



# Technical Data Sheet

## 3M™ Scotch-Weld™ Nylon Bonder Structural Adhesive DP8910NS



[Product Details](#)



[Regulatory Info/SDS](#)

### 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

### Product Features

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

### Technical Information Note

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

**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.

### Typical Uncured Physical Properties

Attribute Name	Temperature	Value
Mix Ratio by Weight (B:A)		10:1
Mix Ratio by Volume (B:A)		10:1
Base Color		Black
Accelerator Color		Grey
Base Resin		MMA / MAA
Base Net Weight		8.6 lbs/gal lb/gal
Accelerator Net Weight		8.9 lbs/gal lb/gal
Base Density		1.03 g/cm <sup>3</sup> <sup>1</sup>
Accelerator Density		1.07 g/cm <sup>3</sup> <sup>1</sup>
Base Viscosity	22 °C (72 °F)	60,000 - 120,000 cps @ 3.8 sec-1 cP <sup>2</sup>
Accelerator Viscosity	22 °C (72 °F)	5,000 - 20,000 @ 3.8 sec-1 cP <sup>2</sup>

<sup>1</sup> Density measured using pycnometer.

<sup>2</sup> Viscosity measured using cone-and-plate viscometer; reported viscosity at 4 sec<sup>-1</sup> shear rate.

### Typical Mixed Physical Properties

Attribute Name	Temperature	Value
Open Time		10 min <sup>1</sup>
Worklife		10 min <sup>2</sup>
Set Time (min)	22 °C (72 °F)	15 - 20 min <sup>3</sup>
Time to Handling Strength	22 °C (72 °F)	15 - 20 min
Time to Full Cure	22 °C (72 °F)	24 h
Viscosity		55,000 - 111,000 cps @ 3.8 sec-1 cP

<sup>1</sup> Max time allowed after applying adhesive to a substrate before bond must be closed and fixed. Cure times approximate and depend on adhesive temperature. Hotmelts: The approx. bonding range of a 1/8" bead of molten adhesive on a non-metallic surface.

<sup>2</sup> Maximum time that adhesive can remain in a static mixing nozzle and still be expelled without undue force on the applicator. Cure

times are approximate and depend on adhesive temperature.

<sup>3</sup> Minimum time required to achieve 50 psi of overlap shear strength. Cure times are approximate and depend on adhesive temperature.

### Typical Physical Properties

Attribute Name	Temperature	Value
Cured Color		Black
Mixed Color		Black
Flow Characteristics - Thickness	49 °C (120 °F)	the end user for suitability. mm <sup>1</sup>

<sup>1</sup> 1" x 1" x 1/8" specimen under 10 pounds compression for 24 hours.

### Typical Cured Characteristics

Attribute Name	Temperature	Value
Modulus	22 °C (72 °F)	110 ksi lb/in <sup>2</sup> <sup>1</sup>
Tensile Strain at Break		0.93 % <sup>2</sup>

<sup>1</sup> 1/8" thick Type I test specimens; samples pulled at 0.2 in/min. <br>ASTM D638  
2 week dwell at 23°C (72°F)

<sup>2</sup> 1/8" thick Type I test specimens; samples pulled at 0.2 in/min.

### Typical Performance Characteristics

#### Overlap Shear Strength

Temperature: 22 °C (72 °F)

Dwell Time: 7 d

Test Method: ASTM D1002

Substrate	Surface Prep	Value
Aluminum	MEK/Abrade/MEK	3,465 lb/in <sup>2</sup> <sup>1</sup>
Cold Rolled Steel	MEK/Abrade/MEK	2,172 lb/in <sup>2</sup> <sup>1</sup>
ABS	IPA Wipe/Abrade/IPA Wipe	635 lb/in <sup>2</sup> <sup>1</sup>
Polycarbonate (PC)	IPA Wipe/Abrade/IPA Wipe	131 lb/in <sup>2</sup> <sup>1</sup>
Acrylic (PMMA)	IPA Wipe/Abrade/IPA Wipe	786 lb/in <sup>2</sup> <sup>1</sup>
Fiber-Reinforced Plastic	IPA Wipe/Abrade/IPA Wipe	2,779 lb/in <sup>2</sup> <sup>1</sup>
Polyvinyl chloride (PVC)	IPA Wipe/Abrade/IPA Wipe	414 lb/in <sup>2</sup> <sup>1</sup>

<sup>1</sup> 1" wide 1/2" overlap samples, 1" x 4" substrates, bondline thickness 0.005-0.008in  
Separation rate 0.1in/min metal, 2in/min plastic, 20in/min rubber.  
Substrate thickness: steel 0.060in, other metal 0.05-0.064in, rubber 0.125in, plastic 0.125in  
Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

#### Bell Peel

Temperature: 22 °C (72 °F)

Test Method	Substrate	Value
ASTM D3167	Aluminum	36 lb/in width <sup>1</sup>
	Etched Aluminum	36 pounds / inch width lb/in width <sup>2</sup>

<sup>1</sup> 1/2 in. wide bonds. Jaw separation 6in/min. 0.025in thick substrate. 0.064in bondline

<sup>2</sup> 6 in/min, 1in wide, 1/16in thick  
Data from 3M™ EPX™ Applicator System with an EPX static mixer according to manufacturer's directions. Thorough hand-mixing will afford comparable results.  
Cohesive (CF), Adhesive (AF) and Substrate (SF) Failure

Attribute Name	Value
Long Term Temperature Resistance	93 °C (200 °F) <sup>1</sup>

<sup>1</sup> Maximum temperature where tape supports at least 250 g load per 0.5 in<sup>2</sup> in static shear for 10,000 minutes. (Represents continuous exposure for day or weeks).

