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Technical Data Sheet

3M™ Scotch-Weld™ Epoxy Adhesive 6011LV

V-5 | English-US
Last Revision Date: January, 2026
Supersedes: December, 2024

Additional Info

Product Description

3M™ Scotch-Weld™ 6011LV is high performance one-part low temperature fast cure epoxy adhesive with excellent shear strength and good heat and humidity resistance. It provides good adhesion strength to various types of substrates when cured and is designed for heat sensitive electronics and semiconductor devices, such as memory cards, CCD/CMOS, LED lens, earphone and high throughput display assembly etc.

Product Features

- One part
- Excellent shear strength
- Cure at low temperature
- Excellent heat and humidity resistance
- Fast cure
- Low viscosity
- Excellent sealing
- Good pot life

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

Attribute Name	Test Method	Value
Color (solid)		White
Components		1-part
UV Tracer		No
Density - Liquid	ASTM D1875	1.18 – 1.38 g/mL [1]
Pot Life	ASTM D7867	7 d [2]
Halogens (Cl, Br)		<900 ppm [3]
Total Halogens (Cl + Br)		<1500 ppm [3]

[1] Measured by Helium gas pycnometer at 23°C

[2] Determined by meeting minimum application viscosity requirements of the adhesive over time @ 23°C

[3] Per IEC 61249-2-21

Temperature: 25 °C
Test Method: ASTM D7867

Attribute Name	Test Condition	Value
Viscosity - Cone and Plate	0.1 Hz	16 Pa·s [1]
Viscosity - Cone and Plate	1 Hz	6 Pa·s [1]
Viscosity - Cone and Plate	10 Hz	3 Pa·s [1]
Thixotropic Index	0.1 Hz / 1 Hz	2.7 [1]
Thixotropic Index	1 Hz / 10 Hz	1.8 [1]

[1] 40mm, 2.0°, 50um truncation cone and Peltier plate. 60s pre-shear at 100 Hz. 5 min flow ramp form 0.01 to 100 Hz @ 25°C

Typical Cure Profiles

Temperature: 65 °C
Test Method: ASTM D4473

Attribute Name	Value
Time to Double Complex Viscosity	2.8 min [1]
Time to 1,000 Pa.s Complex Viscosity	5.5 min [1]
Time to 0.1 MPa Storage Modulus	5.9 min [1]
Time to 1 MPa Storage Modulus	6.3 min [1]
Time to 80% Storage Modulus Max	6.9 min [1]

[1] Parallel Plate Rheometer: Isothermal - 25mm parallel plate, 1 Hz

Substrate: Etched Aluminum
Temperature: 65 °C
Test Condition: 23 °C
Test Method: ASTM D1002, ISO 4587

Attribute Name	Dwell Time	Value
Time to Cure		20 min [1]
Overlap Shear Strength	60 min	32 MPa [2]

[1] 2mm thick substrate. Bond dimensions: 12.7mm x 25.4mm x 0.15mm. Dwell time refers to time coupons are exposed to condition in oven. Time to 80% overlap shear full strength

[2] 2mm thick substrate. Bond dimensions: 12.7mm x 25.4mm x 0.15mm. Temperature refers to dwell time coupons are exposed to condition in oven. Coupons are tested 24 hours after removing from oven. Pull rate 10 mm/min.

Typical Cured Characteristics

Temperature: 23 °C (73 °F)

Attribute Name	Test Method	Value
Density - Cured Solid	ASTM D1875	1.42 g/cm³ [1]
Peak Stress	ASTM D638, ISO 527	24 MPa [2]
Young's Modulus	ASTM D638, ISO 527	1,600 MPa [2]
Shore D Hardness	ASTM D2240	78 [3]
Poisson's Ratio	ASTM D638, ISO 527	0.4 [2]
Toughness	ASTM D638, ISO 527	5 J/m [2]
Elongation at Break	ASTM D638, ISO 527	30 % [2]
Notched Izod Impact	ASTM D256-10	25 J/m [4]
Volume Shrinkage	ASTM D1875	5.4 % [1]

[1] Measured by Helium gas pycnometer

[2] 0.5mm film cured at 65°C for 1 hour. Conditioned for >5 days in 23°C/50%RH. Die cut type IV dog bone. 100mm/min pull rate. Digital Image Correlation (DIC) used for strain measurements.

[3] 1 mm films stacked to 6 mm

[4] 3 mm thick sample

Test Condition: 1 Hz
Test Method: ASTM D7028

Attribute Name	Temperature	Value
Tg: DMA Temp Ramp		50 °C [1]
Storage Modulus: DMA Temp Ramp	-20 °C	3,900 MPa [1]
Storage Modulus: DMA Temp Ramp	0 °C	3,700 MPa [1]
Storage Modulus: DMA Temp Ramp	25 °C	3,000 MPa [1]
Storage Modulus: DMA Temp Ramp	45 °C	210 MPa [1]
Storage Modulus: DMA Temp Ramp	65 °C	15 MPa [1]

Attribute Name	Temperature	Value
Storage Modulus: DMA Temp Ramp	85 °C	11 MPa [1]

[1] 0.5mm film cured at 65°C for 1 hour. Conditioned for >5 days in 23°C/50%RH (CTH). 1Hz film tension DMA Heat from -20°C to 100°C at 3°C/min. Tg reported as peak of Tan Delta.

