Kormax Alloy 863
MANGANESE BRONZE

Material Data Sheet

Kormax Alloy 863 is a high strength manganese bronze or high tensile brass conforming to the requirements of UNS C86300.
Alloy 863 has exceptional strength, good wearing properties and good ductility, but has poor machinability. It is suitable for extra heavy duty slow speed bearings with good lubrication and for hydraulic cylinder components.
Alloy 863 has reasonable corrosion resistance but may be susceptible to dezincification under certain conditions.
The composition of Kormax alloy 863 is strictly controlled as are the casting conditions. Alloy 863 products are manufactured using the latest continuous and centrifugal casting technology.

Chemical Composition (%)

Element			Nominal
Copper	Cu	60.0 - 66.0	63.0
Aluminium	Al	5.0 - 7.5	6.0
Iron	Fe	2.0 - 4.0	3.0
Manganese	Mn	2.5 - 5.0	3.5
Nickel	Ni	1.0 maximum	
Tin	Sn	0.2 maximum	
Lead	Pb	0.2 maximum	
Zinc	Zn	Balance	

Mechanical Properties

	Continuous Cast	Centrifugal Cast
Yield Strength	450 MPa (65,000 psi)	420 MPa (60,500 psi)
Ultimate Tensile Strength	800 MPa (116,000 psi)	770 MPa (112,000 psi)
Elongation	16%	12%
Typical Hardness	200 BHN	190 BHN
Compressive Strength, 0.1” set/inch	689 MPa (97,000 psi)	
Specific Gravity	7.9	
Machinability Rating (Free Machining Brass=100)	8	
Max. Operating Temperature	260°C (500°F)	
Stress Relieving Temperature	260°C (500°F)	
Time at Temperature	1 hour per 25mm of section thickness	

Comparative Specifications

BS1400 - HTB3*; AS1565 C86300; ASTM B505, B271 - C86300; SAE 430*;
JIS H5121 – CAC304C (HBsC4)*; DIN 1709 CuZn25Al5*
* Similar but not identical

Notes for the user: The values given in this data sheet are based on a sheet with a 40mm thickness. Depending on the thickness the technical values may vary during processing.
The technical data given in this sheet correspond to our current state of knowledge and should not be construed as an agreement or guarantee regarding certain properties of our products. The decision on the suitability of a particular material for a specific application is up to the user. We reserve the right to modify the given data. Errors of the given data are reserved. The document was produced by machine and is valid without signature.