

# Dumet

## Wire • Ribbon

Dumet is a glass-to-metal sealing alloy. It is a bimetal made of a nickel-iron core encased in an oxygen-free-high-conductivity (OFHC) copper sheath. Dumet wire is used as a glass-to-metal seal in manufacturing of lamps, diodes, and capacitor slug leads. It is used as the pinch-lead in Lead-in-Wires that are used in incandescent, fluorescent tube, automotive, halogens, HID, decorative, and other special purpose lamps. JLC boasts of being the world's largest producer of lamp grade Dumet wire.

### Grades of Supply

Bare Dumet Wire      Oxidized Dumet Wire      Borated Dumet Wire      Nickel-Plated Dumet Wire

All grades are supplied as annealed wire.

Grade selection depends on the lamp type and the manufacturing process of the lamp maker.

### Nominal Chemical Composition (%)

Alloy	Ni	C	Mn	Si	S	P	Fe
NiFe42 Core	41-43	Max 0.05	Max 1.0	Max 0.30	Max 0.02	Max 0.02	Balance

Two grades are available which are identified with Copper sheath as follows:

Copper* Sheath	24 ± 2 % of the total weight
	26 ± 2 % of the total weight

\*Min 99.99% OFHC Copper

### Nominal Physical, Electrical & Mechanical Properties ( for cold drawn & annealed wire)

Alloy	Density g/cm <sup>3</sup>	Electrical Resistivity at 20°C μΩ-cm	Coefficient of Linear Expansion b/w 20-400°C 10 <sup>-6</sup> /°C		Tensile strength N/mm <sup>2</sup>		Elongation % at L <sub>0</sub> =100 mm	
			Radial	Axial	Min	Max	Min	Max
Dumet wire	8.35	6-9	8.5-10.0	5.5-7.0	400	600	20	30

### Surface Finish

For Borated and Oxidized Dumet, color of the wire surface is as per ASTM color standard F29-63T. The color has been divided into three parts:

Light	Medium	Dark
7.5R - 0.5YR	3.5R - 7.5R	2.5R - 3.5R

For Nickel plated Dumet wire, standard plating thickness is min 2 microns.

### Packaging

Available in different types of spools or drums/barrels based on customer specification. Common spool used has the following dimensions:

Spool Type	Traverse mm	Bore mm	Flange mm	Tare weight gm
Dumet-SP	52	48	100	60

Barrel/drum packaging and other standard DIN spools are also available upon request. Dumet spools are individually sealed with plastic film and put in an air-tight plastic container with an activated dessicant material.

It is advisable to use the wire within six months from the date of manufacturing for best performance. The shelf life of borated, oxidised and bare dumet is only six months from the date of manufacturing.