/Cure Time: 6 hr @ Room Temperature

Substrate: Etched Aluminum

notes: Sample dimensions were 1" x 4" x 1/8", with a 1/2 square inch area of overlap, bonded to themselves unless otherwise noted. Data were collected using a Sintech 5GL Mechanical Tester with a 2000# or 5000# load cell. Test rate was 0.1"/minute. SF = Substrate Failure/Break CF = Cohesive Failure AF = Adhesive Failure MM = Mixed (Mode of AF and CF)

T-Peel Adhesion: 30 lb/in width

Conditions

Dwell/Cure Time: 6 hr @ Room Temperature

Test Condition : Room Temperature

Substrate: Etched Aluminum

Substrate Notes: 0.017in bondline thickness

Methods

ASTM D1876

Additional Information

Notes: Peel tests on FPL etched, 0.032" gauge aluminum. Jaw separation rate 20"/min.

Typical Environmental Performance

Overlap Shear Strength (14 days immersion)	Environmental Condition	Failure mode
3900 lb/in ²	Control	CF
1500 lb/in ²	160°F(71°C)/100%relative humidity	MM
1750 lb/in ²	160°F(71°C)/Soak	MM
3450 lb/in ²	20% Bleach	CF
3150 lb/in ²	IPA	CF
3850 lb/in ²	50% Antifreeze	CF
2550 lb/in ²	Gasoline	CF
4000 lb/in ²	Diesel Fuel	CF
2650 lb/in ²	Toluene	CF
50 lb/in ²	MEK	CF
75 lb/in ²	Acetone	CF

Property: Overlap Shear Strength (14 days immersion)

Method: ASTM D1002

Dwell/Cure Time: 6 hr @ Room Temperature

Test Condition : Room Temperature

notes: Environmental tests were conducted by immersing bonded coupons prepared in accordance to description in Overlap Shear Test Method: Sample dimensions were 1" x 4" x 1/8", with a 1/2 square inch area of overlap, bonded to themselves unless otherwise noted. Data were collected using a Sintech 5GL Mechanical Tester with a 2000# or 5000# load cell. Test rate was 0.1"/minute. SF = Substrate Failure/Break CF = Cohesive Failure AF = Adhesive Failure MM = Mixed (Mode of AF and CF)

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Handling/Application Information

Directions for Use

Apply adhesive to clean, dry substrates, which are free of paint, oxide films, oils, dust, mold release agents and all other surface contaminants. See the Surface Preparation section for specific substrate preparation method.

48.5 ml cartridge:

Place Duo-Pak cartridge in 3M™ EPX™ Applicator. Remove cap. Dispense and discard a small amount of adhesive to assure even ratio and free flow. Clear orifice if necessary. Attach mixing nozzle. Apply adhesive to clean surfaces, join parts, secure until adhesive sets.

200/400 ml cartridge

While holding Duo-Pak cartridge in an upright position, remove and discard the insert from the cartridge by unscrewing plastic nut and removing metal washer. Place cartridge in a 1:1 200/400 ml EPX applicator. Dispense and discard a small amount of adhesive to ensure even ratio and free flow. Attach mixing and nozzle and secure with plastic retaining nut. Apply adhesive to clean surfaces, join parts, secure until adhesive sets.

Clean-up:

Excess adhesive can be removed with solvent such as MEK*. part or bond line can be removed with isopropyl alcohol.*

Edge tack on a finished

*Note: When using solvents, extinguish all ignition sources and follow the manufacturer's precautions and directions for use.

Heat Cure:

Full cure can be attained by raising the bondline temperature to 120°F (49°C) for 30 minutes or to 150°F (66°C) for 10 minutes.

Surface Preparation

3M™ Scotch-Weld™ Low Odor Acrylic Adhesives can bond oily metal, plastic and other substrates with very little surface preparation. However, for the most consistent results and environmental resistance, all substrates should be clean, dry and free of paint, oxide films, dust, mold release agents and all other surface contaminants. The amount of surface preparation directly depends on the bond strength and environmental resistance desired by the user.

The following cleaning methods are suggested for common surfaces.

Steel and Aluminum

1) Wipe free of dust with oil-free solvent such as acetone or isopropyl alcohol.

2) Sandblast or abrade using clean fine grit abrasives (180 grit or finer).

3) Wipe again with solvent to remove loose particles.

4) If a primer is used, it should be applied within 4 hours after surface preparation (or see instructions pertinent to a specific primer).

Note: Aluminum may also be acid etched. Follow the manufacturer's precautions and directions for this procedure.

Plastic/Rubber

1) Wipe with isopropyl alcohol.*

2) Abrade using fine grit abrasives (180 grit or finer).

3) Remove residue by wiping again with isopropyl alcohol.*

*Note: When using solvents, extinguish all ignition sources and follow the manufacturer's precautions and directions for use.

Storage and Shelf Life

For maximum shelf life, store Duo-Pak cartridges and bulk containers at 32°F (0°C) to 40°F (4°C). Do not freeze.

When stored at the recommended temperatures in the original unopened containers, this product has a shelf life of 18 months from date of manufacture.

Trademarks

3M, Scotch-Weld and EPX are trademarks of 3M Company.

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References

Property	Values
3m.com Product Page	https://www.3m.com/3M/en_US/company-us/all-3m-products/-/3M-Scotch-Weld-Low-Odor-Acrylic-Adhesive-DP810?N=5002385+3293242429&rt=rud
Safety Data Sheet (SDS)	https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=DP810

Family Group

	DP810	DP810 Black	DP810NS
Worklife (min) Test Condition: Room Temperature	10	10	10
Time to Handling Strength (min) Test Condition: Room Temperature	20	20	20

Precautionary Information

Refer to Product Label and Material Safety Data Sheet for health and safety information before using this product. For additional health and safety information, call 1-800-364-3577 or (651) 737-6501.

Information

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