

The first antibacterial iglidur® plain bearing

According to ISO 22 196:2011

iglidur® AB



When to use it?

- When bearing points must meet high hygienic standards
- When a universal plain bearing for manual applications is required
- When a plain bearing for low to medium loads is required



When not to use?

- When a wear-resistant plain bearing is required for continuous dry operation
iglidur® J3
- When a plain bearing that conforms with Regulation (EU) No. 10/2011 and/or the FDA requirements for repeated contact with food is required
iglidur® A181, iglidur® A350
- When a plain bearing with the highest possible media resistance is required
iglidur® X

Bearing technology | Plain bearing | iglidur® AB



Ø
6.0 – 20.0mm



Also available
as:



Bar stock,
round bar
Page 657



Bar stock,
plate
Page 683



tribo-tape liner
Page 691



Piston rings
Page 581



Two hole
flange
bearings
Page 603



Moulded
special parts
Page 624



igubal®
spherical balls
Page 841

The first antibacterial iglidur® plain bearing According to ISO 22 196:2011

Plain bearings made from iglidur® AB help to reduce the bacteria in bearing points that are difficult to access.

- Antibacterial
- Universal installation
- High media resistance
- Lubrication-free
- Maintenance-free

Typical application areas

- Medical technology
- Laboratory technology
- Ventilation systems
- Sanitary furniture and equipment
- Bearings of patient and care furniture

Descriptive technical specifications

Wear resistance at +23°C	-		+
Wear resistance at +90°C	-		+
Wear resistance at +150°C	-		+
Low coefficient of friction	-		+
Low moisture absorption	-		+
Wear resistance under water	-		+
High media resistance	-		+
Resistant to edge pressures	-		+
Suitable for shock and impact loads	-		+
Resistant to dirt	-		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.11	
Colour		yellow	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.8	ISO 175
Max. moisture absorption	% weight	1.6	ISO 62
Coefficient of friction, dynamic, against steel	μ	0.18 – 0.31	
pv value, max. (dry)	MPa · m/s	0.25	
Mechanical properties			
Flexural modulus	MPa	1,850	DIN EN ISO 178
Flexural strength at +20°C	MPa	50	DIN EN ISO 178
Compressive strength	MPa	40	
Max. recommended surface pressure (+20°C)	MPa	25	
Shore D hardness		70	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+70	
Max. application temperature short-term	°C	+140	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	10	DIN 53752
Electrical properties			
Specific contact resistance	Ωcm	>10 ¹²	DIN IEC 93
Surface resistance	Ω	>10 ¹²	DIN 53482

Table 01: Material properties

iglidur® AB was specially developed for applications in areas with hygienic requirements. These types of applications often involve manually actuated pivoting units (doors, furniture in the medical sector, etc.). The material reduces the level of bacterial contamination but – like all "anti-bacterial" materials – is not a substitute for adequate hygienic measures.

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® AB plain bearings is approximately 0.8% weight. The saturation limit in water is 1.6% weight.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® AB bearings.

Radiation resistance

Plain bearings made from iglidur® AB are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

Resistance to weathering

iglidur® AB plain bearings have limited resistance to weathering. The material properties are affected. Discoloration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® AB plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® AB at radial loads. A possible deformation could be, among others, dependant on the duty cycle of the load.

Surface pressure, page 41



-40°C up to
+70°C



25MPa



HB



RoHS



ISO
35474

Permissible surface speeds

iglidur® AB is mainly suitable for low surface speeds in dry operation, but the specified values shown in table O3 can only be achieved at very low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 44

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +60°C. For temperatures over +50°C an additional securing is required.

Application temperatures, page 49

Additional securing, page 49

Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams O4 and O5).

Coefficient of friction and surfaces, page 47

Wear resistance, page 50

Shaft materials

The friction and wear are also dependent, to a large degree, on the shaft material. Shafts that are too smooth, increase both the coefficient of friction and the wear of the bearing. Diagram O6 shows results of testing different shafts. When rotating at a load of 1MPa, the wear on all tested shafts is very similar. Only the hard-anodised aluminium shafts cause a noticeable increase in the wear. As illustrated in diagram O7, the wear rate from pivoting and rotational movements at loads in increasing levels is also quite similar if the remaining parameters are identical.

Shaft materials, page 52

Installation tolerances

iglidur® AB plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the E10 tolerances. In relation to the installation tolerance, the inner diameter changes with the absorption of humidity. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 57

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All information given at room temperature [+20°C]

Table O2: Chemical resistance

Chemical table, page 1636

		Rotating	Oscillating	linear
long-term	m/s	0.7	0.5	1.0
short-term	m/s	1.0	0.7	1.8

Table O3: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.18 – 0.31	0.09	0.04	0.04

Table O4: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing		Plain bearing		Shaft	
	H7 [mm]	E10 [mm]	H7 [mm]	E10 [mm]	h9 [mm]	h9 [mm]
0 – 3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3 – 6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6 – 10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10 – 18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18 – 30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30 – 50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50 – 80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80 – 120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120 – 180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table O5: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

