

Adiprene® Duracast® S700

Polyurethane (Polyester, MDI)

Chemtura

Message:

ADIPRENE DURACAST S700 is an MDI-terminated polyester prepolymer having low free MDI content. A high performance 70A elastomer with excellent physical properties is obtained when this prepolymer is chain extended with DURACURE™ C3 or C3-LF. Other advantages are improved processing characteristics and easier management of health & safety during handling.

The unique combination of properties exhibited by low free MDI prepolymers is superior to those available from TDI and conventional MDI prepolymers. DURACAST prepolymers cured with DURACURE C3 or C3-LF provide a superior hard segment and offer unique processing and productivity improvements. This high performance hard segment offers excellent physical and engineering properties, including high cut and tear resistance, improved flex fatigue, low temperature flexibility, excellent dynamics (at both low and high temperatures) and other high temperature properties. Traditionally, amine cures could not be used with MDI prepolymers due to high reactivity (short pot life) even though they offer some performance advantages such as high temperature resistance and tear properties. It also offers EH&S advantages as it is based on low free monomer technology and is a MBOCA free system.

General Information			
Features	Good Tear Strength		
	Heat Cure		
	Low Temperature Flexibility		
Physical	Nominal Value	Unit	Test Method
Specific Gravity ¹	1.15	g/cm ³	ASTM D792
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness ² (Shore A)	70		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Abrasion Loss - Relative vol loss			
-- ³	16.0	mm ³	
-- ⁴	19.0	mm ³	
Rebound Resilience - Drop Ball			
-- ⁵	58	%	
-- ⁶	58	%	
Abrasion Index			
DIN ⁷	757		
DIN ⁸	842		
NBS ⁹	830	%	
NBS ¹⁰	1500	%	
Films	Nominal Value	Unit	Test Method
Trouser Tear Resistance			ASTM D1938
-- ¹¹	39.9	N/mm	
-- ¹²	39.4	N/mm	
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress			ASTM D412
100% Strain ¹³	2.48	MPa	

100% Strain ¹⁴	2.83	MPa	
300% Strain ¹⁵	3.60	MPa	
300% Strain ¹⁶	4.16	MPa	
Tensile Strength			ASTM D412
-- ¹⁷	18.7	MPa	
-- ¹⁸	23.0	MPa	
Tensile Elongation			ASTM D412
Break ¹⁹	920	%	
Break ²⁰	850	%	
Tear Strength			
--	53.6	kN/m	ASTM D624
--	49.0	kN/m	ASTM D624
Split ²¹	12	kN/m	ASTM D470
Split ²²	15	kN/m	ASTM D470
Compression Set			ASTM D395B
70°C, 22 hr ²³	28	%	
70°C, 22 hr ²⁴	32	%	
100°C, 22 hr ²⁵	41	%	
100°C, 22 hr ²⁶	53	%	
Bayshore Resilience			ASTM D2632
-- ²⁷	53	%	
-- ²⁸	53	%	
Thermoset	Nominal Value	Unit	
Pot Life (70°C)	240 to 360	min	
Demold Time			
120°C	20	min	
140°C	10	min	
Post Cure Time			
120°C ²⁹	16 to 24	hr	
140°C ³⁰	16 to 24	hr	
NOTE			
1.	Post cure 140°C (24 hrs.)		
2.	Post cure 140°C (24 hrs.)		
3.	Post cure 120°C (24 hrs.)		
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27.	Post cure 140°C (24 hrs.)
28.	Post cure 120°C (24 hrs.)
29.	Standard
30.	High Performance

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