Attribute Name	Value
Tensile Strength	2422 psi lb/in <sup>2</sup> <sup>1</sup>

<sup>1</sup> 1/8" thick Type I test specimens; samples pulled at 0.2 in/min.

Attribute Name	Value
Additional Test notes	Note: This adhesive also has relatively low adhesion to low surface energy plastics (such as polypropylene,

## Typical Environmental Performance

### Overlap Shear Strength

Substrate: Aluminum

Test Method: ASTM D1002

Dwell Time	Temperature	Environmental Condition	Value
30 min	200 °C (392 °F)		0.61 % <sup>1</sup>
1,000 h	-40 °C (-40 °F)		0.74 % <sup>1</sup>
1,000 h	22 °C (72 °F)	Salt water (5 wt% in water)	0.73 % <sup>1</sup>

<sup>1</sup> Performance % to control sample @RT, tested after 24hr dwell @RT.

Cured adhesives can handle short contact to most chemicals or env. cond. Avoid long exposure to:

Temp >100°F + water

Ketone-type solvents (acetone, MEK)

Gasoline and similar liquids

Substrate: Polyvinyl chloride (PVC)

Temperature: 49 °C (120 °F)

Dwell Time: 1,000 h

Attribute Name	Test Method	Value
Overlap Shear Strength	ASTM D1002	0.97 % <sup>1</sup>

<sup>1</sup> Performance % to control sample @RT, tested after 24hr dwell @RT.

Cured adhesives can handle short contact to most chemicals or env. cond. Avoid long exposure to:

Temp >100°F + water

Ketone-type solvents (acetone, MEK)

Gasoline and similar liquids

## Handling/Application Information

### 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. Nylon surfaces to be bonded must be thoroughly cleaned with isopropyl alcohol.

#### 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™ Acrylic Adhesives are designed to be used on painted/coated metals, most bare metals, and most plastics and composite materials. The following cleaning methods are suggested for common surfaces: 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.\* Plastics and composite materials: 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. To prepare nylon surfaces, flood the surfaces to be bonded with isopropyl alcohol, let sit for a few seconds, then wipe in a single direction with a clean cloth. Repeat this step. Allow the surfaces to completely dry before applying adhesive.

### **Storage and Shelf Life**

Store product at 80°F (27°C) or below. Do not freeze. Allow product to reach room temperature prior to use. Shelf life for cartridges and 5 gallon pails is 12 months from the date of manufacture. Shelf life for 55-gallon drums is 6 months from the date of manufacture.

### **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**

**Technical Information:** The technical information, guidance, and other statements contained in this document or otherwise provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any 3M or third party intellectual property rights is granted or implied with this information.

**Product Selection and Use:** 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. As a result, customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment and reviewing all applicable regulations and standards (e.g., OSHA, ANSI, etc.). Failure to properly evaluate, select, and use a 3M product and appropriate safety products, or to meet all applicable safety regulations, may result in injury, sickness, death, and/or harm to property.

**Warranty, Limited Remedy, and Disclaimer:** Unless a different warranty is specifically stated on the applicable 3M product packaging or product literature (in which case such warranty governs), 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ARISING OUT OF A COURSE OF DEALING, CUSTOM, OR USAGE OF TRADE. If a 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

**Limitation of Liability:** Except for the limited remedy stated above, and except to the extent prohibited by law, 3M will not be liable for any loss or damage arising from or related to the 3M product, whether direct, indirect, special, incidental, or consequential (including, but not limited to, lost profits or business opportunity), regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability.

**Disclaimer:** 3M industrial and occupational products are intended, labeled, and packaged for sale to trained industrial and occupational customers for workplace use. Unless specifically stated otherwise on the applicable product packaging or literature, these products are not intended, labeled, or packaged for sale to or use by consumers (e.g., for home, personal, primary or secondary school, recreational/sporting, or other uses not described in the applicable product packaging or literature), and must be selected and used in compliance with applicable health and safety regulations and standards (e.g., U.S. OSHA, ANSI), as well as all product literature, user instructions, warnings, and limitations, and the user must take any action required under any recall, field action or other product use notice. Misuse of 3M industrial and occupational products may result in injury, sickness, or death. For help with product selection and use, consult your on-site safety professional, industrial hygienist, or other subject matter expert. For additional product information, visit [www.3M.com](http://www.3M.com).

### **ISO Statement**

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

3M  
Industrial Adhesives and Tapes Division  
3M Center, Building 225-3S-06  
St. Paul, MN 55144-1000  
Phone 800-362-3550  
Fax 877-369-2923  
Web 3M.com

3M, Scotch-Weld and EPX are trademarks of 3M Company.  
© 3M 2021. All rights reserved.