



Why do MuMETAL and Co-NETIC not perform at cryogenic temperatures?

Our high permeability MuMETAL® and Co-NETIC® alloys have an optimal temperature range in which the permeability peaks. The permeability of these alloys begins to drop below -40°C, making it unsuitable in low temperature applications.

Permeability change with temperature:

	Room Temp (293K)	Liquid Nitrogen (77K)	Liquid Helium (4K)
MuMETAL®	350 000	-	16 000
CRYO-NETIC®	193 000	174 000	77 000

Our specialized pure and dry hydrogen furnace program for annealing CRYO-NETIC last for over 36 hours within a varying temperature range of 392°F (200°C) to 2102°F (1150°C) with a long cooling time to achieve a typical permeability of 70,000 at 4K (applied field .005 Oe).

CRYO-NETIC® Alloy

CRYO-NETIC® is our proprietary cryogenic nickel-iron soft magnetic alloy that is ideal for shielding unwanted magnetic fields at extremely low temperatures down to 4 Kelvin (liquid helium).

CRYO-NETIC® Chemical Composition (% by weight)

Nickel	Molybdenum	Iron
81	5	Balance