

MAGNETIC PROPERTIES OF METAL

MAGNETIC (μ greater than 1.1)

Alloy 225
Alloy 405
Alloy 426
Alumel
Iron
Kovar
1010-1020 Low Carbon Steel
Monel
Nickel
42% Nickel Iron
52% Nickel Iron
430 Stainless Steel

NON-MAGNETIC (μ less than 1.1)

Alloy 11
Alloy 203
Aluminum
Constantan
Copper
Chromel
Inconel
Molybdenum
Platinum
Rhodium
302-304 Stainless Steel
Tantalum
Titanium
70% Copper-Nickel

$$\mu = \frac{\text{Absolute Permeability of Material}}{\text{Absolute Permeability of Empty Space}}$$

MATERIAL TEMPERATURE LIMITATIONS

	Maximum Load Bearing Temperature °C	Maximum Air Operating Temperature °C
Lead-Silver Solder	100	150
Silver Braze Alloys	250	450 (O ₂ permeation)
Copper Braze	300	400
Gold Braze Alloys	350	700
Copper	200	300
70% Copper-Nickel	400	500
Monel & Constantan	450	550
Nickel	500	750
Kovar (29 Ni, 17 Co, 53 Fe)	500	500
42% & 52% Nickel Iron	450	400
300 Series S.S. (304, 316, Etc.)	650	850
Inconel	550	1000
430 S.S.	500 (Vacuum, Argon)	500
Tantalum	1000 (Vacuum, Argon)	400
Molybdenum	1000 (Vacuum, Argon)	350

All of these charts should be used as a rough guideline to match materials with the individual application. For standard products in this catalog, the temperature ratings (limitations) can be attributed to both materials used and seal configuration.