

AlNiCo Magnets (Aluminium-Nickel-Cobalt)

AlNiCo magnets are made from a combination of aluminium, nickel, cobalt, iron, and other minor elements. These can be produced through a cast or sintered process.

These magnets can be produced in a variety of grades, shapes and sizes, and are often supplied uncoated due to its corrosion resistance to many elements. However in some cases coating is preferred, options are available which can include adding Ni, Zn, or paint to the AlNiCo magnet.

The main benefits of AlNiCo magnets are:

- High magnetic field strength
- Good resistance to demagnetization and corrosion
- High temperature stability

Typical Applications which can use AlNiCo Magnets include:

- Compute Hard Drives
- Speakers
- Motors
- Generators
- Sensors



USA standard - permanent cast AlNiCo magnet industry standard of USA

Grade	Br		Hcb		Hcj		BHmax		Density	%change Per C	Tw Max	Remark
	kGs	mT	Oe	kA/m	Oe	kA/m	KJ/m3	MGOe	g/cm3	%K	°C	
AlNiCo2	7.1	710	550	44	570	45	11.9	1.5	6.9	-0.02	450	Isotropic
AlNiCo5	10.9	1090	620	49	630	50	31	3.9	7.3	0.01	525	Anisotropic
AlNiCo6	9.4	940	790	63	820	65	23.1	2.9	7.3	0.03	525	
AlNiCo8	7.4	740	1500	119	1690	134	31.8	4	7.3	0.01	550	
AlNiCo8HC	6.7	670	1800	143	2020	161	35.8	4.5	7.3	0.01	550	

Typical Magnetic Performance Range for Sintered AlNiCo Magnet

Grade	Br		Hcb		Hcj		BHmax		Density	Remark
	kGs	mT	kA/m	Oe	kA/m	Oe	KJ/m3	MGOe	g/cm3	
FLN8	5.2	520	40	500	43	540	8-10	1-1.25	6.8	Isotropic
FLNG12	7	700	40	500	43	540	12-14	1.5-1.75	6.9	
FLNG14	5.7	570	76	950	78	980	14-16	1.75-2.0	6.9	
FLNG18	5.6	560	88	1100	90	1130	18-22	2.25-2.75	7	
FLNG28	10.5	1050	46	580	47	590	28-33	3.5-4.15	7.3	Anisotropic
FLNG34	11	1100	48	600	50	630	33-38	4.1-4.7	7.3	
FLNG35	12.2	1220	50	630	51	640	35-39	4.4-4.9	7.3	
FLNGT28	10	1000	56	700	57	710	28-30	3.5-3.8	7.3	
FLNGT31	7.8	780	104	1300	106	1130	33-36	3.9-4.5	7.3	
FLNGT38	8	800	123	1550	126	1580	38-42	4.75-5.3	7.3	
FLNGT42	8.8	880	120	1500	122	1530	42-44	5.3-5.5	7.3	
FLNGT44	9	900	120	1500	125	1560	44-48	5.5-6.0	7.3	
FLNG33J	6.5	650	136	1700	150	1880	31-36	4.1-4.5	7.3	
FLNGT40J	8	800	1440	1800	155	1950	40-44	5.0-5.5	7.3	
FLNGT44J	8.2	820	1520	1900	160	2000	44-48	5.5-6.0	7.3	

Typical Magnetic Performance Range for Cast AlNiCo Magnets

Grade	Br		Hcj		BHmax		USA standard	IEC standard	DIN standard	UK standard
	kGs	mT	Oe	kA/m	KJ/m ³	MGOe	MMPA	IEC	DE	UK
LN10	6.5	650	530	42	10	1.2	AlNiCo3	AlNiCo9/3	/	/
LNG11	7.2	720	480	37	11.2	1.4	AlNiCo1	AlNiCo8/4	AlNiCo120	AlNi
LNG13	7	700	620	50	13	1.6	AlNiCo2	AlNiCo12/6	AlNiCo160	AlNiCo
LNGT18	5.8	580	1250	100	18	2.2	AlNiCo 8	AlNiCo17/9	/	/
LNG16	8	800	660	53	16	2	[AlNiCo4]	/	/	/
LNG34	11.8	1180	550	44	34	4.25	[AlNiCo5C]	/	/	/
LNG37	12	1200	600	48	37	4.65		AlNiCo37/5	AlNiCo500	Alcomax2
LNG40	12.2	1220	630	50	40	5	AlNiCo5	/		/
LNG44	12.5	1250	650	52	44	5.5		AlNiCo44/5		Alcomax3
LNG52	13	1300	690	55	52	6.5	AlNiCo5DG	AlNiCo52/6	AlNiCo600	Alcomax3 S.C.
LNG60	13.3	1330	750	60	60	7.5	AlNiCo5-7	/	AlNiCo700	Columax
LNGT28	10.5	1050	700	56	28	3.5	AlNiCo6	AlNiCo26/6	AlNiCo400	Alcomax4
LNGT30	10.5	1050	750	60	30	3.75				
LNGT32	8	800	1280	102	32	4	AlNiCo8	AlNiCo38/11	AlNiCo350	Hycomax2
LNGT40	8.2	820	1400	112	40	5				
LNGT44	8.8	880	1540	123	44	5.5	AlNiCo8B	/	AlNiCo450	Hycomax3
LNGT48A	9.3	930	1540	123	48	6	AlNiCo8HE			
LNGT48B	8.5	850	1650	132	48	6				
LNGT60	9	900	1380	110	60	7.5	AlNiCo9	AlNiCo60/11	/	/
LNGT72	10.5	1050	1410	112	72	9		/	/	/
LNGT80	10.8	1080	1540	123	80	10				
LNGT88	11	1100	1575	126	88	11				
LNGT92	11.5	1150	1575	126	92	11.5				
LNGT36J	7	700	1750	140	36	4.5	AlNiCo8HC	AlNiCo36/15	/	/
LNGT40J	7.2	720	1900	152	40	5				
LNGT44J	8.2	820	1800	144	44	5.5		AlNiCo44/15	/	/