IS 319 GR I

FREE MACHINING BRASS

DESCRIPTION

IS 319 Gr I, Free cutting brass, is a significantly improved form of 60/40 brass, with excellent free cutting properties. It is used in the mass production of brass components where maximum output and longest tool life are required, and where no further cold forming after machining is required.

CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	56.00	59.00
Pb	2.00	3.50
Fe	-	0.35
Total Others	-	0.70
Zn	Remainder	

MECHANICAL PROPERTIES (AS PER TEMPER HB)

Range (mm)	From	To	UTS Min (Mpa)	PS Min	Elongation Min (%)	Hardness Min (HV)	Hardness Max (HV)
Round (Dia)	6.00	12.00	405.00	-	4.00	125.00	155.00
	12.00	25.00	395.00	-	6.00	120.00	150.00
	25.00	50.00	355.00	-	12.00	110.00	140.00
	50.00	75.00	325.00	-	17.00	100.00	130.00
Hex (A/F)	6.00	12.00	405.00	-	4.00	125.00	155.00
	12.00	25.00	395.00	-	6.00	120.00	150.00
	25.00	50.00	355.00	-	12.00	110.00	140.00
	50.00	70.00	325.00	-	17.00	100.00	130.00
Square (A/F)	6.00	12.00	405.00	-	4.00	125.00	155.00
	12.00	25.00	395.00	-	6.00	120.00	150.00
	25.00	50.00	355.00	-	12.00	110.00	140.00
	50.00	60.00	325.00	-	17.00	100.00	130.00
Octagon (A/F)	6.00	12.00	405.00	-	4.00	125.00	155.00
	12.00	25.00	395.00	-	6.00	120.00	150.00
	25.00	50.00	355.00	-	12.00	110.00	140.00

RAJHANS METALS PRIVATE LIMITED

3985, GIDC, Phase-III, Dared, Jamnagar - 361 004. (Gujarat) INDIA. +91 2882573820 www.rajhans.com

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FREE MACHINING BRASS

PHYSICAL PROPERTIES

Melting Point - Liquidus°F	1630
Melting Point - Solidus°F	1610
Densitylb/cu in. at 68°F	0.306
Specific Gravity	8.47
Electrical Conductivity% IACS at 68°F	28
Thermal ConductivityBtu/ sq ft/ ft hr/ °F at 68°F	71
Coefficient of Thermal Expansion 68-57210-^{6} per °F (68 – 572°F)	11.6
Specific Heat CapacityBtu/ lb /°F at 68°F	0.09
Modulus of Elasticity in Tensionksi	14000
Modulus of Rigidityksi	5300

FABRICATION PROPERTIES

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

TYPICAL USES

- Architecture
- Builders Hardware
- Consumer
- Industrial
- Ordnance

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