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## Erapol EMD52D Series

HIGH PERFORMANCE MDI BASED ELASTOMER

### TECHNICAL DATASHEET

**Erapol EMD52D** is a high performance hot castable grade, MDI polyurethane elastomer based on PTMEG polyols.

This product is an elastomer with outstanding toughness and abrasion properties, which is characteristic of MDI systems. This product has been specifically designed for the rebound properties and high hardness for skateboard wheels.

### Product Specification

	EMD52D ISOCYANATE PREPOLYMER	XPE16-2092 POLYOL CURATIVE	XPE16-2088 POLYOL CURATIVE
%NCO	10.6 ± 0.2	-	-
Equivalent Weight	-	70.5 – 71.5	76.6 – 77.6
Specific Gravity at 77°F	1.05	1.01	1.01
Viscosity (cps)	400 – 1000 at 176°F (80°C)	450 – 750 at 77°F (25°C)	300 - 600 at 77°F (25°C)
Appearance	Milky White translucent liquid	Cloudy liquid	Yellow liquid

### Mixing and Curing Conditions

		EMD52D/1,4-BDO	EMD52D/XPE16-2092	EMD52D/XPE16-2088
Erapol EMD52D	(pph)	100	100	100
Curative Level	(pph)	10.8	17	18
Recommended % Theory		95	95	95
Erapol Temperature	°F (°C)	167-176 (75-80)	176 (80)	77 (25)
Curative Temperature	°F (°C)	77-86 (25-30)	77 (25)	77 (25)
Pot Life*	(mins)	2 - 3	2.5 - 3.5	7 - 9
Mould Temperature	°F (°C)	230 (110)	230 (110)	176 (80)
Oven Temperature	°F (°C)	230 (110)	176 (80)	176 (80)
Demould Time	(mins)	45	30	60
Post Cure Time	(hrs)	16	16	16

\* The pot life is based on a 200g mix. In general, larger quantities will have a shorter pot life, smaller quantities will have a longer pot life.



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.

## Physical Properties

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

		EMD52D/1,4-BDO	EMD52D/XPE16-2092	EMD52D/XPE16-2088	TEST METHOD
Hardness	(Shore A)	-	95	95	ASTM D2240
Hardness	(Shore D)	52	-	-	ASTM D2240
Tensile Strength	psi (MPa)	5221 (36)	3365 (23.2)	4279 (29.5)	ASTM D412
100% Modulus	psi (MPa)	1900 (13.1)	1668 (11.5)	1682 (11.6)	ASTM D412
200% Modulus	psi (MPa)	2422 (16.7)	2205 (15.2)	2161 (14.9)	ASTM D412
300% Modulus	psi (MPa)	3046 (21.0)	2828 (19.5)	2712 (18.7)	ASTM D412
Elongation	(%)	450	380	510	ASTM D412
Angle Tear Strength, Die C	pli (kN/m)	828 (145)	670 (117.3)	530 (92.9)	ASTM D624
Split Tear Strength	pli (kN/m)	-	146 (25.6)	155 (27.2)	ASTM D470
DIN Resilience	(%)	49	61	57	DIN 53512
Bashore Rebound	(%)	-	45	49	ASTM D2632
DIN Abrasion Resistance 10N	(mm <sup>3</sup> )	45	47	55	ASTM D5963
Cured Specific Gravity	(g/cm <sup>3</sup> )	1.10	1.12	1.11	ASTM D1817
Compression Set / 22 hrs at 158°F (70°C)	(%)	-	27	20	ASTM D395, B

## Processing Procedure

Below 59°F (15°C), **EMD52D Prepolymer** will appear as a white wax like substance. The **EMD52D** can be melted overnight by placing the drum or pail in a fan forced hot box at 158-176°F (70-80°C). Care should be exercised in keeping moisture away from the **EMD52D**. Do not exceed a temperature of 176°F (80°C) when melting out the **EMD52D**.

1. The **curative (Part B)** must be mechanically mixed before use. If required, degas the curative until excess foaming stops.
2. Heat pre-weighed amounts of **Erapol EMD52D prepolymer (Part A)** to 176°F (80°C) and degas at -95kpa of vacuum for at least 5 minutes or until excessive bubbling stops. Containers should be unlined metal, plastic or glass and should be large enough to allow for foaming during degassing.
2. Weigh the **curative** into the **prepolymer** and mix thoroughly. Take care not to entrap air whilst mixing. If possible, degas the mixed material at -95kpa for 1 to 2 minutes or until foaming stops.
4. Pour mixed system into molds, preheated to the correct temperature, that have been coated with release agent.
5. Cure in accordance with above recommendations.

Note: Both the prepolymer and curative are sensitive to moisture. Once opened, the containers should be purged with dry nitrogen to protect against moisture contamination.



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## Handling Precautions

**Erapol EMD52D Series** 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.