

## PUG-77 / PUG-78F / PUG-8002 / PUG-8004

### DESCRIPTION

The PUG-77, PUG-78F, PUG-8002 and PUG-8004 are un-promoted, high viscosity, unsaturated polyester resins.

### FEATURES AND BENEFITS

- Quick wet out/roll out properties
- Acceptance of styrene monomer not more than 40% by weight.
- Fast cycle of curing.
- Low color.

### APPLICATIONS

- GP laminating, FRP parts, Hand lay-up, Spray-up.
- Decorative figures.

### TYPICAL LIQUID PROPERTIES

Property	Units	PUG-77	PUG-78F	PUG-8002	PUG-8004	Test Method
Acid number (Solution)	Mg KOH/g sample	43 max.		40 máx.	25 máx.	TARQ – 100
Non-volatile content	%	76-78	77-79	76-78		TARQ – 204
Gardner viscosity	—	Z4-Z6	Z6-Z7	Z4-Z6		TARQ – 310
Gel time	Min.	6-10 <sup>1</sup>	5-8 <sup>2</sup>	7-11 <sup>2</sup>	3-4 <sup>2</sup>	TARQ – 400
Cure time	Min.	16-22	10-20	20-27	10-15	TARQ – 400
Exothermic Peak	°C	175-200	170-210	185 max.	190 max.	TARQ – 400
Stability at 120°C	Hours	1.5				TARQ – 660
Apha color	—	50 max.		80 max.	50 max.	TARQ – 610
Appearance	—	Clear				Visual

<sup>1</sup> Dilute to 60% solids, 0.25% Co (12%), 1% RR catalyst @25°C; <sup>2</sup> Dilute to 60% solids, 0.25% Co (12%), 1% Butanox M-50 catalyst @25°C.

NOTE: Tests results compared with the reported in certificate can be affected due to: batch age, temperature, moisture, type and amount of catalyst, testing equipment and method.

## PHYSICAL PROPERTIES

Physical properties are shown for fiberglass laminate: These are typical values and are provided for reference only.

Property	Units	PUG-77	PUG-78F	PUG-8002	PUG-8004	Test Method
Tensile Strength	Psi	16,398				ASTM D-638
Tensile Modulus	Psi	2.48 x 10 <sup>6</sup>				ASTM D-638
Elongation	%	0.17				ASTM D-638
Flexural Strength	Psi	28,031				ASTM D-790
Flexural Modulus	Psi	1.27 x 10 <sup>6</sup>				ASTM D-790
HDT @ 1.82 MPa	°C	77				ASTM D-648
Barcol hardness	—	45				ASTM D-2583

- 1.- Laminate construction: 30% fiberglass to resin ratio.
- 2.- Laminate cured overnight at room temperature and post-cured at 65°C for 5 hours.
- 3.- HDT is evaluated at neat resin casting.

## RECOMMENDATIONS

- 1.- The catalyst level should not exceed 2.8% or fall below 1% for proper cure.
- 2.- These products should not be used when temperature conditions are below 16°C, as curing and handling may be adversely affected.
- 3.- Do not add any material different to the catalyst recommended for these products.
- 4.- Do not mix organic peroxides with metallic soaps, amines or any type of accelerators or promoters, because it can result on violent decomposition with fire or explosion.
- 5.- Any additional questions, please contact your Reacciones Químicas SA de CV sales representative.

## STORAGE

Uncatalyzed PUG-77, PUG-78F, PUG-8002 and PUG-8004 resins, have a usage life of three months from invoice date, when stored at 25°C or below, in a closed, factory sealed opaque containers, and out of direct sunlight, heat sources or moisture. For every 7°C increase in storage temperature, the shelf life is reduced by one half.



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## **SAFETY AND HANDLING**

Detailed information for safe handling of PUG-77, PUG-78F, PUG-8002 and PUG-8004 resins, can be found on its SDS. For more information, please contact your Reacciones Químicas SA de CV sales representative.

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