

# IS 319 GR III

# LEADED BRASS

## DESCRIPTION

IS 319 Gr III A ductile alloy with good machinability as well as bending and cold heading properties. Suitable for bicycle spoke nipples.

## CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	62.00	63.00
Pb	0.50	1.50
Fe	-	0.20
Total Others	-	0.50
Zn	Remainder	

## MECHANICAL PROPERTIES (AS PER TEMPER HB)

Range (Inch)	From	To	UTS Min (Mpa)	PS Min (Mpa)	Elongation Min (%)	Hardness Min	Hardness Max
Round (Dia)	6.00	12.00	355.00	-	8.00	-	-
	12.00	25.00	345.00	-	12.00	-	-
	25.00	50.00	305.00	-	22.00	-	-
	50.00	75.00	285.00	-	27.00	-	-
Hex (A/F)	6.00	12.00	355.00	-	8.00	-	-
	12.00	25.00	345.00	-	12.00	-	-
	25.00	50.00	305.00	-	22.00	-	-
	50.00	75.00	285.00	-	27.00	-	-
Square (A/F)	6.00	12.00	355.00	-	8.00	-	-
	12.00	25.00	345.00	-	12.00	-	-
	25.00	50.00	305.00	-	22.00	-	-
	50.00	75.00	285.00	-	27.00	-	-

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## PHYSICAL PROPERTIES

Density	8.46 g/cm <sup>3</sup>
Melting Point	910°C
Specific heat cap at 20 °C	0.377 (kj/kgK)
Electrical conductivity	14.7 (MS/m)
Mod of elasticity	105 (GPa)
Coef of therm exp at 20 °C	20.4 (10 <sup>-6</sup> /K)
Thermal Conductivity	116W/m.K

## FABRICATION PROPERTIES

Technique	Suitability
Machinability (CuZn39Pb3 = 100 %)	80%
Capacity for being cold worked	poor
Capacity for being hot worked	Fair
Suitability for soldering	Excellent
Suitability for Brazing	Good

## TYPICAL USES

- Precision Components Machining with Riveting operation.