

Material
HandlingOffshore
Energy

Mine

Ind.
Tooling**DIPRANE™ C320/55 Polyol**

Four Component Elastomer System

Introduction

DIPRANE™ 320 is polyester based urethane system offering excellent solvent resistance, which can be used for the production of a range of polyurethane elastomers from 55 to 90 Shore A hardness.

The DIPRANE™ 320 Series has been specially developed to combine the DIPRANE™ 31 Prepolymer, DIPRANE™ C320 Polyol and DIPRANE™ E chain extender with a catalyst package which is introduced at the mixing head. This offers the user the ability to tailor the reactivity to suit the moulding process.

Component Properties

Component	Units	DIPRANE™ C320/55 Polyol	DIPRANE™ E Chain Extender	DIPRANE™ 31 Prepolymer	DIPRANE™ LC 1020PL Catalyst
Appearance	N/A	White waxy solid @ 25°C	Colourless clear liquid @ 25°C	Brown liquid @ 25°C	Pale amber liquid @ 25°C
Viscosity	poise	15 – 25°C		5 – 11 @ 25°C	
Specific Gravity	N/A	1.12 - 1.20 @ 50°C	1.01 - 1.02 @ 20°C	1.2 – 1.22 @ 25°C	1.07 @ 20°C

Typical Physical Properties

Shore Hardness	BS EN ISO 868	55A	65A	75A	85A	90A
Tensile Strength, MPa	BS 903 Pt A2	29	35	45	42	40
100% Modulus	BS 903 Pt A2	1.7	2.8	4.3	6.7	10.4
Elongation at Break, %	BS 903 Pt A2	575	550	540	520	510
Angle Tear Strength, N/mm	ISO 34 – Pt B, Proc A	45	66	78	92	120
Split Tear Strength	ASTM D470	9.5	11	13	21	28
DIN Abrasion Resistance, mm ³	DIN 53516	25	25	25	25	25

Mixing Ratios

Shore Hardness		55A	65A	75A	85A	90A
DIPRANE™ C320/55 Polyol, pbw		218.4	179.1	123.8	90	69.5
DIPRANE™ E Chain Extender, pbw		0	2.73	6.52	8.91	10.3
DIPRANE™ 31 Prepolymer, pbw		100	100	100	100	100
DIPRANE™ LC 1020PL Catalyst		Loading should be determined experimentally by the user, suggested addition levels are between 0.3% to 1.0% of total system weight.				

Processing Conditions

	Units	DIPRANE™ C320/55 Polyol	DIPRANE™ E Chain Extender	DIPRANE™ 31 Prepolymer	DIPRANE™ LC 1020PL Catalyst
Melting Temperature	°C	60	n/a	n/a	n/a
Mixing Required		Yes	No	No	Yes
Processing Component Temperature	°C	55 - 60	40	35 – 45°C	20-30
Mold Temperature	°C		80°C		
Demolding Time	minutes		40		
Gel Time	minutes		2 – 9		
Post Cure Temperature	°C		80		
Post Cure Time	hours		16		

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