



Era Polymers Pty. Ltd.
2-4 Green Street, Banksmeadow
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AUSTRALIA
www.erapol.com.au

Erapol EME167/PC56C Series

HIGH PERFORMANCE QUASI POLYESTER BASED
URETHANE ELASTOMER

TECHNICAL DATASHEET

Erapol EME167/PC56C Series is a 3 component system based on MDI-POLYESTER which when reacted can give a hardness of 84 and 92 Shore A.

The **Erapol EME167/PC56C Series** has some clear performance advantages over some of the more traditional high performance polyurethane elastomers. The polyurethane elastomers exhibit excellent physical properties, including good tensile strengths, high resilience and excellent wear characteristics. There are also clear advantages in terms of processing, including low viscosity at processing temperatures and lower chemical hazards when handling the prepolymers and curatives.

Application

The **Erapol EME167/PC56C Series** is ideally suited to machine dispensing, especially where large moldings are required. Typical uses for Erapol EME elastomers are sealing and guide discs for pipeline cleaning, rollers, seals, gaskets, screens and linings.

Product Specification

	EME167 ISOCYANATE PREPOLYMER	PC56C POLYOL CURATIVE	1,4-BUTANEDIOL
% NCO	16.5 ± 0.2	-	-
Specific Gravity at 77°F	1.20	1.18	1.00
Viscosity at 104°F (cps)	600 - 1200	1500 - 2500	70
Appearance	Cloudy yellowish liquid	Pale yellow liquid	Clear liquid

Handling Information

The **Erapol EME167** Isocyanate Prepolymer is based on MDI and not regulated for transport, and so are particularly suited for applications where the use of TDI prepolymers and the generation of TDI vapors might be of a concern. We strongly advise that the products MSDS be read prior to use.



This information is of general nature and is supplied without recommendation or guarantee. It does not make claim to be free from patent infringement. Properties shown are typical and do not imply specification tolerances. Era Polymers cannot accept liability for loss or damage through use. Whilst these technical details are based on expert knowledge, practical experience and laboratory testing, successful application depends upon the nature and conditions in which the products are supplied. Users must, by comprehensive testing, evaluate this product in their own application.

Processing Procedure

Erapol EME167 Isocyanate Prepolymer may need to be melted at 140°F (60°C) if solid. The Curative is liquid at temperatures above 59°F (15°C). **Erapol PC56C** Polyol Curative must be melted at 140°F (60°C), and mechanically mixed before use. If required, degas the curative until excess foaming stops.

1. The **EME167 Isocyanate Prepolymer** should be weighed into unlined metal, plastic or glass containers and heated to the recommended processing temperature 113 - 122°F (45 - 50°C) and thoroughly degassed at -95 kPa of vacuum until excessive foaming stops.
2. The **Polyol Curative PC56C** should be added to the **EME167 Isocyanate Prepolymer** followed by the addition of **1,4-Butanediol**. After adding the **Polyol Curative PC56C** and **Curative** mix thoroughly for 1-2 minutes, being careful not to introduce air into the mixture, and degas at -95 kPa for 1-2 minutes.
3. Pour the mixed polyurethane into molds that have been preheated to 176°F (80°C) and pre-coated with release agent.
4. Post cure in a 176°F (80°C) oven for 16 hours.

Mixing and Curing Conditions

		60A	75A	84A	92A
EME167 Prepolymer	(ppw)	100	100	100	100
PC56C Polyol Curative	(ppw)	183.8	108.0	82.7	56.8
1,4-Butanediol	(ppw)	9.1	12.5	13.7	14.8
Recommended % Theory		98	98	98	98
Iso prepolymer Temperature	(°F)	122	122	122	122
Polyol curative Temperature	(°F)	122 - 145	122 - 145	122 - 145	122 - 145
1,4-Butanediol Temperature	(°F)	122	122	122	122
Mold temperature	(°F)	176	176	176	176
Oven Temperature	(°F)	176	176	176	176
Pot Life	(mins)	4 - 7	3.5 - 6	2.5 - 5	2 - 4
Demold Time at 176°F	(mins)	45 - 60	30 - 45	30 - 45	30 - 45
Post Cure Time at 176°F	(hrs)	16	16	16	16

The above results are based on 2kg of mixed sample with prepolymer at 122°F and polyol curative at 145°F.

Additional Catalysis

The demold times of the **EME167** products can be reduced significantly by using catalysts. Era Polymers strongly suggests contacting the sales team for specific details. Machine processing is advised when rapid demold times are required.