

SALOMON'S METALEN B.V.

ALLOY 48

DESCRIPTION

A controlled expansion alloy, consisting of 48% Nickel, balance Iron; used in a variety of electronic application, especially for glass and ceramic seals.

APPLICATIONS

Glass to metal seals for variety of electronic tubes and hermetic devices.

CHEMISTRY - maximum % unless noted

Iron	Bal
Nominal	Nickel 48
Nominal Cobalt	-
Carbon	0.05
Silicon	0.30
Sulfur	0.025
Chromium	0.025

MECHANICAL PROPERTIES

Tensile Strength	ksi	79
	MPa	545
Yield Strength	ksi	36
	MPa	248
Elongation	% in 2 in.	30
Typical Hardness Ann.	Rockwell	HRB 80
Modulus of Elasticity	Mpsi	23
	kMPa	159

PHYSICAL PROPERTIES

Density	lb/cu in	0.298
Specific Gravity		8.25
Curie Temp	°F	880
	°C	471
Melting Point	°F	2600
	°C	1427
Electrical Resistivity	micro-ohm-cm	49
	ohm-cir mil/ft	290
Thermal Conductivity	W/cm °C	0.13
	BTU-in/sq. ft-hr-°F	90
Specific Heat	Cal/g-°C	0.12
	BTU-lbm-°F	0.12
Thermal Expansion	ppm/°F(75°F to 842°F)	5.0
	ppm/°C(25°C to 450°C)	9.0

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LINEAR COEFFICIENT OF THERMAL EXPANSION (ppm per °C) Deg. °C Class 1

30-100	9.4
30-150	9.4
30-200	9.4
30-250	9.3
30-300	8.8
30-325	-
30-350	9.0
30-375	-
30-400	8.2-9.2
30-425	8.9
30-450	9.0
30-475	9.3
30-500	9.4
30-525	-
30-550	9.6-10.3
30-600	10.4
30-700	11.3
30-800	12.1
30-900	13.0
30-1000	13.9