

TECHNICAL DATA SHEET

MyANC

ALNICO MAGNETS

1. DESCRIPTION OF PRODUCTS AND FIELDS OF APPLICATION

MyANC is a range of magnets based on **Aluminium**, **Nickel and Cobalt (AlNiCo)**, obtained through **sintering** and/or **melting processes**. These magnets are characterized by their **high thermal stability**, **corrosion resistance and excellent ability to maintain magnetization over time**. **MyANC** magnets are available in both **isotropic** versions, which can be magnetized in any direction, and **anisotropic** versions, with preferential magnetization that offers superior performance in terms of magnetic field strength. Due to their unique characteristics, **MyANC AlNiCo** magnets are an ideal solution for applications that require **long-term magnetic stability and resistance to high temperatures**, making them particularly suitable for harsh industrial environments and precision measurement systems.

Unlike other magnetic materials, AINiCo magnets offer:

- Excellent thermal stability: maintain magnetization up to 500-550°C without significant loss.
- High residual induction (Br): provide strong magnetic fields compared to ferrite.
- **Good corrosion resistance**: can be used in humid environments without the need for protective coatings.
- Ease of processing: they can be made into complex shapes by casting or sintering.
- Customizable magnetization: available with customized magnetic configurations.
- Low coercivity (Hc): Unlike neodymium, AlNiCo magnets have a lower resistance to demagnetization when subjected to opposing magnetic fields.

Due to their **unique properties**, **MyANC AINiCo** magnets are used in a wide range of industries and technology sectors, including:

- Automotive: position sensors, electronic ignitions, instrumentation engines.
- Aerospace and Military: navigational instruments, magnetic actuators, generators.
- Electromedical: Imaging sensors, precision measuring instruments.
- Industrial Automation: magnetic brakes, magnetic guides, position detectors.
- Transport and Railway: detection and control systems.
- Instrumentation and Sensors: reed switches, level and speed indicators, high-precision measuring instruments.
- Food Industry: magnetic separators for food processing plants.
- Electro-acoustic: speakers, electric guitar pickups.

MyP Magnetica Italiana's MyANC AINiCo magnets are made from high-quality materials, ensuring reliable and long-lasting performance



CHEMICAL COMPOSITION	%
FeAlNiCo	88-98
Other additives	2-12

The additives present in the alloy are designed to optimize magnetic and mechanical properties, improving resistance to demagnetization, high temperatures and corrosion.

REV 1

Page 1 of 8



TECHNICAL DATA SHEET

MyANC

2. TECHNICAL SPECIFICATIONS OF MYANC MATERIALS

Magnetic properties (at 20 °C)

MOLTEN product		Br**		HcJ		BHmax	
		G	тТ	Oe	kA/m	MGOe	kJ/m³
2 C	MyANC AIF 3-10	6500	650	500	40	1,25	10
TROF	MyANC AIF 2-12	7500	750	580	46	1,5	12
Iso	MyANC AIF 8-t18	5500	550	1210	96	2,25	18
MOLTEN product		Br**		HcJ		BHmax	
			тT	Oe	kA/m	MGOe	kJ/m³
	MyANC AF5-34	11000	1100	650	52	4,25	34
	MyANC AF5-37	11800	1180	640	51	4,63	37
	MyANC AF5 -40	12000	1200	650	52	5	40
	MyANC AF5-44	12500	1250	680	54	5,5	44
	MyANC AF6-T28	11500	1150	750	60	3,5	28
<u>о</u>	MyANC AF5-52	13000	1300	730	58	6,5	52
ROPI	MyANC AF7-60	13500	1350	750	60	7,5	60
LOSIN	MyANC AF8-T38	8000	800	1400	111	4,75	38
A	MyANC AF8-T40	8500	850	1460	116	5	40
	MyANC AF8-T44	9000	900	1460	116	5,5	44
	MyANC AF8-T36S	7200	720	1900	151	4,5	36
	MyANC AF9-T60	10000	1000	1400	111	7,5	60
	MyANC AF9-T72	10500	1050	1460	116	9	72
	MyANC AF9-T60	10800	1080	1530	122	10	80

REV 1





TECHNICAL DATA SHEET

MyANC

SINTERED product		Br**		HcJ		BHmax	
		G	тТ	Oe	kA/m	MGOe	kJ/m³
ISOTROPIC	MyANC AIS 3-10	6500	650	530	42	1,25	10
	MyANC AIS 2-12	7500	750	580	46	1,5	12
	MyANC AIS 8-t18	6000	600	1230	98	2,25	18
	MyANC AIS 2-12	6200	620	1310	100	2,5	20
SINTERED product		Br**		HcJ		BHmax	
		Gs	тT	Oe	kA/m	MGOe	kJ/m³
	MyANC AS 5-34	11500	1150	630	50	4,25	34
ANISOTROPIC	MyANC AS 6-T28	11000	1100	750	60	3,5	28
	MyANC AS 8-T36J	7200	720	1900	152	4,5	36
	MyANC AS 8-38	8000	800	1400	112	4,75	38
	MyANC AS 8-44	8500	850	1530	122	5,5	44
	MyANC AS 8-T48	9200	920	1590	127	6	48