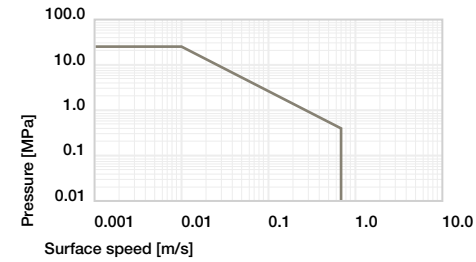


Diagram O1: Permissible pv values for iglidur® AB plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

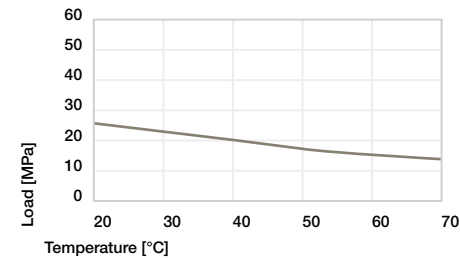


Diagram O2: Maximum recommended surface pressure as a function of temperature (25MPa at +20°C)

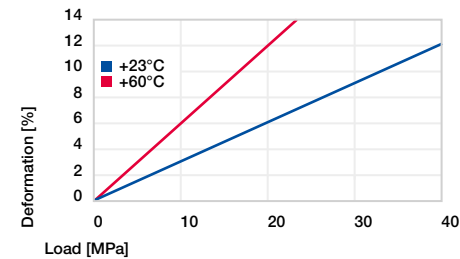


Diagram O3: Deformation under pressure and temperature

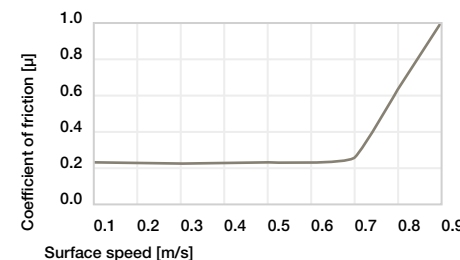


Diagram O4: Coefficient of friction as a function of the surface speed, p = 1MPa

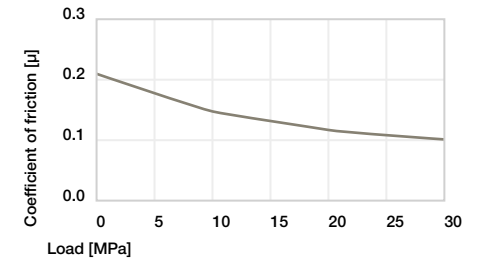


Diagram O5: Coefficient of friction as a function of the load, v = 0.01m/s

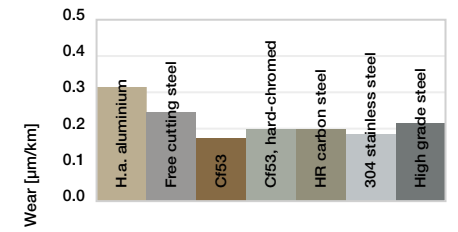


Diagram O6: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

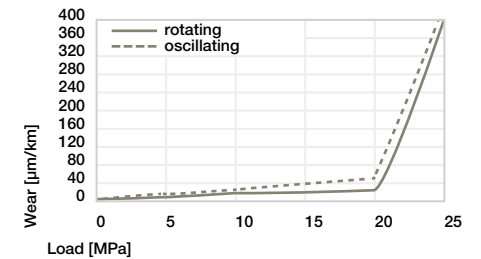
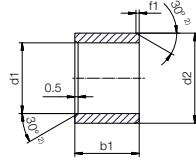


Diagram O7: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearing | iglidur® AB

Sleeve bearing (form S)



²⁾ Thickness < 0.6mm: Chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: ABSM-0608-06 – no minimum order quantity.

AB iglidur® material S Sleeve bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	6.0	ABSM-0608-06
8.0	+0.025 +0.083	10.0	10.0	ABSM-0810-10
10.0		12.0	10.0	ABSM-1012-10
12.0	+0.032 +0.102	14.0	15.0	ABSM-1214-15
15.0		17.0	15.0	ABSM-1517-15
20.0	+0.040 +0.124	23.0	20.0	ABSM-2023-20

³⁾ After press-fit. *Testing methods, page 57*



Available from stock

Detailed information about delivery time online.

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Online ordering

Including delivery times, prices, online tools

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Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

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10 – 24	100 – 199	1,000 – 2,499
25 – 49	200 – 499	2,500 – 4,999

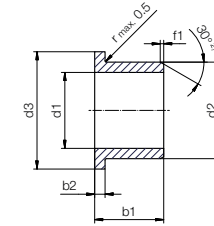
No minimum order value.

No low-quantity surcharges.

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Flange bearing (form F)



²⁾ Thickness < 0.6mm: Chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: ABFM-0608-08 – no minimum order quantity.

AB iglidur® material F Flange bearing M Metric 06 Inner Ø d1 08 Outer Ø d2 08 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	12.0	8.0	1.00	ABFM-0608-08
8.0	+0.025 +0.083	10.0	15.0	9.5	1.00	ABFM-0810-09
10.0		12.0	18.0	12.0	1.00	ABFM-1012-12
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	ABFM-1214-12
15.0		17.0	23.0	12.0	1.00	ABFM-1517-12
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	ABFM-2023-21

³⁾ After press-fit. *Testing methods, page 57*



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