

# 3M

# Scotch-Weld™

## DP8910NS

Technical Data Sheet

Feb 2022

### Product Description

3M™ Scotch-Weld™ Nylon Bonder Structural Adhesive DP8910NS is a black, non-sag, two-part structural acrylic adhesive. 8910 creates a structural bond to nylon (polyamides) and other engineered plastics as well as aluminum and other metals without the need for extensive surface preparation such as plasma or flame treatment

### Features

- Excellent bond strength, durability, and environmental resistance on Nylon and metals
- Contains ceramic beads to control bond line thickness

**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)	60,000 – 120,000 cps @ 3.8 sec <sup>-1</sup>
	Accelerator (A)	5,000 – 20,000 @ 3.8 sec <sup>-1</sup>
Density <sup>1</sup>	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
		<b>Note:</b> Cure times are approximate and depend on adhesive temperature.
Work life <sup>2</sup>		10 minutes
Open time <sup>3</sup>		10 minutes
Time to handling strength <sup>4</sup>		15 - 20 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
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)<sup>5</sup>

Substrate	3M™ Scotch-Weld™
	DP8910NS
Nylon 6,6	1146 CF
Aluminum - etched	3825 CF

5. 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, unless noted. Substrates used were 1/16" thick metals and 1/4" thick plastics; failure modes:

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

#### Floating Roller Peel (lbs / inch width)<sup>6</sup>

Substrate	3M™ Scotch-Weld™
	DP8910NS
Aluminum - etched	40 CF

6. 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

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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.**

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### 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. Aggressively wipe surface in a single direction 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.**

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### 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.

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### 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.

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### Technical Information

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