



Product Description

POLYCOAT PRE-POL® PC 42-90 is a TDI terminated polyether prepolymer that yields high property elastomers in the 90 -92 Shore A hardness range, when cured with MOCA (4,4-methylene-bis-(2- chloroaniline)). Some of its unique properties include:

- Excellent abrasion resistance
- High resilience
- Excellent hydrolytic stability
- Excellent mechanical properties
- Excellent resistance to Oxidation

Vulcanizates from PRE-POL® PC 42-90 is uniquely suited for a wide variety of applications. Examples are forklift tires, sheet goods, wheels, rollers, seals, pipe linings, and slurry pumps. 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% 3.95 – 4.30

Viscosity, poise @ 212°F (100°C) 3.0 - 5.0

Specific Gravity @ 212°F (100°C) 1.06

Appearance @ 77°F (25°C) Viscous liquid

Color, Gardner 0-3

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

PROCESSING CONDITIONS

Pre-Pol® PC 42-90 (4.12% NCO) 100 pts

MOCA (95% theory) 12.4 pts

Mixing and Curing

Prepolymer temperature 200°F (93°C)

MOCA temperature 240°F (116°C)

Mold temperature 212°F (100°C)

Cure, hours at 1 at 212°F (100°C)

Postcure, hours at 212°F (70°C) 16

Working Life, minutes 10

Vulcanizate Properties

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

Hardness, durometer A 90

100% Modulus, psi 1133 ± 50 (7.8 ± 0.35 mPa)

300% Modulus, psi 2239 ± 200 (15.4 ± 1.37 mPa)

Tensile Strength, psi 6612 ± 300 (45.6 ± 2.1 mPa)

Elongation at Break, % 450 ± 50

Tear Strength (ASTM D-470) psi 87 ± 5 (0.60 ± 0.03 mPa)

Tear Strength (Die C) psi 580 ± 20 (3.98 ± 0.14 mPa)

Compression Set (Method B), % After 22 h at 158°F (70°C) 29

Resilience (Rebound), % 45

Specific Gravity at 75°F (24°C) 1.10



Storage and Handling

Containers should be kept tightly closed to prevent moisture contamination. TDI 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 42-90 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. Use protective equipment including respirator when handling heated TDI as exposure to vapors of heated TDI can be dangerous.

Devices such as melting ovens, thermostatically controlled warming blankets, or drum heaters can be used for pre-heating PRE-POL® PC 42-90.

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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