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Erapol EMD950A

HIGH PERFORMANCE MDI ELASTOMER

TECHNICAL DATASHEET

Erapol EMD950A 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. **Erapol EMD950A** is normally cured with 1,4 butanediol (1,4-BDO) to produce a 95 Shore A elastomer.

Application

This product has been specifically designed for the rebound properties and high hardness for skateboard wheels.

Product Specification

	EMD950A (A)	1,4-BDO (B)
% NCO	9.6 ± 0.25	–
Specific Gravity at 77°F (25°C)	1.02 – 1.08	1.017
Viscosity at 176°F (80°C) (cps)	800 – 1200	71.5
Appearance	Milky White, translucent liquid	Clear Liquid

Mixing and Curing Conditions

EMD950A (A)	(pbw)	100
1,4-BDO (B)	(pbw)	9.8
Recommended % Theory		95
EMD950A Temperature	°F (°C)	158 – 176 (70 – 80)
1,4-BDO Temperature	°F (°C)	77 – 86 (25 – 30)
Mixing Time	(mins)	1 – 2
Pot Life at 176°F (80°C)	(mins)	3 – 5
Mold Temperature	°F (°C)	212 – 230 (100 – 110)
Oven Temperature	°F (°C)	212 – 230 (100 – 110)
Demold Time at 230°F (110°C)	(mins)	45
Post Cure Time at 230°F (110°C)	(hrs)	16



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Physical Properties

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

		EMD950A/1,4-BDO	TEST METHOD
Hardness	(Shore A)	95	ASTM D2240
Tensile Strength	psi (MPa)	4221 (29.1)	ASTM D412
100% Modulus	psi (MPa)	1610 (11.1)	ASTM D412
200% Modulus	psi (MPa)	2132 (14.7)	ASTM D412
300% Modulus	psi (MPa)	2741 (18.9)	ASTM D412
Elongation	(%)	495	ASTM D412
Angle Tear Strength, Die C	pli (kN/m)	691 (121)	ASTM D624
Split Tear Strength	pli (kN/m)	447 (78.3)	ASTM D470-05
DIN Resilience	(%)	60	DIN 53512
Bashore Rebound	(%)	56	ASTM D2632
DIN Abrasion Resistance 10N	(mm ³)	43	ASTM D5963
DIN Abrasion Resistance 15N	(mm ³)	21	ASTM D5963
Cured Specific Gravity	(g/cm ³)	1.11	ASTM D1817
Compression Set / 22 hr at 70°C	(%)	24	ASTM D395, B

Erapol EMD950A can be mixed by hand and can also be machine dispensed.

NOTE: Both Part A and Part B components are moisture sensitive. Once opened, containers should be purged with nitrogen if they are to be stored for a period of time.

Below 59°F (15°C), the Part A will appear as a white wax like substance. The Part A 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 Part A. Do not exceed a temperature of 176°F (80°C) when melting out the Part A.

Processing Procedure

1. Heat pre-weighed amounts of **Erapol EMD950A** (Part A) to 158 – 176°F (70 – 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. Carefully weigh the correct proportion of the **1,4-butanediol** into Part A and mix thoroughly. Be careful not to entrap air whilst mixing and degas at -95Kpa for 1 to 2 minutes.
3. Pour the mixed materials into molds that have been pre-heated 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

Consult the product's material safety data sheet (MSDS) for specific hazard and handling information before use.

Erapol EMD950A should be used in well-ventilated area. Avoid breathing in vapors 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 vapors, remove exposed person to fresh air. Call a physician.