February, 2019

3M™ Scotch-Weld™ Epoxy Adhesive DP100 Clear

Product Description

3M™ Scotch-Weld™ Epoxy Adhesive DP100 is a two-part adhesive offering fast cure and machinability. Available in larger containers as 3M™ Scotch-Weld™ Epoxy Adhesives 100 B/A or 100 NS B/A.

Product Features

- Easy mixing
- High Flow
- Fast Cure
- Meets UL 94 HB

Technical Information Note

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

Typical Uncured Physical Properties

Property	Values	Notes	Method	Temp C	Temp F
Color	Clear	Colors may vary from nearly white to yellow/amber. Adhesive performance is not affected by color variation.			
Base Viscosity	8,000-15,000 cP	Procedure involves Brookfield RVF, #6 spindle, 20 rpm. Measurement taken after 1 minute.	3M C1d	27C	80F
Accelerator Viscosity	9,000-16,000 cP	Procedure involves Brookfield RVF, #6 spindle, 20 rpm. Measurement taken after 1 minute.	3M C1d	27C	80F
Base Resin	Epoxy				
Base Net Weight	9.5 to 9.9 lb/gal				
Accelerator Net Weight	9.2 to 9.6 lb/gal				
Mix Ratio by Volume (B:A)	01:01:00				
Mix Ratio by Weight (B:A)	00:01:00.980000				

Typical Mixed Physical Properties

Property	Values	Method	Temp C	Temp F	Notes	Test Name	Dwell/Cure Time	Dwell Time Units	Substrate	Substrate Notes
Worklife, 10g mixed	5 min	3M C548	23C	73F	Procedure involves periodically measuring a 10 gram mixed mass for spreading and wetting properties. This time approximates the usable worklife in an EPX applicator nozzle.					

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Typical Mixed Physical Properties (continued)

Property	Values	Method	Temp C	Temp F	Notes	Test Name	Dwell/Cure Time	Dwell Time Units	Substrate	Substrate Notes
Open Time	5 min				Maximum time allowed after applying adhesive to one substrate before bond must be closed and fixed in place. Cure times are approximate and depend on adhesive temperature. For hotmelts: The approximate bonding range of a 1/8" bead of molten adhesive on a non-metallic surface.					
Time to Handling Strength	15 to 20 min		23C	73F	Minimum time required to achieve 50 psi of overlap shear strength. Cure times are approximate and depend on adhesive temperature.					
Time to Full Cure	24 to 48 hr		23C	73F						
Time to Full Cure	24 to 48 hr		23C	73F	The cure time is defined as that time required for the adhesive to achieve a minimum of 80% of the ultimate strength as measured by aluminum-aluminum OLS.					
Rate of Strength Buildup 20min	400 lb/in²	ASTM D1002	23C	72F	Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in.; other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)	Overlap Shear Strength	20	min	Aluminum	7mil bondline

Table continued on next page

Typical Mixed Physical Properties (continued)

Property	Values	Method	Temp C	Temp F	Notes	Test Name	Dwell/Cure Time	Dwell Time Units	Substrate	Substrate Notes
Rate of Strength Buildup	0 lb/in²	ASTM D1002	23C	72F	Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in.; other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)	Overlap Shear Strength	10	min	Aluminum	7mil bondline

Typical Physical Properties

Color: Clear

Conditions
Test Name: Cured

Typical Cured Characteristics

Property	Values	Method	Temp C	Temp F	Notes	Test Condition
Shore D Hardness	82	ASTM D2240	23C	73F		
Weight Loss by Thermal Gravimetric Analysis (TGA)	585°F(307°C)	ASTM E1131			Weight loss by Thermal Gravimetric Analysis reported as that temperature at which 5% weight loss occurs by TGA in air at 5°C (9°F) rise per minute.	
Compression Strength	8400 lb/in²	ASTM D695				Room Temperature

Typical Performance Characteristics

Property	Values	Method	Test Name	Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Conditions	Substrate	Substrate Notes	Surface Preparation	Notes
Overlap Shear Strength 7day Aluminum	950 lb/in²	ASTM D1002	Overlap Shear Strength	7	day	23C	73F	50%RH	Aluminum	0.005-0.008 in bondline	MEK/Abrade/MEK	Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in.; other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)
Overlap Shear Strength 7day Cold Rolled Steel	1000 lb/in²	ASTM D1002	Overlap Shear Strength	7	day	23C	73F	50%RH	Cold Rolled Steel	0.005-0.008 in bondline	MEK/Abrade/MEK	Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in.; other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

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Typical Performance Characteristics (continued)

