

**IMUTHANE**  
CASTABLE POLYURETHANE  
ELASTOMERS  
**13-89A****IMUTHANE**  
**13-89A**

IMUTHANE 13-89A is a TDI / POLYESTER based prepolymer which yields a 90 Shore-A elastomer when cured with 4, 4' methylene bis ortho chloroaniline (MBOCA).

**Typical Prepolymer Properties**

% NCO	4.1 – 4.5
Brookfield Viscosity @ 100° C	8.0 – 19.0
Specific Gravity @212° F (100° C)	1.27

**MBOCA CURED****Typical Process Conditions**

IMUTHANE 13-89A °F (°C)	212 (100)
MBOCA, °F (°C)	240 (115)
Mold, °F (°C)	212 (100)
% Theory	95
Pot Life, min	2
Cure Time, min @ °F (°C)	60 @ 212 (100)
Post Cure, hrs @ °F (°C)	16 @ 212 (100)

**Typical Physical Properties**

Shore Hardness	90A
100% Modulus, psi (MPa)	1030 (7.2)
300% Modulus, psi (MPa)	1450 (10.0)
Tensile, psi (MPa)	3880 (36.8)
Elongation, %	390
Tear Strength, Die C, pli (kN/m)	485 (85)
Tear Strength, (D470), pli (kN/m)	114 (20)
Bashore Rebound, %	24
Compression Set, Method B, 22 hrs @ 158°F (70°C), %	35
Specific Gravity	1.30

## **GR91 CURED**

### **Typical Process Conditions**

IMUTHANE 13-89A °F (°C)	212 (100)
GR91 , °F (°C)	RT
Mold, °F (°C)	248 (120)
% Theory	95
Pot Life, min	> 15
Cure Time, min @ °F (°C)	> 120 @ 248 (120)
Post Cure, hrs @ °F (°C)	16 @ 248 (120)

### **Typical Physical Properties**

Shore Hardness	54A
100% Modulus, psi (MPa)	280 (1.93)
300% Modulus, psi (MPa)	790 (5.4)
Tensile, psi (MPa)	3800 (24.6)
Elongation, %	550
Tear Strength, Die C, pli (kN/m)	170 (29.7)
Tear Strength, (D470), pli (kN/m)	16 (2.8)
Bashore Rebound, %	10
Specific Gravity	1.30

## **GR91 CURED – AD PL -342 @ 25pph**

### **Typical Process Conditions**

IMUTHANE 13-89A °F (°C)	212 (100)
GR91 , °F (°C)	RT
AD PL-342, °F (°C)	RT
Mold, °F (°C)	248 (120)
% Theory	95
Pot Life, min	> 30
Cure Time, hrs @ °F (°C)	16 @ 248 (120)
Post Cure, hrs @ °F (°C)	16 @ 248 (120)

### **Typical Physical Properties**

Shore Hardness	43-44A
100% Modulus, psi (MPa)	180 (1.2)
300% Modulus, psi (MPa)	470 (3.2)
Tensile, psi (MPa)	1750 (12.0)
Elongation, %	440
Tear Strength, Die C, pli (kN/m)	135 (23.6)
Tear Strength, (D470), pli (kN/m)	7 (1.2)
Bashore Rebound, %	15
Specific Gravity	1.28

## **GR91 CURED – AD PL -342 @ 50pph**

### **Typical Process Conditions**

IMUTHANE 13-89A °F (°C)	212 (100)
GR91 , °F (°C)	RT
AD PL-342, °F (°C)	RT
Mold, °F (°C)	248 (120)
% Theory	95
Pot Life, min	> 30
Cure Time, hrs @ °F (°C)	16 @ 248 (120)
Post Cure, hrs @ °F (°C)	16 @ 248 (120)

### **Typical Physical Properties**

Shore Hardness	30A
100% Modulus, psi (MPa)	100 (0.69)
300% Modulus, psi (MPa)	230 (1.6)
Tensile, psi (MPa)	725 (4.9)
Elongation, %	475
Tear Strength, Die C, pli (kN/m)	80 (14)
Tear Strength, (D470), pli (kN/m)	6 (1.0)
Bashore Rebound, %	20
Specific Gravity	1.27

## **GR64 / GR44 CURED**

### **Typical Process Conditions**

IMUTHANE 13-89A °F (°C)	212 (100)
GR64, °F (°C)	70
GR44, °F (°C)	70
AD PL-342, °F (°C)	RT
Mold, °F (°C)	257 (125)
% Theory	95
Pot Life, min	> 30
Cure Time, hrs @ °F (°C)	16 @ 257 (125)
Post Cure, hrs @ °F (°C)	16 @ 257 (125)

### **Mix Ratio**

IMUTHANE 13-89A, g	100
Mole Ratio	
IMUCURE™GR64, (EW 64), %	25
IMUCURE™GR44, (EW 44), %	75
Weight Ratio	
IMUCURE™GR64, g	1.14
IMUCURE™GR44, g	3.43

**Typical Physical Properties**

Shore Hardness	56A
100% Modulus, Mpa	2.4
300% Modulus, Mpa	10.0
Tensile, MPa	20.1
Elongation, %	310
Tear Strength, Die C, kN/m	28.5
Tear Strength, (D470), kN/m	1.3
Specific Gravity	1.27

The data contained herein are believed to be reliable. However, there is no guarantee that the same results will be obtained under different conditions. Fit for use testing should be conducted by each user.

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