

Annealed austenitic stainless steel is only one type of stainless steel without magnetism because of its face-centered cubic crystal structure.

The portion of austenitic stainless steel microstructure will be changed by the wire drawing process and slow cooling after annealing to martensitic microstructure, then material will have some magnetic permeability. The change of magnetic permeability for 316 is less than 304 & 302 after same degree of cold drawing.

Classes	Non/Magnetic	Crystal Structure	Common Examples
Ferritic	Magnetic	BCC	405, 430, 442
Austenitic	Nonmagnetic	FCC	201, 301, 302, 303, 304, 316
Martensitic	Magnetic	BCT	403, 410, 416
Duplex	Magnetic	Combination	2205, Alloy 255
Precipitate-Hardened	Magnetic	Combination	17-4PH, 17-7PH(631)