Property	Values	Method	Test Name	Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Conditions	Substrate	Substrate Notes	Surface Preparation	Notes
Overlap Shear Strength 7day Copper	950 lb/in²	ASTM D1002	Overlap Shear Strength	7	day	23C	73F	50%RH	Copper	0.005-0.008 in bondline	MEK/Aluminum Oxide Abrasive	Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in.; other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)
Overlap Shear Strength 7day Brass	700 lb/in²	ASTM D1002	Overlap Shear Strength	7	day	23C	73F	50%RH	Brass	0.005-0.008 in bondline	MEK/Aluminum Oxide Abrasive	Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in.; other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

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Typical Performance Characteristics (continued)

Property	Values	Method	Test Name	Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Conditions	Substrate	Substrate Notes	Surface Preparation	Notes
Overlap Shear Strength 7day Stainless Steel	750 lb/in²	ASTM D1002	Overlap Shear Strength	7	day	23C	73F	50%RH	Stainless Steel	0.005-0.008 in bondline	MEK/Abrade/MEK	Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in.; other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)
Overlap Shear Strength 7day ABS	490 lb/in²	ASTM D1002	Overlap Shear Strength	7	day	23C	73F	50%RH	ABS	0.005-0.008 in bondline	IPA Wipe/Abrade/IPA Wipe	Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in.; other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

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Typical Performance Characteristics (continued)

Property	Values	Method	Test Name	Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Conditions	Substrate	Substrate Notes	Surface Preparation	Notes
Overlap Shear Strength 7day Polyvinyl chloride (PVC)	330 lb/in²	ASTM D1002	Overlap Shear Strength	7	day	23C	73F	50%RH	Polyvinyl chloride (PVC)	0.005-0.008in bondline	IPA Wipe/Abrade/IPA Wipe	Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 lap overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in.; other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)
Overlap Shear Strength 7day Polycarbonate (PC)	250 lb/in²	ASTM D1002	Overlap Shear Strength	7	day	23C	73F	50%RH	Polycarbonate (PC)	0.005-0.008in bondline	IPA Wipe/Abrade/IPA Wipe	Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 lap overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in.; other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)

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Typical Performance Characteristics (continued)

Property	Values	Method	Test Name	Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate	Substrate Notes	Surface Preparation	Notes
Overlap Shear Strength 7day Acrylic (PMMA)	100 lb/in²	ASTM D1002	Overlap Shear Strength	7	day	23C	73F	50%RH	Acrylic (PMMA)	0.005-0.008in bondline		Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in.; other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)
Overlap Shear Strength 7day Fiber-Reinforced Plastic	950 lb/in²	ASTM D1002	Overlap Shear Strength	7	day	23C	73F	50%RH	Fiber-Reinforced Plastic	0.005-0.008in bondline	IPA Wipe/Abrade/IPA Wipe	Overlap shear (OLS) strengths were measured on 1 in. wide 1/2 in. overlap specimens. These bonds were made individually using 1 in. x 4 in. pieces of substrate except for aluminum. Two panels 0.063 in. thick, 4 in. x 7 in. of 2024T-3 clad aluminum were bonded and cut into 1 in. wide samples after 24 hour. The separation rate of the testing jaws was 0.1 in. per minute for metals, 2 in. per minute for plastics and 20 in. per minute for rubbers. The thickness of the substrates were: steel, 0.060 in.; other metals, 0.05-0.064 in.; rubbers, 0.125 in.; plastics, 0.125 in. Cohesive Failure (CF), Adhesive Failure (AF), Substrate Failure (SF)
Solvent Resistance Acetone 1hr	A			24hr @ RT + 2hr @ 160F(71C)				Acetone 1hr				Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n the test solvent for 1 hour and 1 month. After the allotted period of time, the sample was removed and visually examined for surface attack as compared to the control. Key: A - Unaffected - no change to color or surface texture. B - Slight attack - noticeable swelling of surface. C - Moderate/severe attack - extreme swelling of surface.

