

Product Description

POLYCOAT PRE-POL® PC 20-90 is an MDI terminated polyether prepolymer that yields high property elastomers in the 90A hardness range, when cured with 1,4 Butanediol. Some of its unique properties include:

- Excellent abrasion resistance
- Excellent hydrolytic stability
- Excellent low- temperature properties
- High Resilience

Vulcanizates from PRE-POL® PC 20-90 are uniquely suited for a wide variety of applications. Examples are wheels and pipe linings. As with all polyurethane products, application and field testing is recommended to determine suitability of the product combination for a specific application.

PREPOLYMER SPECIFICATIONS

NCO% 7.12 – 7.64

Viscosity, poise @ 212°F (100°C) 4.0 - 7.0

Specific Gravity @ 212°F (100°C) 1.01

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

Color, Gardner 0-2

Flash Point, Cleveland Open Cup >380°F (193°C)

Solubility Soluble in aromatic or chlorinated hydrocarbons, ketones and esters

Storage Stability Excellent in the absence of moisture and heat

Amine Equivalent 550 - 590

PROCESSING CONDITIONS

Pre-Pol® PC 20-90 (6.70% NCO) 100 pts

1, 4 Butanediol (95% theory) 7.53 pts

MIXING AND CURING

Prepolymer temperature 200°F (93°C)

1, 4 Butanediol temperature 77–158°F (25–70°C)

Mold temperature 240°F (115°C)

Cure, hours at 1 at 240°F (115°C)

Postcure, hours at 240°F (116°C) 16

Working Life, minutes 6

VULCANIZATE PROPERTIES

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

Hardness, durometer A 85

100% Modulus, psi 880 ± 50 (6.6 ± 0.3 mPa)

300% Modulus, psi 1726 ± 200 (17.5 ± 1.4 mPa)

Tensile Strength, psi 5370 ± 300 (51.3 ± 2.1 mPa)

Elongation at Break, % 520 ±50

Tear Strength (ASTM D-470) psi 76 ± 5 (0.89 ± 0.03 mPa)

Tear Strength (Die C) psi 480 ±20 (3.86 ± 0.14 mPa)

Compression Set (Method B), % After 22 h at 158°F (70°C) 30

Resilience (Rebound), % 60

Lower durometers in the 60A to 85A range can be achieved with PC 20-85 by combining PC 90-20 curative with 1, 4 Butanediol. Contact your POLYCOAT representative for further information.

Storage and Handling

Containers should be kept tightly closed to prevent moisture contamination. MDI will react with water to liberate CO₂ 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 20-85 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 20-85.

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

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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