



MuShield high permeability magnetic shielding material is a non-oriented 80% nickel-iron-molybdenum alloy which offers extremely high initial permeability and maximum permeability with minimum hysteresis loss.

It meets military specification MIL-N-14411 C (MR), and ASTM A-753-78 standard specification.

DC MAGNETIC PROPERTIES

Coercive force from H=1.0 Oe, Oersted 0.008 to 0.02
 Hysteresis loss from H=1.0 Oe, erg/cm³ per cycle 18 to 24

DC MAGNETIC PROPERTIES

Form	μ at B = 40 G	μ max	Ho from H=1 Oersted
Bar, Wire	50,000	200,000	0.02 max.

DC hysteresis loss from
 H = 1 Oe, erg/cm³ per cycle . . . 16
 Induction, gauss 7,300
 Residual Induction, gauss 3,500
(Split strip or split rod specimens)

AC MAGNETIC PROPERTIES, 60 Hz

Minimum Limits

Thickness		μ 40 G	μ 200 G	μ 2000 G
in.	mm			
0.025 ¹	0.635	35,000	40,000	55,000
0.014 ¹	0.356	55,000	65,000	95,000
0.006 ¹	0.152	65,000	85,000	135,000
0.002 ²	0.051	70,000	90,000	220,000

¹ Ring laminations 1 1/2" (38.1 mm) OD x 1" (25.4 mm) ID specimens
² Tape toroid specimen

9 Ricker Avenue | Londonderry, New Hampshire, USA | 03053
 Phone: 603.666.4433 | Toll Free: 888.669.3539
 Fax: 603.666.4013 | Email: info@mumetal.com



PHYSICAL PROPERTIES:

Specific gravity	8.74
Density -- lb/in ³	0.316
kg/m ³	8747
Thermal conductivity	
Btu-in/ft ² /hr/°F	240
W/m· K	34.6

MuShield Magnetic Shielding Material

Type analysis:

Carbon	0.02%	Nickel	80.00%
Manganese	0.50%	Molybdenum	4.20%
Silicon	0.35%	Iron	Balance

Electrical Resistivity

ohm-cir mil/ft	349
microhm-mm	580

Temperature coefficient of electrical resistivity

per °F from 0/930°F	0.0006
per °C from -17.8/499°C	0.0011

Curie temperature

860°F (460°C)

Melting point

2650°F (1454°C)

Specific heat, Btu/lb · °F

0.118

kJ/kg · K

0.494

COEFFICIENT OF THERMAL EXPANSION

Temperature		Coefficient	
°F	°C	10 ⁻⁶ /°F	10 ⁻⁶ /°C
-103 to 77	-75 to 25	6.00	10.80
-58 to 77	-50 to 25	5.94	10.70
-11 to 77	-25 to 25	5.78	10.40
77 to 122	25 to 50	6.83	12.30
77 to 212	25 to 100	6.89	12.40
77 to 392	25 to 200	7.09	12.76
77 to 572	25 to 300	7.22	13.00
77 to 752	25 to 400	7.39	13.30

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