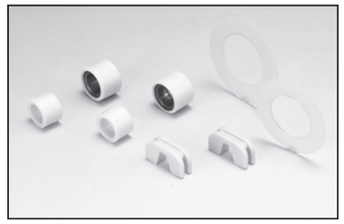
Oiles 83 Polyamide bearings with fillers



RoHS2 ELV Lead Free

Feature

- Serviceable without the need for lubrication.
- The non-organic-fiber-filled grade products feature high strength, superior impact resistance, and low linear expansion coefficient.
- Features superior wear resistance and heat resistance.
- Demonstrates superior wear resistance in abrasive conditions due to foreign matter, coarse surfaces of mating parts, rust, etc.
- Injection-molded and can be made in complicated shapes. Has good mass productivity.

Service range	83-24	83-90
Lubrication condition	Dry	
Service temperature range ℃	−40～+140	−40～+140
Allowable max. pressure P N/mm² {kgf/cm²}	10.0 {102}	19.5 {199}
Allowable max. velocity V m/s {m/min}	0.35 {21}	0.35 {21}
Allowable max. PV value N/mm²・m/s {kgf/cm²・m/min}	1.00 {612}	2.45 {1,500}

83-24 Test data

Thrust test

<Testing condtions>

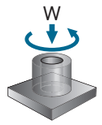
Mating material : S45C (surface roughness Rz3μm)

Pressure : 0.98N/mm² {10.0kgf/cm²}
1.96N/mm² {20.0kgf/cm²}

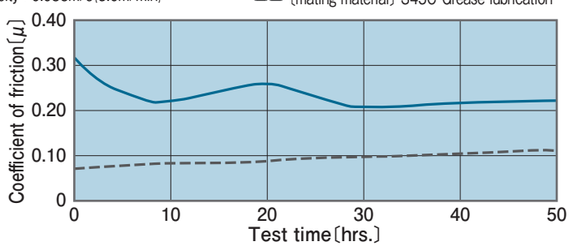
Velocity : 0.083m/s {5m/min}
0.033m/s {2m/min}

Test time : 50hrs.

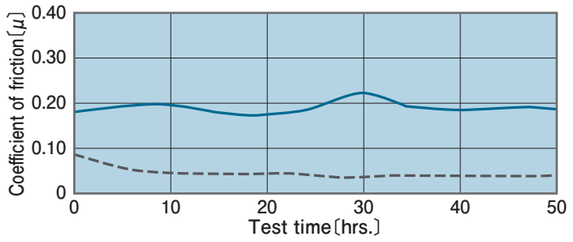
Lubrication : grease lubrication, Dry



Contact pressure : 0.98N/mm² {10.0kgf/cm²} — {mating material} S45C・Dry
Velocity : 0.083m/s {5.0m/min} -- {mating material} S45C・Grease lubrication



Contact pressure : 1.96N/mm² {20.0kgf/cm²} — {mating material} S45C・Dry
Velocity : 0.033m/s {2.0m/min} -- {mating material} S45C・Grease lubrication



Mechanical properties			83-24	83-90
Specific gravity	ASTM D 792	——	1.23	1.40
Tensile strength	ASTM D 638	N/mm² {kgf/cm²}	80.4 {820}	117 {1,190}
Tensile elongation at break	ASTM D 638	%	5	2
Flexural property	ASTM D 790	N/mm² {kgf/cm²}	123 {1,250}	190 {1,940}
Flexural modulus	ASTM D 790	N/mm² {kgf/cm²}	2,840 {29,000}	6,760 {69,000}
Compressive stress 1% deformation	ASTM D 695	N/mm² {kgf/cm²}	——	38.2 {390}
Compressive stress 10% deformation			——	108 {1,100}
Hardness	ASTM D 785	HRM	80	86
Izod impact strength (with notch)	ASTM D 256	J/m {kgfcm/cm}	——	64 {6.5}
Co-efficient of linear expansion	ASTM D 696	×10⁻⁵ ℃⁻¹	——	2～4
Deflection temperature under load 1.82 MPa	ASTM D 698	℃	176	213
Melting point	DSC	℃	292	225
UL incombustibility	UL94	File No.E78113	HB	——

※The values shown above are typical values, not the standard values.

83-90 Test data

Journal oscillation test

<Testing conditions>

Bearing dimension : φ40×φ50× ℓ 30

Mating material : S45C (surface roughness Rz1.5μm)

Pressure : 19.6N/mm² {200.0kgf/cm²}

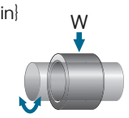
Velocity : 0.007m/s {0.42m/min}

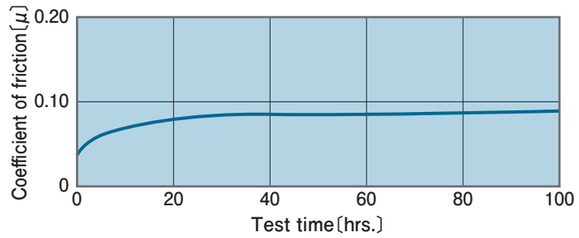
Oscillating cycle : 10cpm

Oscillating angle : ±35°

Test time : 100hrs.

Lubrication : grease is applied at assembly





Journal oscillation test

<Testing conditions>

Bearing dimension : φ125×φ140× ℓ 32

Mating material : S45C

Contact pressure : 13.4N/mm² {137.0kgf/cm²}

Velocity : 0.004m/s {0.24m/min}

Oscillating cycle : 6cpm

Oscillating angle : 18°

Oscillating frequency : 100,000cycle

Test time : 278hrs.

Lubrication : grease is applied at assembly