

# Plastic and Rubber Instant Adhesives

PR40 • PR100 • PR600 • PR1500 • PR Gel

**Technical Data**

**April, 2016**

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**Product Description** Plastic and Rubber Instant Adhesives are designed to give exceptional performance on difficult-to-bond plastic and rubber substrates. These adhesives may be bonded to like substrates or in combination with metal or composite substrates. Superior performance is achieved on materials such as heavily plasticized PVC, EPDM, ABS, Nylon, Santoprene®, and Viton®.

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- Specific Features**
- Plastic and Rubber Instant Adhesive PR40 is a low viscosity cyanoacrylate adhesive which bonds close-fitting plastic or rubber parts quickly and with high strength.
  - Plastic and Rubber Instant Adhesive PR100 is a general purpose, low viscosity bonder for rubber or plastic surfaces.
  - Plastic and Rubber Instant Adhesive PR600 is a medium viscosity cyanoacrylate with some gap-filling capability. It will bond many common substrates including plastics and rubbers.
  - Plastic and Rubber Instant Adhesive PR1500 is a high viscosity cyanoacrylate that can be used on plastic or rubber parts that do not fit well together. It has excellent gap-filling characteristics and will not wick into unwanted areas.
  - Plastic and Rubber Instant Adhesive PR Gel is a fast curing, very high viscosity, gap-filling cyanoacrylate. Its gel formulation is suitable for bonding poorly mating components and for porous substrates and can be used on vertical surfaces as it will not drip or slump.

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## Typical Uncured Physical Properties

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

	Plastic and Rubber Instant Adhesives				
	PR40	PR100	PR600	PR1500	PR Gel
Color	Clear	Clear	Clear	Clear	Clear
Base	Ethyl Hybrid	Ethyl Hybrid	Ethyl Hybrid	Ethyl Hybrid	Ethyl Hybrid
Appearance	Liquid	Liquid	Liquid	Liquid	Liquid
Specific Gravity (g/ml)	1.06	1.06	1.07	1.08	1.10
Viscosity (cps)	20 - 45 <sup>1</sup>	70-110 <sup>1</sup>	500-700 <sup>2</sup>	1,200 - 1,700 <sup>3</sup>	100,000 – 150,000 <sup>4</sup>
Time to Handling Strength (sec)*	<15	<20	<35	<45	<25
Full Cure time (hr)	24	24	24	24	24

<sup>1</sup> Cone-Plate viscosity, CP75 at 3000/s shear rate; <sup>2</sup> Cone-Plate viscosity, CP75 at 100/s shear rate, <sup>3</sup> Cone-Plate viscosity, CP50 at 100/s shear rate, <sup>4</sup> Brookfield viscosity, Spindle TC @ 2.5 rpm; \* On EPDM. Time to handling is substrate dependent.

## Typical Cured Properties

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

	Plastic and Rubber Instant Adhesives				
	PR40	PR100	PR600	PR1500	PR Gel
Temperature Range (°F)	-65 to 180	-65 to 180	-65 to 180	-65 to 180	-65 to 180
Gap Fill (in)	0.004	0.006	0.006	0.008	0.020
Overlap Shear Strength <sup>1</sup> (psi)					
	PR40	PR100	PR600	PR1500	PR Gel
Steel <sup>2</sup>	2000	2100	2100	2100	2200
Stainless Steel <sup>2</sup>	-	2700	2800	2950	3100
Aluminum <sup>2</sup>	-	2223	2326	2387	2400
ABS	900 <sup>3</sup>	950 <sup>3</sup>	1200 <sup>3</sup>	1400 <sup>3</sup>	1050 <sup>3</sup>
Polycarbonate	660 <sup>3</sup>	750 <sup>3</sup>	750 <sup>3</sup>	700 <sup>3</sup>	900 <sup>3</sup>
PVC	-	1750 <sup>3</sup>	1750 <sup>3</sup>	1000 <sup>3</sup>	1750 <sup>3</sup>
Nylon	-	850	900	600	950
Polypropylene <sup>4</sup>	-	1100 <sup>3</sup>	1050 <sup>3</sup>	600 <sup>3</sup>	1100 <sup>3</sup>
Silicone Elastomer <sup>5</sup>	-	100 <sup>3</sup>	100 <sup>3</sup>	100 <sup>3</sup>	100 <sup>3</sup>

