



MOTUF

Design Description

Motuf is a high strength engineering plastic suitable for bearings, bushing and back-up ring applications. This flexible bearing material provides increased thermal stability, elongation and abrasion resistance. It also displays good, low temperature impact resistance, high dimensional stability, favorable frictional properties (triple lubricated) and low water absorption.

Features

- High performance urethane plastic
- Thermoset polyurethane
- Low compression set
- Excellent hot water resistance
- Resistance in HFA, HFB hydraulic fluids and using biologically reducible hydraulic fluids
- Outstanding toughness & abrasion for high pressure applications
- Mineral oil compatibility is good
- Good resistance to ozone attack & weathering
- Low compression set, excellent hot water resistance, resistance in HFA/HFB and HFC hydraulic fluids and

Properties	Standard	Unit	Value
Hardness	DIN 53505	Shore D	85D
Density	DIN 53479	g/cm ³	1.2
Tensile strength	DIN 53504	MPa	42
Elongation at break	DIN 53504	%	165
100% Modulus	DIN 53504	MPa	42
200% Modulus	DIN 53504	MPa	49.3
Compression set 70 °C/70h	DIN 53517	%	40
Tear strength: with nick	DIN 53515	KN/m	146
Abrasion loss	DIN 53516	mm ³	102
Minimum application temperature		°C	-50
Maximum application temperature		°C	130
Swell in water		%	0.3-0.4 max

Thermal	Unit	Value
Melting Point	°C	216
Thermal Conductivity	W/M°C	0.25
Specific Heat	KJ/kg°C	1.67
Co-efficient of Linear Expansion	10 ⁶ /°	70-80
Safe Temp- Short Period	°C	180
Safe Temp- Continuous	°C	-150
Heat Distortion Temp (Martens)	°C	80



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Comparison of MOTUF with varied bearing materials

	Loading Limit kg/cm ²	Thermal Expansion 10 ⁻⁵ c/cm/°C	Water Absorption	Friction Tests. Load = 0.86KG/CM ²		
				Temper Rise of Steel Journal After 30 mins		
				No Lubrication	Initial Lubrication	
				50 Metres/Min	50 Metres/Min	160 Metres/Min
PTFE Unfilled	50	17	0	24°C (worn)	15°C	-
HD Polyurethane	100	25	0.01	22°C (seized)	14°C	Seized
Nylon 6	200	9	9	28°C (seized)	15°C	Seized
OZ Monyt	305	5	0.4	22°C	6°C	14°C
Phosphor Bronze	800	1.8	0	38°C (worn)	20°C	69°C