

## Manganese Brass

# bedra 67300

### Material Designation\*

UNS	C67300
EN	/
JIS	/
GB	HMn60-3-1.7-1

### Chemical Composition

Cu	58-63	%
Mn	2.0-3.5	%
Pb	0.4-3.0	%
Si	0.5-1.5	%
Al	≤0.25	%
Sn	≤0.3	%
Fe	≤0.5	%
Ni	≤0.25	%
Zn	Balance	%



### Characteristics

The alloy is a copper-zinc-manganese-silicon-lead series copper-based multi-element ( $\alpha+\beta$ ) two-phase alloy. The addition of silicon and manganese improves the strength and wear resistance of the alloy, and the addition of lead enhances its wear resistance and machinability.

It is a copper alloy with high strength and high wear resistance.

### Physical Properties

Density <sup>①</sup>	8.3	g/cm <sup>3</sup>
Melting point	873.9	°C
Electrical conductivity <sup>①</sup>	22	%IACS
Thermal conductivity <sup>①</sup>	95	W/(m·K)
Coefficient of thermal expansion <sup>②</sup>	19.1	10 <sup>-6</sup> /K
Modulus of elasticity	117.2	GPa

Note①: Temperature for testing is 20°C.

Note②: Temperature range for testing is 20-300°C.

### Typical Applications

It is used in bushings, main plates, sub-plates, bearings and shafts for the hydraulic industry and wear-resistant parts such as sleeves and turbines.

### Fabrication Properties

Cold workability	Fair
Hot workability	Excellent
Brazing	Good
Resistance welding	Not recommended
Hot workability compared with C37700	100%
Machinability compared with C36000	70%

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## Mechanical Properties

Diameter	Temper	Tensile Strength	Yield Strength	Elongation	Hardness
mm		MPa min.	MPa min.	% min.	HB min.
$\Phi \leq 25$	H02	448	275	12	70
$25 < \Phi \leq 75$	H02	399	241	15	70
$75 < \Phi \leq 120$	H02	379	206	18	65

## Tolerance and Delivery Form

Straight Bar				
Diameter	Tolerance <sup>③</sup>	Ovality	Length	Straightness
mm	mm	mm	mm max.	mm/m max.
$6 \leq \Phi < 10$	0.06	0.03	4000	0.3
$10 \leq \Phi < 18$	0.07	0.03	4000	0.3
$18 \leq \Phi < 30$	0.08	0.04	4000	0.5
$30 \leq \Phi < 50$	0.16	0.08	4000	0.5
$50 \leq \Phi < 60$	0.80	0.40	4000	1.0
$60 \leq \Phi < 80$	1.60	0.80	3000	1.0
$80 \leq \Phi \leq 120$	2.00	1.00	2500	5.0

Note<sup>③</sup>: The tolerances listed in the table are specified as all plus or all minus. When tolerances are specified as plus and minus ( $\pm$ ), half the values given.

\*Composition SAE J463  
 Conductivity CDA  
 Mechanical Properties SAE J463  
 Fabrication Properties CDA  
 Other Physical Properties CDA

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