

# Product Information Sheet

ISSUE C

## ALLOY PB2

A. W. Fraser Alloy PB2 is a phosphor bronze, commonly referred to as "Gear Bronze", which conforms to the requirements of B.S. 1400 - 1985 alloy PB2.

PB2 has good machining properties, high strength and good corrosion resistance to seawater and brine, making it suitable for pump and valve components.

PB2 is suitable for bearings having medium to high loads and speeds, and has good resistance to impact loading or pounding. PB2 bearings must have adequate lubrication and good alignment.

PB2 is suitable for heavy duty gears and wormwheels with high working loads and high speeds and adequate lubrication and alignment.

The composition of A. W. Fraser alloy PB2 is strictly controlled as are the casting conditions. Alloy PB2 products are manufactured using the latest continuous and centrifugal casting technology.

<b>ALLOY PB2 - PHOSPHOR BRONZE (88-12)</b>	<b>SUMMARY OF PROPERTIES</b>
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### Chemical Composition - percent

Element		Nominal	
Tin	Sn	11.0 - 13.0	11.5
Lead	Pb	0.50 maximum	
Zinc	Zn	0.30 maximum	
Nickel	Ni	0.50 maximum	
Iron	Fe	0.10 maximum	
Aluminium	Al	0.01 maximum	
Phosphorus	P	0.15 - 0.6	0.35
Copper	Cu	Balance	
Total Impurities		0.20 maximum	

### Mechanical Properties [Typical]

	Continuous Cast	Centrifugal Cast
Yield Strength	190 MPa (27,500 psi)	180 MPa (26,000 psi)
Ultimate Tensile Strength	340 MPa (49,000 psi)	300 MPa (43,500 psi)
Elongation	10%	10%
Typical Hardness	100 - 150 BHN	100 - 150 BHN
Specific Gravity	8.8	
Machinability Rating (Free Machining Brass=100)	30	
Max. Operating Temperature	250°C (482°F)	
Stress Relieving Temperature	260°C (500°F)	
Time at Temperature	1 hour per 25mm of section thickness	

### Comparative Specifications

BS1400 - PB2; AS1565 - 90810; ASTM B427 - C90800; ASTM B505 & B271 - C90700\*, SAE 65\*, JIS H5121 - CAC502C (PBC2C)\*; DIN 1705 - G - CuSn12; ISO 1338 - CuSn11P

\* Similar but not identical