

# Soft Ingot Iron Rod

**Grade:** Soft Ingot Iron

**Formula:** Fe

**Percentage Purity:** 99.8%

**Diameter:** 19mm

**Length:** 1000mm

**Temper:** As Drawn

**CAS Number:** 7439-89-6

**UOM Code:** 028-573-50

**SKU:** 1000003547-group

**Product Code:** FE00-RD-000161

## Material Properties for Metals

### Atomic Properties

Element	Value
Atomic number	26
Crystal structure	Body centred cubic
Electronic structure	Ar 3d <sup>6</sup> 4s <sup>2</sup>
Valences shown	2, 3, 4, 6
Atomic weight( amu )	55.847
Thermal neutron absorption cross-section( Barns )	2.56
Photo-electric work function( eV )	4.4
Natural isotope distribution( Mass No./% )	58/ 0.3
Natural isotope distribution( Mass No./% )	57/ 2.1
Natural isotope distribution( Mass No./% )	56/ 91.8
Natural isotope distribution( Mass No./% )	54/ 5.8
Atomic radius - Goldschmidt( nm )	0.128
Ionisation potential( No./eV )	2/ 16.18
Ionisation potential( No./eV )	5/ 75.0
Ionisation potential( No./eV )	4/ 54.8
Ionisation potential( No./eV )	3/ 30.65
Ionisation potential( No./eV )	1/ 7.87
Ionisation potential( No./eV )	Jun-99

## Mechanical Properties

Element	Value
Hardness - Mohs	04-May
Material condition	Polycrystalline
Poisson's ratio	0.293
Bulk modulus( GPa )	169.8
Tensile modulus( GPa )	211.4
Izod toughness( J m <sup>-1</sup> )	Aug-16
Tensile strength( MPa )	180-210
Yield strength( MPa )	120-150

## Electrical Properties

Element	Value
Electrical resistivity( $\mu\text{Ohmcm}$ )	10.1 @ 20 @ 20°C
Temperature coefficient( K <sup>-1</sup> )	0.0065 @ 0-100°C
Thermal emf against Pt (cold 0C - hot 100C)( mV )	1.98

## Physical Properties

Element	Value
Boiling point( C )	2750
Density( gcm <sup>-3</sup> )	7.87 @ 20°C

## Thermal Properties

Element	Value
Melting point( C )	1535
Latent heat of evaporation( J g <sup>-1</sup> )	6095
Latent heat of fusion( J g <sup>-1</sup> )	272
Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )	444 @ 25°C
Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )	80.4 @ 0-100°C
Coefficient of thermal expansion( $\times 10^{-6}$ K <sup>-1</sup> )	12.1 @ 0-100°C