Physical Properties (at 20 °C)

Product		Temp	erature Coeffi	cient	MAX Working Temperature	Curie Temperature
		Metodo Analitico	Δ Br/ ΔΤ (%/ °C)	Δ	(°C)	(°C)
MyANC-AIF	Molten Isotropic	IOML13	-0,25:-0,35	-0,010:-0,03	450	770
MyANC-AF	Molten Anisotropic	IOML13	-0,25	0,01	525	860
MyANC-AIS	Sintered Isotropic	IOML13	-0,025	-0,01	440	770
MyANC-AS	Sintered Anisotropic	IOML13	-0,25	0,01	440	860

REV 1

Page 3 of 8





TECHNICAL DATA SHEET

MyANC

3. Handling

MyP Magnetica Italiana S.r.I.'s MyANC AINiCo magnets are high-stability magnetic materials, characterized by **high thermal resistance, good mechanical strength, and low coercivity** compared to other permanent magnets.

Key features for handling

- **Great resistance to high temperatures**: AlNiCo magnets retain their magnetic properties up to **500-550°C**, making them ideal for industrial applications and extreme environments.
- Less brittle than ceramic magnets: although they are metallic, they have good mechanical resistance, but can still break in the case of strong impacts.
- Low coercivity (Hc): Unlike neodymium, AlNiCo magnets have a lower resistance to demagnetization when subjected to opposing magnetic fields.
- Excellent corrosion resistance: Unlike neodymium, AlNiCo magnets do not require protective coatings, but can be painted or treated to improve their appearance and durability.
- Compliance with safety regulations: MyANC magnets comply with REACH (EC Regulation 1907/2006) and RoHS (Directive 2011/65/EU and subsequent updates) regulations relating to restriction of use of hazardous substances.

Precautions for use

- Avoid violent impacts or excessive mechanical stress that could cause cracks or breakage.
- **Do not subject the magnets to strong opposing magnetic fields**, which may reduce or reverse the magnetization.
- Use protective gloves if necessary, especially for large magnets with high attraction.
- Avoid direct contact with metal surfaces in high-temperature environments, as heating can cause alterations in magnetic stability.
- Avoid placing magnets close together without spacers, especially if they are anisotropic AlNiCos, to prevent unwanted magnetic interactions.

For further details, MyP Magnetica Italiana S.r.I. refers to the relevant **Safety Data Sheet for AlNiCo Magnets (MyANC)**.

4. STORAGE

MyANC AINiCo magnets offer excellent long-term stability, but to ensure optimal performance, it is recommended to follow the correct storage procedures.

- **Demagnetization protection**: Due to their **low coercivity**, **MyANC** magnets must be stored so that they are not exposed to opposing or variable magnetic fields that could reduce their magnetic intensity.
- Avoid shocks and mechanical stress: although MyANC magnets have greater mechanical resistance than ceramic magnets, they can still be damaged if subjected to strong impacts.
- Maintain a controlled temperature: AlNiCo magnets withstand high temperatures, but to avoid excessive thermal expansion, it is advisable to store them at temperatures below 200°C when not in use.
- Store separately with spacers: If magnets are stored in large quantities, it is recommended to use spacers to avoid unwanted magnetic interactions.

REV 1

Page **4** of **8**





TECHNICAL DATA SHEET

MyANC

• **Optional surface protection**: When used in aggressive environments (e.g. high salinity, prolonged exposure to chemicals), **protective paints or surface coatings can be applied** to improve durability.

By following these guidelines, you will ensure a **long life and maximum efficiency** of **MyANC** AlNiCo magnets.

5. SHAPES AND SIZES

Thanks to the **melting and sintering processes**, AlNiCo magnets can be **made into complex and tailormade shapes**.

The standard shapes are: parallelepipeds, rings, rods.

DIMENSIONAL TOLERANCES **



	S	D1	D2
	[mm]	[mm]	[mm]
TOLERANCES + -	0,15	0,10	0,10

Thanks to our partnership with a Chinese manufacturer, MyP Magnetica Italiana is able to supply AlNiCo magnets of all types of shapes and sizes.





