



Scotch-Weld™ Low Odour Acrylic Adhesives DP8810NS Green

Product Data Sheet

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Product Description

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

Key Features

- Toughened
- Work life of approximately 10 minutes
- Good shear strength
- Structural strength in about 18 minutes
- High peel and impact strength
- 10:1 mix ratio
- Increased cure speed with applied heat
- Contain glass beads (250µ diameter) to control bond line thickness

Note:

Unless otherwise indicated, all properties measured at 22°C.

Physical Properties

Property	DP8810NS Green	
Colour	Base (B) Accelerator (A)	Off-white Blue
Viscosity ¹	Base (B) Accelerator (A)	90000 mPas 35000 mPas
Density ²	Base (B) Accelerator (A)	1.08 g/cm ³ 1.08 g/cm ³
Mix ratio	By volume By weight	10 Parts B : 1 Part A 10 Parts B : 1 Part A
Note: Cure speed times are approximate and depend on adhesive temperature.		
Work life ³	8-12 min	
Open time ⁴	8-12 min	
Time to handling strength ⁵	16-20 min	
Time to structural strength ⁶	19-23 min	
Full cure time	24 hours	

1. Viscosity measured using parallel plate viscometer; reported viscosity at 4 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 0,35 MPa of overlap shear strength.

6. Minimum time required to achieve 6,9 MPa of overlap shear strength.

**Typical Mixed
Physical Properties**

Property	DP8810NS Green
Colour	Blue-Green
Full cure time	24 hours
Viscosity	90000 mPAs
Density	1.08 g/cm ³

**Typical Cured
Physical Properties****Overlap Shear (MPa)⁷**

Substrate	DP8810NS Green
Aluminium	23.6 CF
Stainless steel	22.2 CF
PVC	12.5 SF
ABS	9.0 SF
Acrylic	7.7 SF
Polycarbonate	5.9 CF
Polystyrene	3.8 AF
Polyester (fiber-reinforced)	5.6 AF
Epoxy resin (fiber-reinforced)	22.9 CF
Aluminium (tested at 82°C)	5.2 CF

7. Overlap shear values measured using ASTM D1002; 1 min open time; adhesive allowed to cure for 24 hours at room temperature; 1/2" overlap; 0.010" 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 metals and 1/8" thick plastics; failure modes:

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

Note: Environmental aging tests have shown that these adhesives may accelerate the corrosion of certain metals (such as bare steel, copper, brass, and bronze), leading to low bond strength values and early bond failure. These adhesives also have relatively low adhesion to low surface energy plastics (such as polypropylene, polyethylene, TPO, and PTFE). Applications involving any of these materials should be carefully evaluated by the end user for suitability.

Mechanical Properties⁸

Substrate	DP8810NS Green
Tensile modulus (GPa)	0.87
Tensile strength (MPa)	11.5
Tensile strain at break (%)	6.5

8. Tensile properties measured using ASTM D638; adhesives allowed to cure for 2 weeks at room temperature; 1/8" thick Type I test specimens; samples pulled at 0.2 in/min.

Floating Roller Peel (N/25mm width)⁹

Substrate	DP8810NS Green
Aluminium	5.3 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; aluminium surfaces etched; substrates used were 1/16" thick and 0.020" thick aluminium; failure modes:

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

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.

Environmental Resistance¹⁰

Condition	Substrate	DP8810NS Green
149°C	Aluminium	90%
49°C + 80% relative humidity		60%
85°C + 85% relative humidity		40%
Water		NT
Salt water (5 wt% in water)		NT
Diesel fuel		90%
Motor oil		90%
Antifreeze (50 wt% in water)		90%
Isopropyl alcohol		25%
Bleach (10 wt% in water)		60%
49°C + 80% relative humidity	PVC	NT
Water		NT
Salt water (5 wt% in water)		NT
Sulphuric acid (16 wt% in water)		95%
Sodium hydroxide (10 wt% in water)		65%

10. 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 24 hours at room temperature and 50% relative humidity prior to tests; "NT" = not tested yet.

Note: Fully-cured Low Odour Acrylic Adhesives can withstand short-term incidental contact with almost any solvent, chemical, or environmental condition. However, long-term continuous exposure to the following liquids should be avoided:

1. Elevated temperature (>37°C) water
2. Ketone-type solvents (acetone, MEK)
3. Gasoline and similar liquids

Directions For Use

1. To obtain the highest strength structural bonds, paint, oxide films, oils, dust, mould 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 allowing 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 colour.

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 colour.

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 16°C or above until completely firm. Applying heat up to 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™ 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.

Aluminium:

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.**

Storage	Store product at 27°C or below. Refrigeration at 4° C will help extend shelf life. Do not freeze. Allow product to reach room temperature prior to use.
Shelf Life	3M™ Scotch-Weld™ Low Odour Acrylic Adhesives have a shelf life of 18 months in unopened original containers kept at recommended storage conditions.
Precautionary Information	Refer to product label and Material Safety Data Sheet for health and safety information before using the product. For information please contact your local 3M Office. www.3M.com
For Additional Information	To request additional product information or to arrange for sales assistance, call 0870 6080050 Address correspondence to: 3M United Kingdom PLC, 3M House, 28 Great Jackson Street, Manchester, M15 4PA
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