



Scotch-Weld™

Low Odor Acrylic Adhesives

DP8805NS Green • DP8810NS Green

Preliminary Technical Data Sheet

May 2013

Product Description

3M™ Scotch-Weld™ Low Odor Acrylic Adhesives are high performance, two-part acrylic adhesives with lower odor than most acrylic adhesives. These toughened products offer excellent shear, peel, and impact performance. They provide improved adhesion to many plastics and metals, including those with slightly oily surfaces. These durable products feature an exceptionally fast rate of strength build, providing structural strength in minutes.

Note: The following data are taken from tests conducted on a limited number of production runs. 3M will continue to test samples from additional manufacturing lots and issue a new technical data sheet if the results change.

Features

- Toughened
- Excellent shear strength
- High peel strength
- 10:1 mix ratio
- Work life of 5 or 10 minutes
- Structural strength in 10 or 20 minutes
- Contain glass beads to control bond line thickness
- Increased cure speed with applied heat

Note: Unless otherwise indicated, all properties measured at 72 °F (22 °C).

Typical Uncured Physical Properties

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

Property		3M™ Scotch-Weld™ Low Odor Acrylic Adhesive	
		DP8805NS Green	DP8810NS Green
Color	Base (B) Accelerator (A)	Off-white Blue	Off-white Blue
Viscosity ¹	Base (B)	50,000 cP	
	Accelerator (A)	25,000 cP	
Density ²	Base (B)	1.13 g/cm ³	
	Accelerator (A)	1.08 g/cm ³	
Mix ratio	By volume	10 Parts B : 1 Part A	
	By weight	10.5 Parts B : 1 Part A	
Note: Cure speed times are approximate and depend on adhesive temperature.			
Work life ³		5 minutes	10 minutes
Open time ⁴		5 minutes	10 minutes
Time to handling strength ⁵		8 minutes	17 minutes
Time to structural strength ⁶		10 minutes	20 minutes

1. Viscosity measured using parallel plate viscometer; reported viscosity at 10 sec⁻¹ shear rate.

2. Density measured using pycnometer.

3. Maximum time that adhesive can remain in a static mixing nozzle and still be expelled without undue force on the applicator.

4. Maximum time allowed after applying adhesive to one substrate before bond must be closed and fixed in place.

5. Minimum time required to achieve 50 psi of overlap shear strength.

6. Minimum time required to achieve 1,000 psi of overlap shear strength.

Note: The data in this sheet were generated using the 3M™ EPX™ Applicator System equipped with an EPX static mixer, according to manufacturer's directions. Thorough hand-mixing will afford comparable results.

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Typical Mixed Physical Properties

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

Property	3M™ Scotch-Weld™ Low Odor Acrylic Adhesive	
	DP8805NS Green	DP8810NS Green
Color	Green	
Full cure time	24 hours	
Viscosity	50,000 cP	
Density	1.13 g/cm ³	

Typical Cured Physical Properties

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

Overlap Shear (psi)⁷

Substrate	3M™ Scotch-Weld™ Low Odor Acrylic Adhesive	
	DP8805NS Green	DP8810NS Green
Aluminum	3,500 CF	3,700 psi CF
PVC	1,800 SF	1,700 psi SF
ABS	1,300 SF	1,300 psi SF
Acrylic	1,100 SF	800 psi SF
Polycarbonate	800 CF	900 psi CF

7. Overlap shear values measured using ASTM D1002; adhesives allowed to cure for 24 hours at room temperature; ½” overlap; 0.009” bond line thickness; samples pulled at 0.1 in/min for metals and 2 in/min for plastics; all surfaces prepared with light abrasion and solvent clean; substrates used were 1/16” thick aluminum and 1/8” thick plastics; failure modes:
AF: adhesive failure CF: cohesive failure SF: substrate failure

Environmental Resistance⁸

Condition	Substrate	3M™ Scotch-Weld™ Low Odor Acrylic Adhesive	
		DP8805NS Green	DP8810NS Green
194°F (90°C)	Aluminum	100%	Not tested yet
120°F (49°C) + 80% relative humidity		90%	
Water		90%	
5% Salt Water		100%	
Gasoline		25%	
Diesel Fuel		100%	
Motor Oil		100%	
Antifreeze		100%	
Isopropyl Alcohol		65%	
Acetone		20%	
Bleach		80%	
120°F (49°C) + 80% relative humidity	PVC	100%	
Water		100%	
5% Salt Water		100%	

8. Values indicate overlap shear test performance retained after 1,000 hours of continuous exposure relative to a control sample left at room temperature; samples conditioned for 7 days at room temperature and 50% relative humidity prior to tests.

