

Sintered bearing Porite ASO

Porite ASO is a low cost powder for sintered bearings having similar properties to bronze bearings.

[Characteristics]

- Lower powder cost compared to present Fe-Cu materials was achieved.
- The hard impurities in Fe powder (SiO_2 , Al_2O_3 , etc) are reduced, as a result the attack on the shaft material is prevented and reliability is improved.
- Superior corrosion resistance compared to Fe type and present Fe-Cu type (BCF) material. (The oxidizing ingredient zinc covers the metal surface with an oxide film hence increasing the corrosion resistance.)
- Permeability is lower than the present Fe-Cu materials. (By reducing the permeability, the film formed during shaft rotation is stronger and as a result the sliding property is improved. Furthermore, the oil leakage is controlled and the contamination of the bearing periphery can be achieved.)
- Conforms to ELV and ROHS.

[Applications]

- In-car use
- Office equipment
- Other general purpose applications

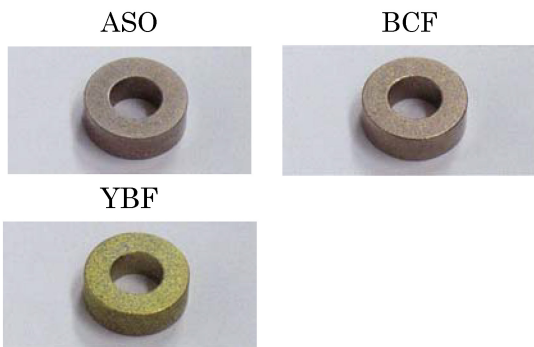
[Chemical composition (weight%)]

	Cu	Fe	Sn	Zn	C	Others
ASO	15~23	Bal	0.5~3.0	0.1~3	2Max	1Max
BCF	40~48	Bal	3~6	-	2Max	1Max
YBF	Bal	32~52	0.2~2	11~17	2Max	1Max

[Physical characteristics]

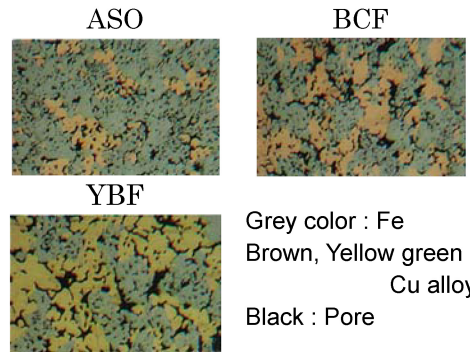
Density	: 5.7~6.5	$[\times 10^3 \text{Kg/cm}^3]$
Porosity	: 18 Min	[Vol.%]
Crushing strength	: 200 Min	[MPa]
PV value	: 2.0	[MPa · m/s]

[Bearing outer appearance]

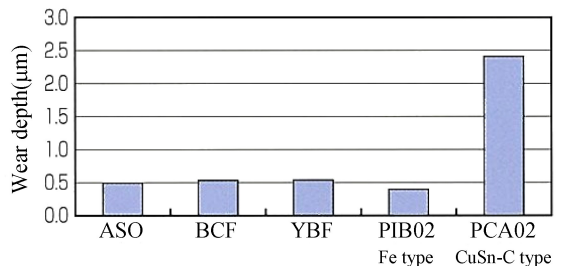
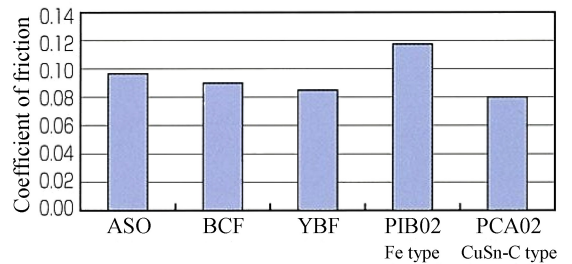


[Metallographic structure]

The Fe part of ASO material is a soft ferrite phase which is similar to BCF and YBF materials. Moreover, compared to present materials, the pores are finer and therefore permeability is improved.



[Bearing properties(Comparison test with present materials)]



Bearing: ID ϕ 4×OD ϕ 7×L3(mm) Load: 1.5MPa
 Oil: PSL-4 (60.5cSt/40°C) Rot: 3000rpm
 Porosity: 21vol.% Run time: 2hr
 Shaft: SUS420J2(0.3S Max) Test no.: n=3
 Clearance: 10 μ m Temp.: normal

[Lubricating oil]

The impregnating oil may change depending on the various operating conditions, please discuss with technical department personnel.

Overseas:

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