

# Technical Datasheet

Ashland Performance Materials

Pliogrip™  
structural adhesives

## PLIOGRIP™ 7400 / 7651B Urethane Adhesive System

**Description** The PLIOGRIP® 7400/7651B adhesive systems is a two-component, structural urethane adhesive system. This adhesive system is designed for room temperature curing applications. PLIOGRIP Structural Adhesives are resistant to elevated temperatures, moisture, fuel, most solvents and chemicals.

Nominal Component Properties	PLIOGRIP 7400	PLIOGRIP 7651B
	Prepolymer	Curative
Color	Tan	Black
Viscosity, cP	14,500	20,500
Density, Lbs/Gal. (g/cm <sup>3</sup> )	10.82 (1.30)	10.35 (1.24)
Ratio by Weight	1.05	1.00
Ratio by Volume	1.00	1.00
Odor	None	Slight Amine

Typical Cure Characteristics of Mixed Adhesive	Temperature	Time
Open Time (Ashland PGDEV-022)	@ 23°C (73°F)	1.5 Minutes
Handling Time	@ 23°C (73°F)	5 Minutes
Sanding Time	@ 23°C (73°F)	10 Minutes
Shrinkage, %		Imperceptible

Physical Properties of Cured Adhesive	Value	Test Method
Tensile, MPa @ 23°C	26.5	ASTM D-638
Young's Modulus, MPa @ 23°C	1102	ASTM D-638
Elongation, %	65	ASTM D-638
Poisson Ratio, @ 23°C	0.498	ASTM E-132
Water Absorption, %	1.5	ASTM D-570
Shore Hardness, D	69	ASTM D-2240
CLTE, 10 <sup>-6</sup> /°C @ -30° to 0°C	73.3	ISO MAT-2208
CLTE, 10 <sup>-6</sup> /°C @ -100° to 130°C	226.7	ISO MAT-2208
Glass Transition Temperature, °C		ASTM E-1640



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G' Onset	21.0
G'' Peak	20.7
Tan Delta Peak	45.8

Physical properties are values, based on material tested in our laboratories, but are subject to a standard deviation from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot.

1 MPa = approximately 145 psi

#### Typical Test Conditions and Results

Adhesive System	PLIOGRIP 7400/7651B adhesive				
Substrate	Structural composites including automotive and marine; coated metal				
Surface Preparation	Composite -- sand and clean / metal -- coated				
Fixture Cure	Room temperature				
Bond Sample Configuration	0.76mm bond thickness, 2.54 x 10.16cm lapshear coupons with 65cm <sup>2</sup> bond area (ASTM D-3173)				
Crosshead Speed	1.27cm/minute (SAE J1525)				

Typical Lap Shear Values, MPa	23°C Test	82°C Test	7 Day 54°C Water Soak	Environmental Cycle*	14 Days 37°C 100% RH
SMC / SMC	3.9	4.3	2.5	2.9	3.2
Coated Metal / Coated Metal	17.9	5.1	20.7	20.7	18.7

SMC = Sheet Molding Compound

\*GM 9505P Cycle G

All tested SMC specimens exhibited fiber-tear of the composite substrate.

The Coated Metal bonds failed with cohesive failure of the adhesive.

{Each number listed is the average of five lap shears.}

#### Handling

PLIOGRIP 7400 and PLIOGRIP 7651B Urethane Adhesive System contains ingredients which could be harmful if improperly handled. Contact with skin and eyes should be avoided and necessary protective equipment and clothing should be worn.



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Ashland maintains Material Safety Data Sheets on all of its products. Material Safety Data Sheets contain health and safety information for your development of appropriate product handling procedures to protect your employees and customers.

Our Material Safety Data Sheets should be read and understood by all of your supervisory personnel and employees before using Ashland products in your facility.

	PLIOGRIP 7400 ADHESIVE	PLIOGRIP 7651B ADHESIVE
STORAGE:	Unopened container stored indoors at 60°-90°F (15°-32°C)	Unopened container stored indoors at 60°-90°F (15°-32°C)
SHELF LIFE:	365 days from date of shipment	365 days from date of shipment
PACKAGING:	New and non-returnable steel containers of 55 gallon (208 liter) and 5 gallon (19 liter) respectively. Special tote packaging is also available.	New and non-returnable steel containers of 55 gallon (208 liter) and 5 gallon (19 liter) respectively. Special tote packaging is also available.
DOT LABEL REQUIREMENTS:	None required	None required

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Ashland requests that the user reads, understands and complies with the information contained herein and the current Material Safety Data Sheet.

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