English
Last Revision Date: May, 2022

Technical Data Sheet

3M™ Scotch-Weld™ Metal Bonder Acrylic Adhesive DP8407NS Gray

Product Description

3M™ Scotch-Weld™ Metal Bonder Acrylic Adhesive DP8407NS Gray is a high performance, two-part acrylic adhesive that offers excellent shear, peel, and impact performance. This toughened product provides excellent adhesion to many plastics and metals, including those with slightly oily surfaces. This special formulation provides outstanding durability on metal substrates (including bare steel, copper, brass, bronze, and galvanized steel), even when exposed to high temperature and humidity environments.

Product Features

- Excellent strength and durability on bare metals, plastics, and other materials
- Toughened
- Outstanding peel and impact strength
- 10:1 mix ratio
- Increased cure speed with applied heat
- Contain glass beads (0.010" diameter) to control bond line thickness

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

Technical Information Note

The following technical information and data should be considered representative or typical only and should not be used for specification purposes. This adhesive has relatively low adhesion to low surface energy plastics (such as polypropylene, polyethylene, TPO, acetal, and PTFE). Applications involving any of these materials should be carefully evaluated by the end user for suitability.

Typical Mixed Physical Properties

Property	Values	Additional Information
Open Time	7 min	View

Notes: POR=Pop Off Rubber

Time to Structural Strength	28 to 32 min	View

Notes: Minimum time required to achieve 1,000 psi of overlap shear strength. Cure times are approximate and depend on adhesive temperature.

Density (mixed)	0.99 g/cm³	

Worklife	5 to 7 min	View

Notes: 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.

Set Time (min)	22 to 26 min	View

Temp C: 23C
Temp F: 73F

Notes: Minimum time required to achieve 50 psi of overlap shear strength. Cure times are approximate and depend on adhesive temperature.

Time to Full Cure	1 day	

Typical Physical Properties

Property	Values	Additional Information
Color	Gray	View

Test Name: Mixed

Color	Gray	View

Test Name: Cured

Typical Uncured Physical Properties

Property	Values	Additional Information
Base Color	Brown	
Accelerator Color	Dark Gray	
Base Density	0.98 g/cm³	View

Notes: Density measured using pycnometer.

Accelerator Density	1.08 g/cm³	View

Notes: Density measured using pycnometer.

Viscosity	20000 cP	
Base Viscosity	15000 cP	View

Notes: Viscosity measured using cone-and-plate viscometer; reported viscosity at 3.8 sec^-1 shear rate.

Accelerator Viscosity	50000 cP	View

Notes: Viscosity measured using cone-and-plate viscometer; reported viscosity at 3.8 sec^-1 shear rate.

Mix Ratio by Volume (B:A)	0.417361111	

Mix Ratio by Weight (B:A)	0.375694444

Typical Performance Characteristics

Additional Test notes

This adhesive has relatively low adhesion to low surface energy plastics (such as polypropylene, polyethylene, TPO, acetal, and PTFE). Applications involving any of these materials should be carefully evaluated by the end user for suitability.

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.

Property	Values	Additional Information
Environmental Resistance 30min 200C Aluminum	90 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 30.0
Dwell Time Units: min
Temp C: 200C
Temp F: 392F
Substrate: Aluminum

Notes: 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

Environmental Resistance 49C 100%RH Aluminum	85 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 49C
Temp F: 120F
Environmental Condition: 100%RH
Substrate: Aluminum

Notes: 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

Environmental Resistance 32C 100%RH Aluminum	90 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 32C
Temp F: 90F
Environmental Condition: 100%RH
Substrate: Aluminum

Notes: 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

Environmental Resistance 66C 80%RH Aluminum	85 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr

Temp C: 66C
Temp F: 150F
Environmental Condition: 80%RH
Substrate: Aluminum

Notes: 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

Environmental Resistance -40°C (-40°F) Aluminum	100 %	View

Test Name: Overlap Shear Strength

Notes: 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

Environmental Resistance 149C Aluminum	100 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 149C
Temp F: 300F
Substrate: Aluminum

Notes: 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

Environmental Resistance 49C 80%RH Aluminum	100 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 49C
Temp F: 120F
Environmental Condition: 80%RH
Substrate: Aluminum

Notes: 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

Environmental Resistance 85°C (185°F) 85%RH Aluminum	85 %	View

Test Name: Overlap Shear Strength

Notes: 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

Environmental Resistance 100%RH Aluminum	95 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: 100%RH
Substrate: Aluminum

Notes: 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

Environmental Resistance 23°C (72°F) Salt water (5 wt% in water) Aluminum	95 %	View

Test Name: Overlap Shear Strength

Notes: 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

Environmental Resistance Gasoline Aluminum	70 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: Gasoline
Substrate: Aluminum