<sup>1</sup> ASTM D-1002    <sup>2</sup> Grit blasted    <sup>3</sup> Substrate failure    <sup>4</sup> Primed with AC77    <sup>5</sup> Primed with AC79

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## Hot Strength

Temp (F)	Percent of Initial Strength				
	PR40	PR100	PR600	PR1500	PR Gel
72	100	100	100	100	100
167	81	89	83	76	84
212	80	54	52	64	41
257	53	16	14	15	13

## Handling Information

### 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 depends on the required bond strength and the environmental aging resistance desired by the user. Typical quick surface preparation would include wiping with a clean solvent (such as isopropyl alcohol\*), abrading the surface with a clean fine abrasive, and then wiping again with a clean solvent to remove loose particles.

### Directions for Use

1. Ensure that parts are clean, dry, and free from oil and grease.
2. An instant adhesive activator may be required if there are bonding gaps or porous substrate surfaces, if substrates are low surface energy plastics (e.g., polyethylene, polypropylene) or if substrates have acidic surfaces (e.g., paper, leather).
3. Bond speed is typically very fast so ensure that parts are properly aligned before dispensing.
4. Product is normally hand applied from the bottle. Apply sparingly to one surface and press parts firmly together until handling strength is achieved. As a general rule, as little cyanoacrylate as possible should be used. Over application will result in slower cure speed and lower bond strength.

### Cured Bond Characteristics

1. Full bond strength will typically be achieved within a 24 hour cure time.
2. Low humidity or low temperature conditions will slow down the cure rate.
3. After curing, Plastic and Rubber Instant Adhesive bonds are suitable for use up to about 180°F (82°C).
4. Cyanoacrylate bond resistance to most oils and solvents is excellent. Long term humidity, moisture, or water immersion may affect the strength of a cured cyanoacrylate bond depending on the substrates and the bond gap. Testing is recommended to evaluate the effect.

**\*Note:** When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and directions for use.

# RITE-LOK Cyanoacrylate Adhesive PR20

## Product Data Sheet

Updated : February 2007  
Supersedes : New

**Product Description** RITE-LOK PR20 is a low viscosity Ethyl Cyanoacrylate adhesive. PR20 is formulated for very high speed, high strength bonding of plastics and rubbers.

**Key Features** PR20 is specially formulated for the building of most plastics and rubbers, but will also bond other common substrates. Recommended for use on close-fitting parts and smooth, even surfaces. Can be post-applied to pre-assembled parts.

<b>Physical Properties</b>	<b>Base</b>	Ethyl
	<b>Soluble In</b>	Acetone, MEK
	<b>Viscosity (cps)</b>	Range 17-22 Typical Value 20
	<b>Specific Gravity</b>	1.06
	<b>Colour</b>	Clear

<b>Performance Characteristics</b>	<b>Maximum Gap Fill</b> (best results are obtained with very thin bond lines)	0.10mm
	<b>Fixture Time</b>	2-20secs
	<b>Tensile Strength</b> (ISO 6922)	20 N/mm <sup>2</sup>
	<b>Full Cure</b>	24hrs
	<b>Speed of Cure</b>	The speed of cure of cyanoacrylates varies according to the substrate to be bonded. Acidic surfaces such as paper and leather will have longer cure times than most plastics and rubbers.
	<b>Moisture Resistance</b>	Low resistance to high levels of moisture and humidity over time.
	<b>Service Temperature Range</b>	-50 to +80°C

**Additional Product Information** RITE-LOK Activators AC11 and AC12 may be used in conjunction with RITE-LOK cyanoacrylates where cure speed needs to be accelerated. Cure speeds of less than 2 seconds can be obtained with most RITE-LOK cyanoacrylates. The use of an activator can reduce the final bond strength by up to 30%