



POLYCOAT PRODUCTS

A Division of American Polymers Corp.

PRE-POL® PC 21-90

Material Technical Data Sheet

POLYCOAT PRE-POL® PC 21-90 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 low - temperature properties
- Excellent dynamic properties
- Excellent hydrolytic stability

Vulcanizates from PRE-POL® PC 21-90 are uniquely suited for a wide variety of applications. Examples are wheels and rolls. 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, % | 7.70 – 8.10 |
| • Amine Equivalent | 519 - 546 |
| • Viscosity, poise @ 212°F (100°C) | 4.0 - 8.0 |
| • 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 |
| • Solubility | Soluble in aromatic or chlorinated hydrocarbons, ketones and esters |
| • Storage Stability | Excellent in the absence of moisture and heat |



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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 21-90** 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. 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 21-90**.

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

5 gallon pail	16 - 24 hours
55 gallon drum	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

Limited Warranty:

Please read all information in the general guidelines, product data sheets, guide specifications and material safety data sheets (MSDS) before applying material. Published technical data and instructions are subject to change without notice. Contact your local Polycoat Products representative or visit our website for current technical data and instructions.

Polycoat Products warrants its products to be free of manufacturing defects and that they will meet Polycoat Products current published physical properties. Polycoat Products warrants that its products, when properly installed by a state licensed waterproofing contractor according to Polycoat Products guide specifications and product data sheets over a sound, properly prepared substrate, will not allow water migration for a period of one (1) year. Seller's and manufacturer's sole responsibility shall be to replace that portion of the product of this manufacturer which proves to be defective. There are no other warranties by Polycoat Products of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. Polycoat Products shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. Polycoat Products shall not be responsible for use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee is being issued with respect to appearance, color, fading, chalking, staining, shrinkage, peeling, normal wear and tear or improper application by the applicator. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. Polycoat Products reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.

Disclaimer:

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the users responsibility to satisfy himself, by his own information and test, to determine suitability of the product for his own intended use, application and job situation and user assumes all risk and liability resulting from his use of the product. We do not suggest or guarantee that any hazard listed herein are the only ones which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether in writing or oral, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and Polycoat Products makes no claim that these tests or any other tests, accurately represent all environments

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PRE-POL[®] PC 21-90
Typical Physical Properties

Processing Conditions

Compound

Pre-Pol [®] PC 21-90 (7.90% NCO)	100 pts
1, 4 Butanediol (95% theory)	8.04 pts

Mixing and Curing

Prepolymer temperature, °F (°C)	180 (82)
1, 4 Butanediol temperature, °F (°C)	77 – 158 (25 – 70)
Mold temperature, °F (°C)	240 (115)
Cure, hours at °F (°C).....	1 at 240 (115)
Postcure, hours at 240°F (116°C)	16
Working Life, minutes	7

Vulcanizate Properties

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

Hardness, durometer A	90
100% Modulus, psi	1300 ± 50
Tensile Strength, psi	4550 ± 300
Elongation at Break, %	300 ± 50
Tear Strength (ASTM D-470), lb/in	80 ± 5
Tear Strength (Die C), lb/in	400 ± 20
Compression Set (Method B), % After 22 h at 70°C (158°F)	25
Resilience (Rebound), %	50