CW509L

LEAD FREE BRASS

DESCRIPTION

CW509L is a lead free material which is however quite suitable for machining due to its structural constitution. CW509L can be therefore used as a cost-effective replacement for conventional lead-containing machining brass provided that it must not meet high requirements as regards mechanical properties and corrosion resistance.

CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	59.00	61.50
Pb	-	0.20
Fe	-	0.20
Sn	-	0.20
Ni	-	0.30
Al	-	0.05
Total Others	-	0.20
Zn	Remainder	

MECHANICAL PROPERTIES ACCORDING TO EN12164 (AS PER TEMPER R410)

Range (mm)	From	To	UTS Min (Mpa)	PS Min (Mpa)	Elongation Min %	Hardness Min (HRB)	Hardness Max(HRB)
Round (Dia)	2	40	410	230	10	-	-
Hex (A/F)	3	35	410	230	10	-	-
Square (A/F)	3	35	410	230	10	-	-

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PHYSICAL PROPERTIES

Melting Point - Liquidus°F	1660
Melting Point - Solidus°F	1650
Density lb/cu in. at 68°F	0.303
Specific Gravity	8.39
Electrical Conductivity % IACS at 68°F	28
Thermal Conductivity Btu/ sq ft/ ft hr/ °F at 68°F	71
Coefficient of Thermal Expansion 68-572$10^{-6}$ per °F (68 – 572°F)	11.6
Specific Heat Capacity Btu/ lb /°F at 68°F	0.09
Modulus of Elasticity in Tension ksi	15000
Modulus of Rigidity ksi	5600

FABRICATION PROPERTIES

Joining Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Good
Gas Shielded Arc Welding	Fair
Coated Metal Arc Welding	Not Recommended
Spot Weld	Good
Seam Weld	Not Recommended
Butt Weld	Good
Capacity for Being Cold Worked	Fair
Capacity for Being Hot Formed	Excellent
Forgeability Rating	90
Machinability Rating	40

TYPICAL USES

- Architecture
- Builders Hardware
- Fasteners
- Industrial

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