Notes: 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

Environmental Resistance Diesel Fuel Aluminum	100 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: Diesel Fuel
Substrate: Aluminum

Notes: 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

Environmental Resistance Motor Oil Aluminum	100 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: Oil 10W30
Substrate: Aluminum

Notes: 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

Environmental Resistance Antifreeze (50 wt% in water) Aluminum	100 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: Antifreeze (50 wt% in water)
Substrate: Aluminum

Notes: 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

Environmental Resistance Isopropyl Alcohol (IPA) Aluminum	75 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength

Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: Isopropyl Alcohol (IPA)
Substrate: Aluminum

Notes: 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

Environmental Resistance Bleach (10 wt% in water) Aluminum	95 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: Bleach (10 wt% in water)
Substrate: Aluminum

Notes: 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

Environmental Resistance -40C Polyvinyl chloride (PVC)	100 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: -40C
Temp F: -40F
Substrate: Polyvinyl chloride (PVC)

Notes: 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

Environmental Resistance 49C Polyvinyl chloride (PVC)	95 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 49C
Temp F: 120F
Substrate: Polyvinyl chloride (PVC)

Notes: 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

Environmental Resistance 66C Polyvinyl chloride (PVC)	95 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 66C
Temp F: 150F
Substrate: Polyvinyl chloride (PVC)

Notes: 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

Environmental Resistance 100%RH Polyvinyl chloride (PVC)	100 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: 100%RH
Substrate: Polyvinyl chloride (PVC)

Notes: 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

Environmental Resistance Salt water (5 wt% in water) Polyvinyl chloride (PVC)	95 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: Salt water (5 wt% in water)
Substrate: Polyvinyl chloride (PVC)

Notes: 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

Environmental Resistance Hydrochloric acid (16 wt% in water) Polyvinyl chloride (PVC)	100 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: Hydrochloric acid (16 wt% in water)
Substrate: Polyvinyl chloride (PVC)

Notes: 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

Environmental Resistance Sodium hydroxide (10 wt% in water) Polyvinyl chloride (PVC)	95 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 72F
Environmental Condition: Sodium hydroxide (10 wt% in water)
Substrate: Polyvinyl chloride (PVC)

Notes: 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

Environmental Resistance 85C 85%RH Polyvinyl chloride (PVC)	85 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 85C
Temp F: 185F
Environmental Condition: 85%RH
Substrate: Polyvinyl chloride (PVC)

Notes: 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

Bell Peel 23°C (72°F) Aluminum	50 lb/in width	View

Substrate: Etched Aluminum
Failure Mode: CF

Notes: 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), Adesive (AF) and Substrate (SF) Failure

Environmental Resistance 149C Cold Rolled Steel	100 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 149C
Temp F: 300F
Substrate: Cold Rolled Steel

Notes: 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

Environmental Resistance 49C 80%RH Cold Rolled Steel	95 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 49C
Temp F: 120F
Environmental Condition: 80%RH
Substrate: Cold Rolled Steel

Notes: 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

Environmental Resistance 85C 85%RH Cold Rolled Steel	65 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 85C
Temp F: 185F
Environmental Condition: 85%RH
Substrate: Cold Rolled Steel

Notes: 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

Environmental Resistance 49C Water Cold Rolled Steel	75 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 1000.0
Dwell Time Units: hr
Temp C: 49C
Temp F: 120F
Environmental Condition: Water
Substrate: Cold Rolled Steel

Notes: 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

Environmental Resistance 30min 200C Cold Rolled Steel	90 %	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 30.0
Dwell Time Units: min
Temp C: 200C
Temp F: 392F
Substrate: Cold Rolled Steel

Notes: 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

Typical Cured Characteristics

Property	Values	Additional Information
Modulus	170000 lb/in²	View

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

Tensile Strength	2400 lb/in²	View

Notes: 1/8" thick Type I test specimens; samples pulled at 0.2 in/min.

Tensile Strain at Break	10 %	View

Notes: 1/8" thick Type I test specimens; samples pulled at 0.2 in/min.

