Scotch-Weld™

DP8910NS

Preliminary Technical Data Sheet **July 2021**

Product Description

3M™ Scotch-Weld™ Adhesive DP8910NS is a flexible, high elongation, high glass transition temperature two-part acrylic structural adhesive that offers excellent shear, peel, and impact performance, particularly to Nylon and many other engineered thermoplastics. This product also provides excellent adhesion to many painted/coated and bare metals.

Features

- Excellent bond strength, durability, and environmental resistance on Nylon
- Outstanding flexibility
- Contain glass beads (0.010" diameter) to control bond line thickness
- Minimal surface preparation

Note: The following data is taken from tests conducted on limited production runs. 3M will continue to test samples from additional product runs and will issue a new data page if the test results change.

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™ DP8910NS
Color	Base (B)	Black
	Accelerator (A)	Grey
Viscosity	Base (B)	74,000 cps @ 3.8 sec^{-1}
	Accelerator (A)	16,000 @ 3.8 sec^{-1}
Density[1]	Base (B)	8.6 lbs/gal
	Accelerator (A)	8.9 lbs/gal
Mix ratio	By volume	10 Parts B : 1 Part A
	By weight	10 Parts B : 1 Part A
		Note: Cure times are approximate and depend on adhesive temperature.
Work life[2]		10 minutes
Open time[3]		10 minutes
Time to handling strength[4]		15 minutes
Time to full cure		24 hours

1. Density measured using pycnometer.
2. Maximum time that adhesive can remain in a static mixing nozzle and still be expelled without undue force on the applicator.
3. Maximum time allowed after applying adhesive to one substrate before bond must be closed and fixed in place.
4. Minimum time required to achieve 50 psi of overlap shear strength.

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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™
	DP8910NS
Color	Black
Full cure time	24 hours
Density	8.6 lbs/gal

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™
	DP8910NS
Nylon 6,6	921 CF
Nylon 6	791 CF
Aluminum	3700 CF
ABS	1878 SF
Polyester Resin (fiber-reinforced)	287 AF
Epoxy Resin (fiber-reinforced)	3433 CF
PVC	608 CF
Polycarbonate	275 AF
Aluminum tested at -40C	2605 AF
Aluminum tested at +85C	1542 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 an isopropyl alcohol wipe. Substrates used were 1/16" thick metals and 1/8" thick plastics; failure modes:
AF: adhesive failure CF: cohesive failure SF: substrate failure

Typical Cured Physical Properties *(continued)*

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

Mechanical Properties [8]

Property	3M™ Scotch-Weld™ DP8910NS
Tensile modulus	104572 psi
Tensile strength	2371 psi
Tensile strain at break	79%

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.

Typical Cured Physical Properties *(continued)*

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

Floating Roller Peel (lb/inch width)[10]

Substrate	3M™ Scotch-Weld™ DP8910NS
Aluminum	43 CF
Aluminum tested at -40C	13 CF
Aluminum tested at +85C	54 CF

10. 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

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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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. The adhesive and all materials should be at 60°F (16°C) or above to achieve highest bond strength.

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™ Acrylic Adhesives are designed to be used on painted/coated metals, bare metals, and most plastics. The following cleaning methods are suggested for common surfaces:

Nylon:

1. Wipe surface free of dust and dirt with clean cloth.
2. Flood bond surface with isopropyl alcohol and allow to sit 15 seconds.*****
3. Wipe surface to remove isopropyl alcohol and allow to flash dry before applying adhesive.*****
4. Repeat steps 2 and 3 for maximum adhesion.

Painted/coated metals:

1. Wipe surface free of dust and dirt with clean cloth and pure isopropyl alcohol.*****
2. Sandblast or lightly abrade using clean fine grit abrasives. Do not completely remove the paint layer or coating down to bare steel.
3. Wipe again with clean cloth and pure isopropyl alcohol to remove loose particles.*****

Bare metals:

1. Wipe surface free of dust and dirt with clean cloth and pure acetone.*****
2. Sandblast or lightly abrade using clean fine grit abrasives.
3. Wipe again with clean cloth and pure acetone to remove loose particles.*****

Other Plastics:

1. Wipe surface free of dust and dirt with clean cloth and pure isopropyl alcohol.*****
2. Lightly abrade using fine grit abrasives.
3. Wipe again with clean cloth and pure isopropyl alcohol to remove loose particles.*****

***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 80°F (27°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.

Shelf Life

This 3M™ Scotch-Weld™ Adhesive has a shelf life of 12 months from date of manufacture in unopened original containers kept at recommended storage conditions.

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Precautionary Information

Refer to Product Label and 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.

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

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Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

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ISO 9001

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