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## Erapol EMD90A

HIGH PERFORMANCE MDI BASED ELASTOMER

### TECHNICAL DATASHEET

**Erapol EMD90A** is a high performance hot castable grade, MDI polyurethane elastomer based on PTMEG polyols. This product is an elastomer with outstanding toughness, rebound and abrasion properties, which is characteristic of MDI systems. **Erapol EMD90A** is normally cured with 1,4-Butanediol (1,4-BDO) to produce an 90 Shore A elastomer.

### Application

This product has been specifically designed for high rebound and properties for dynamic applications.

### Product Specification

	Erapol EMD90A	1,4-BDO
% NCO	7.80 ± 0.25	-
Specific Gravity at 77°F (25°C)	1.02 – 1.08	1.02
Viscosity at 176°F (80°C) (cps)	1000 – 1800	71.5
Appearance	Milky white translucent liquid	Clear liquid

### Mixing and Curing Conditions

Erapol EMD90A	(pbw)	100
1,4-BDO	(pbw)	7.9
Recommended % Theory		95
Erapol EMD90A Temperature	°F (°C)	158-176 (70-80)
1,4-BDO Temperature	°F (°C)	77-86 (25 – 30)
Mixing Time	(min)	1 – 2
Pot Life at 176°F (80°C)	(min)	4 - 6
Mould Temperature	°F (°C)	230-248 (110-120)
Oven Temperature	°F (°C)	230-248 (110-120)
Demould Time at 230°F (110°C)	(min)	60
Post Cure Time at 230°F (110°C)	(hrs)	16

Results based on a 200g sample moulded in a rectangular slab. Demould time will depend on the size and shape of the cast part, the mould temperature and the curing temperature.



This information is of general nature and is supplied without recommendation of 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.

## Physical Properties

Properties presented below are to be used as a guide and not intended for specification purposes.

		EMD90A	TEST METHOD
<b>Hardness</b>	(Shore A)	90	ASTM D2240
<b>Tensile Strength</b>	psi (MPa)	4931 (34)	ASTM D412
<b>100% Modulus</b>	psi (MPa)	1363 (9.4)	ASTM D412
<b>300% Modulus</b>	psi (MPa)	2437 (16.8)	ASTM D412
<b>Elongation</b>	(%)	520	AS1683.11
<b>Angle Tear Strength, Die C</b>	pli (kN/m)	605 (106)	ASTM D624
<b>Trouser Tear Strength</b>	pli (kN/m)	171 (30)	AS1683.12
<b>DIN Resilience</b>	(%)	63	DIN 53512
<b>DIN Abrasion Resistance 10N</b>	(mm <sup>3</sup> )	48	ASTM D5963
<b>Cured Specific Gravity</b>	(g/cm <sup>3</sup> )	1.10	ASTM D1817
<b>Compressive Stress, 10% deformation</b>	psi (MPa)	363 (2.5)	ASTM D575
<b>Compression Set / 22 hr at 70°C</b>	(%)	14.9	ASTM D395

## Processing Procedure

Erapol EMD90A can be mixed by hand or machine dispensed.

1. Heat pre-weighed amount of **Erapol EMD90A** to 158-176°F (70–80°C) and degas at -13.8psi (-95kPa) of vacuum until excessive bubbling stops. Containers should be unlined metal, plastic or glass and should be large enough to allow for foaming during degassing.
2. Carefully weight correct proportion of the **1,4-Butanediol** into **Erapol EMD90A** and mix thoroughly. Be careful not to entrap air whilst mixing. If there are a lot of bubbles in the sample at this stage, the mixed material can be degassed again.
3. Pour the mixed system into moulds preheated to 230°F (110°C) and pre-coated with release agent, being careful to avoid trapping air.
4. Cure in accordance with above recommendations.

## Adhesion

Adhesion of Erapol based elastomers to various substrates is at best marginal if a primer is not used. Please consult Era Polymers for specific recommendations to improve adhesion.

## Handling Precautions

NOTE: Both components are moisture sensitive and care should be exercised in keeping moisture away. Once opened, containers should be purged with nitrogen if they are to be stored for a period of time. Below 59°F (15°C) **Erapol EMD90A** will appear as a white wax like substance and can be melted overnight by placing the drum or pail in a fan forced hot box at 158-176°F (70–80°C) - do not exceed 176°F (80°C).

**Erapol EMD90A** should be used in well-ventilated area. Avoid breathing in vapours and protect skin and eyes from contact. In case of skin contact remove excess, wash with soap and water. For eye contact, immediately flush with water for at least 15 minutes. Call a physician. If nose, throat or lungs become irritated from breathing in vapours, remove exposed person to fresh air. Call a physician.