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Typical Performance Characteristics (continued)

Property	Values	Method	Test Name	Dwell/Cure Time	Dwell Cure Time Units	Temp C	Temp F	Environmental Conditions	Substrate	Substrate Notes	Surface Preparation	Notes
Solvent Resistance Acetone 1month	A			24hr @ RT + 2hr @ 160F(71C)				Acetone 1month				Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n the test solvent for 1 hour and 1 month. After the allotted period of time, the sample was removed and visually examined for surface attack as compared to the control. Key: A - Unaffected - no change to color or surface texture. B - Slight attack - noticeable swelling of surface. C - Moderate/severe attack - extreme swelling of surface.
Solvent Resistance Isopropyl Alcohol 1hr	A			24hr @ RT + 2hr @ 160F(71C)				Isopropyl Alcohol 1hr				Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n the test solvent for 1 hour and 1 month. After the allotted period of time, the sample was removed and visually examined for surface attack as compared to the control. Key: A - Unaffected - no change to color or surface texture. B - Slight attack - noticeable swelling of surface. C - Moderate/severe attack - extreme swelling of surface.
Solvent Resistance Isopropyl Alcohol 1month	B			24hr @ RT + 2hr @ 160F(71C)				Isopropyl Alcohol 1month				Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n the test solvent for 1 hour and 1 month. After the allotted period of time, the sample was removed and visually examined for surface attack as compared to the control. Key: A - Unaffected - no change to color or surface texture. B - Slight attack - noticeable swelling of surface. C - Moderate/severe attack - extreme swelling of surface.

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Typical Performance Characteristics (continued)

Property	Values	Method	Test Name	Dwell/Cure Time	Dwell Cure Time Units	Temp C	Temp F	Environmental Conditions	Substrate	Substrate Notes	Surface Preparation	Notes
Solvent Resistance Freon TF 1hr	A			24hr @ RT + 2hr @ 160F(71C)				Freon TF 1hr				Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n the test solvent for 1 hour and 1 month. After the allotted period of time, the sample was removed and visually examined for surface attack as compared to the control. Key: A - Unaffected - no change to color or surface texture. B - Slight attack - noticeable swelling of surface. C - Moderate/severe attack - extreme swelling of surface.
Solvent Resistance Freon TF 1month	A			24hr @ RT + 2hr @ 160F(71C)				Freon TF 1month				Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n the test solvent for 1 hour and 1 month. After the allotted period of time, the sample was removed and visually examined for surface attack as compared to the control. Key: A - Unaffected - no change to color or surface texture. B - Slight attack - noticeable swelling of surface. C - Moderate/severe attack - extreme swelling of surface.
Solvent Resistance Freon TMC 1hr	A			24hr @ RT + 2hr @ 160F(71C)				Freon TMC 1hr				Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n the test solvent for 1 hour and 1 month. After the allotted period of time, the sample was removed and visually examined for surface attack as compared to the control. Key: A - Unaffected - no change to color or surface texture. B - Slight attack - noticeable swelling of surface. C - Moderate/severe attack - extreme swelling of surface.

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Typical Performance Characteristics (continued)

Property	Values	Method	Test Name	Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate	Substrate Notes	Surface Preparation	Notes
Solvent Resistance Freon TMC 1month	A			24hr @ RT + 2hr @ 160F(71C)				Freon TMC 1month				Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n the test solvent for 1 hour and 1 month. After the allotted period of time, the sample was removed and visually examined for surface attack as compared to the control. Key: A - Unaffected - no change to color or surface texture. B - Slight attack - noticeable swelling of surface. C - Moderate/severe attack - extreme swelling of surface.
Solvent Resistance 1, 1, 1 - Trichloroethane 1hour	A			24hr @ RT + 2hr @ 160F(71C)				1, 1, 1 - Trichloroethane 1hour				Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n the test solvent for 1 hour and 1 month. After the allotted period of time, the sample was removed and visually examined for surface attack as compared to the control. Key: A - Unaffected - no change to color or surface texture. B - Slight attack - noticeable swelling of surface. C - Moderate/severe attack - extreme swelling of surface.
Solvent Resistance 1, 1, 1 - Trichloroethane 1month	B			24hr @ RT + 2hr @ 160F(71C)				1, 1, 1 - Trichloroethane 1month				Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n the test solvent for 1 hour and 1 month. After the allotted period of time, the sample was removed and visually examined for surface attack as compared to the control. Key: A - Unaffected - no change to color or surface texture. B - Slight attack - noticeable swelling of surface. C - Moderate/severe attack - extreme swelling of surface.