Overlap Shear Strength 24hour Aluminum	4,500 CF lb/in²	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: Aluminum
Surface Preparation: Light Abrasion and Solvent Clean

Notes: 1min open time, 1/2in overlap, 0.010in bond line thickness, separation rate 0.1 in/min metals, 2 in/min plastics, abraded and solvent wiped substrates, 1/16in metals, 1/8in plastics Cohesive (CF), Adhesive (AF), and Substrate (SF) Failure

Overlap Shear Strength 24hour Stainless Steel	3,800 CF lb/in²	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: Stainless Steel
Surface Preparation: Light Abrasion and Solvent Clean

Notes: 1min open time, 1/2in overlap, 0.010in bond line thickness, separation rate 0.1 in/min metals, 2 in/min plastics, abraded and solvent wiped substrates, 1/16in metals, 1/8in plastics Cohesive (CF), Adhesive (AF), and Substrate (SF) Failure

Overlap Shear Strength 24hour Cold Rolled Steel	3,500 CF lb/in²	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength

Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: Cold Rolled Steel
Surface Preparation: Light Abrasion and Solvent Clean

Notes: 1min open time, 1/2in overlap, 0.010in bond line thickness, separation rate 0.1 in/min metals, 2 in/min plastics, abraded and solvent wiped substrates, 1/16in metals, 1/8in plastics Cohesive (CF), Adhesive (AF), and Substrate (SF) Failure

Overlap Shear Strength 24hour Galvanized Steel	3,400 CF lb/in²	View

Test Method: ASTM D1002
Test Name: Overlap Shear Strength
Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: Galvanized Steel
Surface Preparation: Light Abrasion and Solvent Clean

Notes: 1min open time, 1/2in overlap, 0.010in bond line thickness, separation rate 0.1 in/min metals, 2 in/min plastics, abraded and solvent wiped substrates, 1/16in metals, 1/8in plastics Cohesive (CF), Adhesive (AF), and Substrate (SF) Failure

Overlap Shear Strength 24hour Copper	1,900 AF lb/in²	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: Copper
Surface Preparation: Light Abrasion and Solvent Clean

Notes: 1min open time, 1/2in overlap, 0.010in bond line thickness, separation rate 0.1 in/min metals, 2 in/min plastics, abraded and solvent wiped substrates, 1/16in metals, 1/8in plastics Cohesive (CF), Adhesive (AF), and Substrate (SF) Failure

Overlap Shear Strength 24hour Brass	1,700 AF lb/in²	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: Brass
Surface Preparation: Light Abrasion and Solvent Clean

Notes: 1min open time, 1/2in overlap, 0.010in bond line thickness, separation rate 0.1 in/min metals, 2 in/min plastics, abraded and solvent wiped substrates, 1/16in metals, 1/8in plastics Cohesive (CF), Adhesive (AF), and Substrate (SF) Failure

Overlap Shear Strength 24hour PVC	1,900 SF lb/in²	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: Polyvinyl chloride (PVC)
Surface Preparation: Light Abrasion and Solvent Clean

Notes: 1min open time, 1/2in overlap, 0.010in bond line thickness, separation rate 0.1 in/min metals, 2 in/min plastics, abraded and solvent wiped substrates, 1/16in metals, 1/8in plastics Cohesive (CF), Adhesive (AF), and Substrate (SF) Failure

Overlap Shear Strength 24hour ABS	1,000 SF lb/in²	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: ABS
Surface Preparation: Light Abrasion and Solvent Clean

Notes: 1min open time, 1/2in overlap, 0.010in bond line thickness, separation rate 0.1 in/min metals, 2 in/min plastics, abraded and solvent wiped substrates, 1/16in metals, 1/8in plastics Cohesive (CF), Adhesive (AF), and Substrate (SF) Failure

Overlap Shear Strength 24hour Acrylic	1,600 SF lb/in²	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: Acrylic (PMMA)
Surface Preparation: Light Abrasion and Solvent Clean

Notes: 1min open time, 1/2in overlap, 0.010in bond line thickness, separation rate 0.1 in/min metals, 2 in/min plastics, abraded and solvent wiped substrates, 1/16in metals, 1/8in plastics Cohesive (CF), Adhesive (AF), and Substrate (SF) Failure

Overlap Shear Strength 24hour Polycarbonate	1,100 SF lb/in²	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: Polycarbonate (PC)
Surface Preparation: Light Abrasion and Solvent Clean

Notes: ½" overlap; samples pulled at 0.1 in/min for metals and 2 in/min for plastics; all surfaces prepared with light abrasion and solvent clean; 0.005in bondline AF: Adhesive Failure CF: Cohesive Failure MF: Mixed failure modes

Overlap Shear Strength 24hour Polystyrene	450 SF lb/in²	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: Polystyrene
Surface Preparation: Light Abrasion and Solvent Clean

Notes: 1min open time, 1/2in overlap, 0.010in bond line thickness, separation rate 0.1 in/min metals, 2 in/min plastics, abraded and solvent wiped substrates, 1/16in metals, 1/8in plastics Cohesive (CF), Adhesive (AF), and Substrate (SF) Failure

Overlap Shear Strength 24hour Polyester (FIbre-Reinforced)	1,300 SF lb/in²	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F

Environmental Condition: 50%RH
Substrate: Polyester (PET)
Surface Preparation: Light Abrasion and Solvent Clean

