

Product Description

POLYCOAT PRE-POL® PC 14-86 is an MDI terminated polyester prepolymer that yields high property elastomers in the 85A hardness range, when cured with 1,4 Butanediol. Some of its unique properties of this high performance elastomer include:

- Excellent abrasion resistance
- Good Heat Stability
- High Tear Strength
- Low Compression Set
- Low Viscosities at processing Temperatures
- Lower isocyanate exposure

Hygiene

POLYCOAT PRE-POL® PC 14-86 Contains free diphenylmethane-4, 4' diisocyanate (MDI), which is known to cause irritation to eyes, skin, mucous membranes and respiratory system. Avoid contact with eyes, skin, and clothing, and wash thoroughly after handling. Use only with adequate ventilation.

PREPOLYMER SPECIFICATIONS

NCO% 6.44 – 6.98

Viscosity, poise @ 212°F (100°C) 6.0 – 11.0

Amine Equivalent 627 - 652

Appearance @ 77°F (25°C) Clear viscous liquid

Color, Gardner 0-2

PROCESSING CONDITIONS

	A-Side	B-Side
Pre-Pol® PC 14-86	200°F (93 °C)	200°F (93 °C)
1, 4 Butanediol (95% Theory)	R.T. (25)	
HQEE	240-260 °F (115-127 °C)	
pph 1,4-BD 95% Theory	6.8	
pph HQEE, 95% Theory	15	
Cure	1 Hour @240°F (115 °C)	1 Hour @ 250 °F (121 °C)
Post Cure, Hrs.	16 Hours@ 240 °F (115 °C)	16 Hours@250 °F (121 °C)

PROPERTIES

Test specimens conditioned one week at 75°F (24°C) and 50% RH before testing.

Hardness, durometer A A: 85 B: 96

100% Modulus, psi A: 735 ± 50 (5.0 ± 0.3 mPa)
B: 1650 (11.5 ± 0.3 mPa)

300% Modulus, psi A: 1615 ± 50 (11.2 ± 0.3 mPa)
B: 2515 ± 50 (17.2 ± 0.3 mPa)

Tensile Strength, psi A: 6250 ± 300 (43 ± 2.1 mPa)
B: 4000 ± 300 (27.6 ± 2.1 mPa)

Elongation at Break, % A: 585 ± 50
B: 515 ± 50

Compression Set, % A: 35 B: 36

Method B, 22 hrs#158°F (70°C) 470±20 (3.24 ± 0.14 mPa)

Compression Set (Method B) A: 35 B: 38

Method B, 22 hrs#158°F (70°C)

Bashore Rebound, % A: 40 B: 36

Die C Tear, pli (kN/m) A: 518(91) B: 712 (124)

D-470 Tear, pli (kN/m) A: 141(24.5) B: 222 (38.5)

FORMULATIONS

PRE-POL® PC 14-86 Physical cured with blends of PRE-POL® PC 90-25 and 1,4 Butanediol.

	SIDE A	SIDE B	SIDE C
PRE-POL® PC 14-86	100	100	100
PRE-POL® PC 90-25	7.6	5.1	2.7
Mole Ratio, 1,4 BD/ PC 90-25	90/10	75/25	40/60
% Theory	95%	95%	95%

PROCESSING CONDITIONS

	SIDE A	SIDE B	SIDE C
PRE-POL® PC 14-86. °F(°C)	200 (93.3)	200 (93.3)	200 (93.3)
PC 90-25/ 1,4 BD °F (°C)	180 (82)	180 (82)	180 (82)
Pot Life (Mins.)	12	14	16
Cure	1 Hour @ 240 °F or 115 °C for all.		

Post Cure 24 Hours @ 240 °F or 115 °C for all

PHYSICAL PROPERTIES

	SIDE A	SIDE B	SIDE C
Hardness, Shore A	80	70	60
100% Modulus (psi) (MPa)	552(3.8)	471(3.2)	200 (1.4)
300% Modulus (psi) (MPa)	1112(7.6)	910 (6.3)	380 (2.6)
Tensile (psi) (MPa)	5510(37.9)	4010 (73.5)	3055 (21.0)
Tear Die C, pli (kN/m)	460 (80.5)	420 (73.5)	390 (68.3)
Tear D-470 pli (kN/m)	140 (24.5)	70 (12.3)	45 (7.9)
Elongation, %	465	532	657
Method B, 22 Hours @ 158 °F (70 °C), Compression Set, %	39	25	12



Storage and Handling

Containers should be kept tightly closed to prevent moisture contamination. MDI will react with water to liberate CO gas potentially causing containers to expand and rupture. Do not reseal if contamination is suspected.

Use of a dry nitrogen blanket for partial drums is recommended. Storage for PRE-POL® PC 14-86 should be maintained in a cool, dry place at ambient temperatures.

Exposure to temperatures over 350°F (177°C) can create excessive pressure potentially causing containers to rupture. Do not breathe aerosol or vapors and avoid contact with skin and eyes. Always use protective equipment including a respirator when handling heated prepolymers as exposure to vapors can be dangerous.

Devices such as melting ovens, thermostatically controlled warming blankets, or drum heaters can be used for pre-heating PRE-POL® PC 14-86.

Approximate preheat times at 158°F (70°C) are:

- 5 gallon pail (18.9 liters) 16 - 24 hours
- 55 gallon drum (208 liters) 36 - 48 hours

Pre-Pol exposed to temperatures lower than 75°F (24°C) during shipment and/ or Storage require longer meltdown times. Containers should be rolled to ensure homogeneity prior to use.

Health and Safety Information

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling any of the products listed above. Before working with these products, it is your responsibility to read and become familiar with the available information on its hazards, proper use and handling. This

is extremely important and cannot be overemphasized. Information is available in several forms, e.g. material safety data sheets and product labels. To obtain this information, contact your Polycoat Products representative

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