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Typical Performance Characteristics (continued)

Property	Values	Method	Test Name	Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Conditions	Substrate	Substrate Notes	Surface Preparation	Notes
Solvent Resistance RMA Flux 1hr	A			24hr @ RT + 2hr @ 160F(71C)				RMA Flux 1hr				Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n the test solvent for 1 hour and 1 month. After the allotted period of time, the sample was removed and visually examined for surface attack as compared to the control. Key: A - Unaffected - no change to color or surface texture. B - Slight attack - noticeable swelling of surface. C - Moderate/severe attack - extreme swelling of surface.
Solvent Resistance RMA Flux 1month	A			24hr @ RT + 2hr @ 160F(71C)				RMA Flux 1month				Solvent resistance was determined using cured samples (1/2 in. x 4 in. x 1/8 in. thickness) immersed n the test solvent for 1 hour and 1 month. After the allotted period of time, the sample was removed and visually examined for surface attack as compared to the control. Key: A - Unaffected - no change to color or surface texture. B - Slight attack - noticeable swelling of surface. C - Moderate/severe attack - extreme swelling of surface.
Overlap Shear Strength 7day Galvanized Steel	900 lb/in²	ASTM D1002	Overlap Shear Strength	7	day	23C	73F	50%RH	Galvanized Steel	0.010" bondline	MEK/Abrade/MEK	Al-to-Al 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; substrates used were 1/16” thick aluminum and 1/8” thick plastics; composites varied. SF: Substrate Failure AF: Adhesive Failure CF: Cohesive Failure MF: Mixed failure modes
T-Peel Adhesion 7day 23C Aluminum	2 lb/in width	ASTM D1876	T-Peel Adhesion	7	day	23C	73F		Aluminum	0.032in thick; 17 - 20 mil bondline		Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. T-peel strengths were measured on 1 in. wide bonds. The testing jaw separation rate was 20 inches per minute.

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Typical Performance Characteristics (continued)

Property	Values	Method	Test Name	Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Conditions	Substrate	Substrate Notes	Surface Preparation	Notes
T-Peel Adhesion 7day 23C Aluminum	2 lb/in width	ASTM D1876	T-Peel Adhesion	7	day	23C	73F		Aluminum	0.032in thick; 5 - 8 mil bondline		Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. T-peel strengths were measured on 1 in. wide bonds. The testing jaw separation rate was 20 inches per minute.
T-Peel Adhesion 7day 23C Cold Rolled Steel	2 lb/in width	ASTM D1876	T-Peel Adhesion	7	day	23C	73F		Cold Rolled Steel	0.032in thick; 17 - 20 mil bondline	MEK/Abrade/MEK	Note: The following product performance data was obtained in the 3M laboratory under the conditions specified. The following data shows typical results obtained with 3M™ Scotch-Weld™ Epoxy Adhesives DP100 and DP100 NS when applied to properly prepared substrates, and tested according to the test methods indicated. T-peel strengths were measured on 1 in. wide bonds. The testing jaw separation rate was 20 inches per minute.

Electrical and Thermal Properties

Property	Values		Test Condition	Notes	Method	Temp C	Temp F
Glass Transition Temperature (Tg)	33 °C	91 °F	Mid-Point	Glass Transition Temperature (Tg) determined using DSC Analyzer with a heating rate of 68°F (20°C) per minute. Second heat values given.			
Volume Resistivity	3.5 × 10^12 Ω-cm				ASTM D257	23C	73F
Coefficient of Thermal Expansion	60 × 10^-6 m/m/°C		-40°C to 20°C (-38°F to 68°F)	Coefficient of thermal expansion determined using DuPont (TMA) using a heating rate of 10°C (50°F) per minute. Second heat values given.			

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Electrical and Thermal Properties (continued)

Property	Values		Test Condition	Notes	Method	Temp C	Temp F
Coefficient of Thermal Expansion	209 x 10^-6 m/m/°C		60°C to 120°C (140°F to 248°F)	Coefficient of thermal expansion determined using DuPont (TMA) using a heating rate of 10°C (50°F) per minute. Second heat values given.			

Handling/Application Information

Application Equipment

For small or intermittent applications the 3M™ Scotch-Weld™ EPX™ applicator is a convenient method of application.
For larger applications these adhesives may be applied by use of flow equipment. Two-part meter/mixing/dispensing equipment is available for intermittent or production line use. These systems may be desirable because of their variable shot size and flow rate characteristics and are adaptable to many applications.

