

REDI IRON 120

RESISTANCE HEATING WIRE AND RESISTANCE WIRE

DATASHEET

Redi Iron 120 is an austenitic nickel-iron alloy (NiFe alloy) for use at temperatures up to 600°C (1110°F). The alloy is characterized by very low resistivity and high temperature coefficient of resistance.

Typical applications for Redi Iron 120 are in voltage regulators, timing devices, temperature sensitive resistors, temperature compensating devices and low temperature heating applications

CHEMICAL COMPOSITION

	Ni %	Fe %
Nominal composition	70	30

MECHANICAL PROPERTIES

	Tensile strength R _m	
	MPa	ksi
Hard	1034	150
Anealed	483	70

PHYSICAL PROPERTIES

Density g/cm ³ (lb/in ³)	8.46 (.305)
Electrical resistivity at 20°C Ωmm ² /m (Ω/cmf)	0.199 (120)

COEFFICIENT OF THERMAL EXPANSION

Temperature °C (°F)	Thermal expansion 10 ⁻⁶ /K
20-500 (68-932)	15.0

THERMAL CONDUCTIVITY

Temperature °C (°F)	100 (212)
W m ⁻¹ K ⁻¹	28.9

SPECIFIC HEAT CAPACITY

Temperature °C (°F)	20
$\text{kJ kg}^{-1} \text{K}^{-1}$	0.125
Melting point °C (°F)	1425 (2597)
Max continuous operating temp. °C (°F)	590 (1094)
Magnetic properties	Material is magnetic
Thermal E M F vs. Copper mV/°C	-.040

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