Product Information Sheet

ISSUE A

ALLOY CuSn12Ni

A. W. Fraser Alloy CuSn12Ni is a nickel bearing tin bronze meeting the requirements of DIN 1705 - 1981 alloy GC - CuSn12Ni.

This alloy has improved strength and wear resistant characteristics and is corrosion resistant and sea water resistant to cavitation stresses.

CuSn12Ni is suitable for higher stressed fast running worm wheel rims and helical gear wheel rims. It also has uses in severely stressed housings for fittings and pumps, guide wheels, runners and bucket wheels for wheels for pumps and water turbines.

The composition of A. W. Fraser alloy CuSn12Ni is strictly controlled as are the casting conditions. CuSn12Ni products are manufactured using the latest continuous casting technology.

ALLOY CuSn12Ni SUMMARY OF PROPERTIES

Chemical Composition - percent

Element			Nominal
Tin	Sn	11.0 - 13.0	11.5
Lead	Pb	0.30 maximum	
Zinc	Zn	0.40 maximum	
Nickel	Ni	1.5 – 2.5	2.2
Iron	Fe	0.20 maximum	
Aluminium	Al	0.01 maximum	
Phosphorus	P	0.2 maximum	
Copper	Cu	84.0 – 87.0	86.0
Total Impurities		0.5 maximum	

Mechanical Properties [Typical]	Continuous Cast
Yield Strength	210 Mpa (31,000 psi)
Ultimate Tensile Strength	360 MPa (52,000 psi)
Elongation	14%
Typical Hardness	115 BHN
Specific Gravity	8.6
Machinability Rating (Free Machining Brass=100)	
Max. Operating Temperature	250^{O}C (482^{O}F)
Stress Relieving Temperature	260^{O}C (500^{O}F)
Time at Temperature	1 hour per 25mm of section thickness

Comparative Specifications

C91700*, C91600*

* similar but not identical