

Product Description

POLYCOAT PC 90-83 is a high molecular weight polyether diol that can be used either alone or in conjunction with other curatives to produce quality elastomers from a variety of polyether prepolymers. Used alone, most prepolymers yield durometers in the 50 to 60 Shore A range. Higher performance elastomers in a variety of durometers can be achieved from polyether TDI prepolymers by blending in various proportions with MOCA. The vulcanizates exhibit the following characteristics:

- Good abrasion resistance
- Good tear
- Variable Resilience

The formulation and properties shown in Table I are an example of an elastomer achieved with PC 90-83 and MOCA.

At room temperature, this curative is a waxy solid that must be melted for appropriate processing. To prepare for use, place the containers in a 158°F oven until the contents are melted.

CURATIVE SPECIFICATIONS

Equivalent weight	813
Appearance @ 77°F (25°C)	Solid
Moisture content, %	<0.09

PROCESSING

Prepolymer temperature	180-200°F 82.2 - 93°C
PC 90-83 Temperature, °F	150 – 160°F 65–71°C
MOCA Temperature, °F	240°F (115°C)
Curative Mole Ratio (in blends)	0.1 – 1.0
Cure	1 hr @ 240°F (115°C)
Post Cure	16 hrs@240°F (115°C)

PROCESSING CONDITIONS

Pre-Pol® PC 40-80 (3.26% NCO) 100 pts

MOCA (Mole %=70) 6.9 pts

PC 90-83 (Mole % = 30) 18 pts

% Theory 95

Calculations:
MOCA – $(133.5 \times 3.26 \times 95 \times 0.70) / 4202 = 6.9$ pts

PC 90-83 – $(813 \times 3.26 \times 95 \times 0.30) / 4202 = 18$ pts

MIXING AND CURING

Prepolymer temperature 200°F
93°C

MOCA temperature 240°F
116°C

PC 90-83 158°F
70°C

Mold temperature 212°F
100°C

Cure, hours at 1 at 212°F
100°C

Postcure, hours at 158°F (70°C) 16

Working Life, minutes 15-20

VULCANIZATE PROPERTIES

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

Hardness, durometer A	73
100% Modulus, psi	455±50 (3.14 ± 0.3 mPa)
300% Modulus, psi	790 ± 200 (5.44 ± 1.4 mPa)
Tensile Strength, psi	4600 ± 300 (31.7 ± 2.1 mPa)
Elongation at Break, %	525±50
Tear Strength (ASTM D-470) psi	35± 5 (0.24 ± 0.03 mPa)
Tear Strength (Die C) psi	270±20 (1.86 ± 0.14 mPa)
Resilience (Rebound), %	55

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