TECHNICAL DATA SHEET

MyANC

6. MAGNETIZATION

MyANC AINiCo magnets can be magnetized in different configurations depending on their application and their geometry. Due to their **high residual induction (Br) and low coercivity (Hc)**, they offer intense magnetization, but can be more sensitive to demagnetization than other materials such as neodymium.

MyANC magnets are available as both **isotropic**, which can be magnetized in any direction, and **anisotropic**, which are oriented during the production process to obtain preferential magnetization and a higher magnetic field strength.



AXIAL MAGNETIZATION

Description: The magnetic field is oriented along the main axis of the magnet (from top to bottom). **Applications**: Sensors, measuring instruments, loudspeakers, aerospace devices and magnetic actuators.

DIAMETRAL MAGNETIZATION

Description: The magnetic field is oriented along the diameter of the magnet, with the poles located on opposite sides.

Applications: Circular magnets for stepper motors, magnetic couplings and non-contact transmissions.

MULTIPOLAR MAGNETIZATION ON FLAT SURFACE

Description: The magnetization takes place on a flat surface with multiple alternating magnetic poles (North and South).

Applications: Measuring instruments, magnetic encoders, magnetic rollers and industrial automation guides.

Page 6 of 8



Organizzazione con sistema di gestione certificato secondo la norma ISO 9001:2015 da Bureau Veritas Italia. Organization with management system certified according to ISO 9001: 2015 by Bureau Veritas Italia.



TECHNICAL DATA SHEET

MyANC

MULTIPOLAR MAGNETIZATION ON CYLINDRICAL SURFACE

Description: The magnetization is distributed alternately along the circumference of a cylinder. **Applications**: Mainly used in **brushless motors, magnetic encoders and precision** generators.

RADIAL MAGNETIZATION

Description: The magnetic field develops from the center outwards or vice versa along the radius of the magnet.

Applications: Magnetic rings for synchronous motors, high-performance magnetic couplings and aerospace applications.

CUSTOM MAGNETIZATION

Description: Some magnets can be magnetized with custom patterns for specific needs, such as unique magnetic codes or complex magnetic field orientations.

Applications: High-precision encoders, navigation instruments, advanced sensors and biomedical applications.

7. CUSTOMIZATION

MyANC AINiCo magnets They can be **customized** to suit a wide range of **industrial**, **electronic**, **and instrumentational applications**. Due to their **thermal stability**, **machinability and corrosion resistance**, different surface finishes and treatments can be applied to optimize their performance and durability.

Surface Finishes and Special Coatings

Unlike other magnets such as neodymium, **AINiCo** magnets offer **natural corrosion resistance**, but can be further treated to improve their aesthetic, mechanical and protective properties.

Optional treatments available:

- **Protective varnish**: to improve the aesthetic appearance and offer additional protection in aggressive environments.
- Lacquers and resin coatings: to prevent the release of metal particles and improve chemical resistance.
- **Teflon or epoxy coatings**: For applications where advanced protection against solvents and corrosive environments is required.
- **Sandblasted or polished surfaces**: to reduce surface irregularities and improve coupling with other materials.
- **Nickel or zinc plating treatments**: optional treatments to increase protection in particularly humid environments or with high salt exposure.
- Special colorings using adhesive films or surface treatments for identification or aesthetic purposes.

Double-sided adhesive surfaces

For ease of installation and mounting, **MyANC** magnets can be supplied with **high-strength double-sided adhesives** already applied to the surface.

Characteristics of the adhesives used:

✓ **High resistance to ageing**, light and weathering.

REV 1





TECHNICAL DATA SHEET

MyANC

V Effective adhesion to different materials (metal, plastic, glass, wood).

Thermal resistance from -20°C to +100°C, with options up to +150°C for special applications.
Premium adhesives from top brands available, with specific details provided at the offer stage.

Thanks to these **customization options**, MyANC **magnets** can be optimized for industrial, electronic, medical, and design applications.

8. CUSTOMER CARE

For anything not directly reported in this Technical Data Sheet, MyP Magnetica Italiana s.r.l. makes its Commercial and Technical Offices available to advise you on the material that best suits your needs and to support new projects and/or requests.

CONTACTS commerciale@mypmagnetica.it +39 02 83595060



The values of the parameters reported and marked with ** are guaranteed and certified by MyP Magnetica Italiana s.r.l.. Additional values can be supplied, guaranteed and certified only, and exclusively, subject to agreement with the Commercial Office of MyP Magnetica Italiana s.r.l..

Note: what is reported in this sheet is the result of direct observations and practical experiences. However, since it is not possible to have and keep under control all the conditions and all the operating parameters at the user's premises, MyP Magnetica Italiana s.r.l. does not assume responsibility for the improper use of such information.

REV 1