Storage Modulus: DMA Master Curve

Temperature: 25 °C
Test Method: ASTM D4065

Test Condition	Value
0.1 Hz	1,600 MPa [1]
1 Hz	2,100 MPa [1]
10 KHz	3,000 MPa [1]

[1] 0.5mm film cured at 65°C for 1 hour. Conditioned for >5 days in 23°C/50%RH (CTH). Multi-frequency incremental temperature sweep film tension DMA Heat from -20°C to 100°C.

Typical Performance Characteristics

Overlap Shear Strength

Temperature: 23 °C (73 °F)
Test Method: ASTM D1002, ISO 4587

Test Condition	Substrate	Value
	Al to Al	18 MPa [1]
	Al to PC/ABS	13 MPa [1]
10 d at 65 °C, 95% RH + 24 hr at 23 °C	Al to PC/ABS	8.5 MPa [1]

[1] 13 x 25 mm (0.5 x 1.0 in) bond area, 5 – 8 mil thickness. Separation rate 2.5 mm/min (0.10 in/min). AL abraded prior to bonding. Plastic wiped with IPA prior to bonding.

Electrical and Thermal Properties

Attribute Name	Test Method	Temperature	Test Condition	Value
Dielectric Strength	ASTM D149	25 °C		55 kV/mm [1]
Dielectric Constant (Dk)	ASTM D150	23 °C (73 °F)	100 KHz	5.3
Dissipation Factor (Df)	ASTM D150	23 °C (73 °F)	100 KHz	0.036
Volume Resistivity	ASTM D1257	23 °C (73 °F)	500 V, 60 s	7.8E+14 Ω-cm

[1] Measured at 0.26 mm

Handling/Application Information

Surface Preparation

The following cleaning methods are suggested for common surfaces:
Steel:
1. Wipe free of dust with oil-free solvent such as Methyl Ethyl Ketone.*
2. Sandblast or abrade using clean fine grit abrasives.
3. Wipe again with solvent to remove loose particles.
Aluminum:
1. Vapor Degrease - Perchloroethylene* condensing vapors for 5-10 minutes.
2. Alkaline Degrease - Oakite 164 solution (9-11 oz./gallon water) at 190 °F ± 10°F (87°C ± 5°C) for 10-20 minutes. Rinse immediately in large quantities of cold running water.
3. Acid (FPL) Etch - Place panels in their 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
4. Rinse - Rinse panels in clear running tap water.
5. Dry - Air dry 15 minutes; force dry 10 minutes at 150°F ± 10°F□66°C ± 5°C).
6. If primer is to be used, it should be applied within 4 hours after surface preparation.
Plastics:
1. Solvent wipe with Isopropyl Alcohol.*
2. Abrade using clean fine grit abrasives.
3. Solvent wipe with Isopropyl Alcohol.*
Rubbers:
1. Solvent wipe with Methyl Ethyl Ketone.*
2. Abrade using clean fine grit abrasives.
3. Solvent wipe with Methyl Ethyl Ketone.*
Glass:
1. Solvent wipe with acetone or Methyl Ethyl Ketone.*
Note: For glass applications which will be subjected to high moisture/humidity conditions, 3M™ Scotch-Weld™ Primer EC-3901 should be used to prime the glass.
***Note:** Prior to use of these solvents, extinguish or eliminate any ignition sources and read and follow supplier's environmental, health, and safety recommendations listed on the MSDS and product label.

Directions for Use

1. Storage at or below -18°C
2. Warm products to room temperature before opening containers to restore proper application consistency and to prevent moisture condensation on adhesive surface. Containers may be stored at room temperature for 1-2 hours to thaw. Do not warm at temperatures above 27°C.
3. Use glove to avoid contacting container directly.
4. Avoid freezing products again after warming.

Application Examples

- Mobile device bonding
- Wearable electronic device bonding
- Electronic Assembly
- Encapsulation

Application Techniques

- Dispensing
- Jetting
- Screen or stencil printing
- Molding

Storage and Shelf Life

Store product at or below -18°C (0°F) in the original, unopened packaging.
For best performance, use this product within 18 months from date of manufacture.

Available Sizes

Attribute Name	Value
Packaging	30 mL

Certificate of Analysis (COA)

The 3M Certificate of Analysis (COA) for this product is established when the product is commercially available from 3M. The commercially available product will have a COA specification established. The COA contains the 3M specifications and test methods for the products performance limits that the product will be supplied against. The 3M product is supplied to 3M COA test specifications and the COA test methods. Contact your local 3M representative for this product's COA.

This technical data sheet may contain preliminary data and may not match the COA specification limits and/or test methods that may be used for COA purposes.

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Select Automotive Applications:
This product is an industrial product and has not been designed or tested for use in certain automotive applications, such as automotive electric powertrain battery or high voltage applications, which may require the product to be manufactured in a IATF certified facility, meet a Ppk of 1.33 for all properties, undergo an automotive production part approval process (PPAP), or fully adhere to automotive design or quality system requirements (e.g., IATF 16949 or VDA 6.3). Customer assumes all responsibility and risk if customer chooses to use this product in these applications.

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ISO Statement

This product was manufactured under a 3M quality system registered to ISO 9001 standards.

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