Directions for Use

1. For optimum strength structural bonds, paint, oxide films, oils, dust, mold release agents and all other surface contaminants must be completely removed. However, the amount of surface preparation directly depends on the required bond strength and the environmental aging resistance desired by user. For specific surface preparations on common substrates, see the following section on Surface Preparation.
2. Use gloves to minimize skin contact with adhesive.
3. These products consist of two parts.
Mixing and Applying
For Duo-Pak Cartridges - 48.5 ml
3M™ Scotch-Weld™ DP100 and DP100 NS Adhesives are suppled in a dual syringe plastic Duo-Pak cartridge as part of the 3M™ Scotch-Weld™ EPX™ Applicator system. To use, simply insert the Duo-Pak cartridge into the EPX applicator and start the plunger into the cylinders using light pressure on the trigger. Next, remove the Duo-Pak cartridge cap and expel a small amount of adhesive to be sure both sides of the Duo-Pak cartridge are flowing evenly and freely. If mixing of Part A and Part B is desired, attach the EPX mixing nozzle to the Duo-Pak cartridge and begin dispensing the adhesive. For hand mixing, expel the desired amount of adhesive and mix thoroughly. Mix approximately 15 seconds after uniform color is obtained.
For Duo-Pak Cartridges - 200/400 ml
Directions for Use: While holding cartridge in an upright position, remove insert from Duo-Pak cartridge by unscrewing plastic nut. Detach metal removal disc from insert to free plastic nut for nozzle attachment. Clear orifices if necessary. Attach mixing nozzle and secure with plastic nut. Place cartridge into EPX Applicator. Dispense a small quantity of adhesive to assure both components are dispensing equally. Apply adhesive to clean surfaces, join parts, secure until set up (20 minutes @ 75°F [24°C]). Leave nozzle attached to store. Replace nozzle after storage.
For Bulk Containers
Mix thoroughly by weight or volume in the proportions specified in the Typical Uncured Properties section. Mix approximately 15 seconds after uniform color is obtained.
4. For maximum bond strength apply adhesive evenly to both surfaces to be joined.
5. Application to the substrates should be make within 5 minutes. Larger quantities and/or higher temperatures will reduce this working time.
6. Join the adhesive coated surfaces and allow to cure at 60°F (16°C) or above until completely firm. Heat, up to 200°F (93°C), will speed curing. These products will fully cure in 24-48 hours @ 75°F (24°C).
7. Keep parts from moving during cure. Contact pressure is necessary. Maximum shear strength is obtained with a 3-5 mil bond line.
8. Excess uncured adhesive can be cleaned up with ketone type solvents.*
*Note: When using solvents, extinguish all ignition sources and follow the manufacturer's precautions and directions for use.
Adhesive Coverage: A 0.005 in. thick bondline will typically yield a coverage of 320 sqft/gallon.

Handling/Application Information (continued)

Surface Preparation

For optimum strength structural bonds, paint, oxide films, oils, dust, mold release agents and all other surface contaminants must be completely removed. However, the amount of surface preparation directly depends on the required bond strength and the environmental aging resistance desired by the user.
The following cleaning methods are suggested for common surfaces:
Steel:
1. Wipe free of dust with oil-free solvent such as acetone or isopropyl alcohol.*
2. Sandblast or abrade using clean fine grit abrasives.
3. Wipe again with solvent to remove loose particles.
4. If a primer is used, it should be applied within 4 hours after surface preparation.
Aluminum:
1. Acid Etch: Place panels in the following solution for 10 minutes at 150°F ± 5°F (66°C ± 2°C).
Sodium Dichromate 4.1 - 4.9 oz./gallon
Sulfuric Acid, 66°Be 38.5 - 41.5 oz./gallon 2024-T3 aluminum (dissolved) 0.2 oz./gallon minimum Tap Water as needed to balance
2. Rinse: Rinse panels in clear running tap water.
3. Dry: Air dry 15 minutes and force dry 10 minutes at 150°F ± 10°F (66°C ± 5°C).
4. If primer is to be used, it should be applied within 4 hours after surface preparation.
5. Option 2: Degrease with an industrial solvent such as MEK*; abrade with ScotchBrite™ 7447 abrasive (or sandpaper of approximately 180 grit) and wipe again with solvent*.
Plastics/Rubber:
1. Wipe with isopropyl alcohol.*
2. Abrade using fine grit abrasives.
3. Wipe with isopropyl alcohol.*
*Note: When using solvents, extinguish all ignition sources and follow the manufacturer's precautions and directions for use.

Storage and Shelf Life

Store products at 60-80°F (16-27°C) for maximum storage life. Rotate on "first in-first out" basis.
When stored as recommended in original unopened container, this product has a shelf life of 24 months from date of manufacture.

Industry Specifications

UL 94 HB

Trademarks

References

Property	Values
3m.com Product Page	https://www.3m.com/3M/en_US/company-us/all-3m-products/~/3M-Scotch-Weld-Epoxy-Adhesive-DP100/?N=5002385+3293242434&rt=rud
Safety Data Sheet SDS	https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=DP100 Clear

3M™ Scotch-Weld™ Epoxy Adhesive DP100 Clear

Family Group

	DP100 Clear	DP100NS Translucent
Color Test Name: Cured	Clear	Translucent
Open Time (min)	5	5

ISO Statement

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

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