Notes: 1min open time, 1/2in overlap, 0.010in bond line thickness, separation rate 0.1 in/min metals, 2 in/min plastics, abraded and solvent wiped substrates, 1/16in metals, 1/8in plastics Cohesive (CF), Adhesive (AF), and Substrate (SF) Failure

Overlap Shear Strength 24hour Epoxy Resin (Fibre Reinforced)	4,100 SF lb/in²	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: Epoxy Resin (Fibre Reinforced)
Surface Preparation: Light Abrasion and Solvent Clean

Notes: 1min open time, 1/2in overlap, 0.010in bond line thickness, separation rate 0.1 in/min metals, 2 in/min plastics, abraded and solvent wiped substrates, 1/16in metals, 1/8in plastics Cohesive (CF), Adhesive (AF), and Substrate (SF) Failure

Overlap Shear Strength 24hour Aluminum (Tested at -40°C/F)	3,400 CF lb/in²	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: Aluminum
Surface Preparation: Light Abrasion and Solvent Clean

Notes: 1min open time, 1/2in overlap, 0.010in bond line thickness, separation rate 0.1 in/min metals, 2 in/min plastics, abraded and solvent wiped substrates, 1/16in metals, 1/8in plastics Cohesive (CF), Adhesive (AF), and Substrate (SF) Failure

Overlap Shear Strength 24hour Aluminum (Tested at 82°C/180°F)	1,400 CF lb/in²	View

Test Method: ASTM D1002

Test Name: Overlap Shear Strength
Dwell/Cure Time: 24.0
Dwell Time Units: hr
Temp C: 23C
Temp F: 73F
Environmental Condition: 50%RH
Substrate: Aluminum
Surface Preparation: Light Abrasion and Solvent Clean

Notes: 1min open time, 1/2in overlap, 0.010in bond line thickness, separation rate 0.1 in/min metals, 2 in/min plastics, abraded and solvent wiped substrates, 1/16in metals, 1/8in plastics Cohesive (CF), Adhesive (AF), and Substrate (SF) Failure

Storage and Shelf Life

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

Industry Specifications

EN 45545 test report for details (ISO 5659-2, ISO 5660-1, ISO 5658-2)

Bottom Matter

3M

Industrial Adhesives and Tapes Division
3M Center, Building 225-3S-06
St. Paul, MN 55144-1000
800-362-3550

Trademarks

3M, Scotch-Weld and EPX are trademarks of 3M Company.

Automotive Disclaimer

Automotive Applications: This product is an industrial product and has not been designed or tested for use in certain automotive applications, including, but not limited to, automotive electric powertrain battery or high voltage applications. This product does not fully adhere to typical automotive design or quality system requirements, such as IATF 16949 or VDA 6.3. This product may not be manufactured in an IATF certified facility and may not meet a Ppk of 1.33 for all properties. The product may not undergo an automotive production part approval process (PPAP). Customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's automotive application and for conducting incoming inspections before use of the product. Failure to do so may result in injury, death, and/or harm to property. No written or verbal statement, report, data or recommendation by 3M related to automotive use of the product shall have any force or effect unless in an agreement signed by the Technical Director of 3M's Automotive Division. Customer assumes all responsibility and risk if customer chooses to use this product in an automotive electric powertrain battery or high voltage application, and 3M will not be liable for any loss or damage arising from or related to the 3M product or customer's use of the product, whether direct, indirect, special, incidental, or consequential (including, but not limited to, lost profits or business opportunity or recall costs), regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability. In no event shall 3M be liable for any damages in excess of the purchase price paid for the product.
NOTWITHSTANDING ANY OTHER STATEMENT TO THE CONTRARY, 3M MAKES NO REPRESENTATIONS, WARRANTIES OR CONDITIONS WHATSOEVER, EXPRESS OR IMPLIED, REGARDING THE PRODUCT IF USED IN AN AUTOMOTIVE ELECTRIC POWERTRAIN BATTERY OR HIGH VOLTAGE APPLICATION, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY ON PERFORMANCE, LONGEVITY, SUITABILITY, COMPATIBILITY, OR INTEROPERABILITY, OR 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.

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.

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.

Mixing 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™ Metal Bonder Acrylic Adhesives are designed to be used on painted or coated metals, most plastics, and some bare metals.

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.*

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:

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.

References

Property	Values
3m.com Product Page	https://www.3m.com/3M/en_US/p/d/b40066515/
Safety Data Sheet SDS	https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=DP8407NS Gray

Family Group

Link Tags:

DP8407NS Gray

Products	Time to Structural Strength	Color	Worklife	Set Time (min)	Modulus	Tensile Strength
DP8407NS Gray	28 to 32 min	Gray	5 to 7 min	22 to 26 min	170000 lb/in²	2400 lb/in²

ISO Statement

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

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.