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Floating Roller Peel (lb/inch width)⁹

Substrate	3M™ Scotch-Weld™ Low Odor Acrylic Adhesive	
	DP8805NS Green	DP8810NS Green
Aluminum	30 CF	30 CF

9. Floating roller peel values measured using ASTM D3167; adhesives allowed to cure for 24 hours at room temperature; 1" wide samples; 0.017" bond line thickness; samples pulled at 6 in/min; aluminum surfaces etched; substrates used were 1/16" thick and 0.020" thick aluminum; failure modes:

AF: adhesive failure CF: cohesive failure SF: substrate failure

Directions For Use

1. To obtain the highest strength structural bonds, paint, oxide films, oils, dust, mold release agents, and all other surface contaminants must be completely removed. The amount of surface preparation depends on the required bond strength and environmental aging resistance desired by user. For suggested surface preparations on common substrates, see the section on surface preparation.
2. Mixing

For Duo-Pak Cartridges

Store cartridges with cap end up to allow any air bubbles to rise towards the tip. To use, simply insert the cartridge into the EPX applicator and start the plunger into the cylinders using light pressure on the trigger. Then remove the cap and expel a small amount of adhesive to ensure material flows freely from both sides of cartridge. For automatic mixing, attach an EPX mixing nozzle to the cartridge and begin dispensing the adhesive. For hand mixing, expel the desired amount of adhesive and mix thoroughly. Mix approximately 15 seconds after obtaining a uniform color.

For Bulk Containers

Mix thoroughly by weight or volume in the proportion specified on the product label or in the typical uncured properties section. Mix approximately 15 seconds after obtaining a uniform color.

3. Apply adhesive and join surfaces within the open time listed for the specific product. Larger quantities and/or higher temperatures will reduce this working time.
4. Allow adhesive to cure at 60°F (16°C) or above until completely firm. Applying heat up to 150°F (66°C) will increase cure speed.
5. Keep parts from moving during cure. Apply contact pressure or fixture in place if necessary. Optimum bond line thickness ranges from 0.005 to 0.020 inch; shear strength will be maximized with thinner bond lines, while peel strength reaches a maximum with thicker bond lines.
6. Excess uncured adhesive can be cleaned up with ketone type solvents.*

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

Surface Preparation

3M™ Scotch-Weld™ Low Odor Acrylic Adhesives are designed to be used on metal, wood, and most plastic surfaces. The following cleaning methods are suggested for common surfaces:

Steel:

1. Wipe free of dust and dirt with pure solvent such as acetone or isopropyl alcohol.*
2. Sandblast or abrade using clean fine grit abrasives.
3. Wipe again with clean solvent to remove loose particles.*
4. When using a primer, apply within 4 hours after surface preparation.

Aluminum:

1. Wipe free of dust and dirt with pure solvent such as acetone or isopropyl alcohol.*
2. Sandblast or abrade using clean fine grit abrasives.
3. Wipe again with clean solvent to remove loose particles.*

Plastics/Rubbers:

1. Wipe with isopropyl alcohol.*
2. Abrade using fine grit abrasives.
3. Wipe with isopropyl alcohol.*

Glass:

1. Solvent wipe surface using acetone or MEK.*
2. Apply a thin coating of a silane adhesion promoter to the glass surfaces to be bonded and allow to dry completely before bonding.

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

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Storage	Store product at 72°F (22°C) or below. Refrigeration at 40°F (4°C) will help extend shelf life. Do not freeze. Allow product to reach room temperature prior to use.
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Shelf Life	3M™ Scotch-Weld™ Low Odor Acrylic Adhesives have a shelf life of 18 months in unopened original containers kept at recommended storage conditions.
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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.
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For Additional Information	To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550 or visit www.3M.com/adhesives . Address correspondence to 3M Industrial Adhesives and Tapes Division, Building 21-1W-10, 900 Bush Avenue, St. Paul, MN 55144-1000. Our fax number is 651-778-4244. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.
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