

MAGNETIC UNITS OF MEASURE/CONVERSION TABLE

DESIGNATION	SI UNITS		CGS UNITS	SI - CGS CONVERSION
B Magnetic flux density	[T] Tesla	1 T = 1000 mT 1 T = 10 ⁴ Vs/cm ²	[G] Gauss	1 T = 10 000 G 1 Vs/cm ² = 10 ⁸ G
H Magnetic field strength	[A/m] Ampere/Metre	1 kA/m = 1000 A/m	[Oe] Oersted	1 kA/m = 12.566 Oe
B·H Magnetic energy density	[J/m ³] Joule/Metre ³	1 kJ/m ³ = 1000 J/m ³	[G·Oe] Gauss · Oersted	1 kJ/m ³ = 1.256 · 10 ⁵ G · Oe 1 G · Oe = 7.96 · 10 ⁻⁶ kJ/m ³
Φ Magnetic flux	[Wb] Weber [Vs] Volt second	1 Wb = 1 Vs	[M] Maxwell	1 Wb = 10 ⁸ M
μ ₀ Magnetic field constant	$\left[\frac{T}{A/m} \right]$ Tesla Ampere/Metre	μ ₀ = 1.256 $\frac{mT}{kA/m}$	[G/Oe] Gauss/Oersted	1 $\frac{mT}{kA/m}$ = 0.796 $\frac{G}{Oe}$

INSTRUCTIONS FOR MAGNET HANDLING

Everyone who handles magnetic materials, especially rare earth magnetic materials, must know and observe these rules!

Hazard Warnings and Handling Guidelines!

Risk of injury from splintering and crushing. Always work with protective glasses or other protective equipment!

Sintered magnets are hard and brittle. They shatter upon impact into many sharp fragments. Always avoid impact for this reason. Because of the strong attractive forces, magnets should be moved with great care when approaching other magnets or magnetic parts, to avoid crushing the skin.

For persons with allergies to

contact with ceramic or metallic substances, the same reactions would be expected from contact with magnet materials of the same kind. They should not work with magnets without protection.

Hazards of strong magnetic fields – Keep a safe distance! Persons with heart pacemakers must observe restrictions given in DIN VDE V 0848 Part 4/A3. Strong magnetic fields can disrupt and destroy magnetic data carriers, such as credit cards, and electronic and mechanical components and devices. Please consult the user guides to these devices about this or ask the manufacturers.

Explosion and fire hazard!

Magnets must not be han-

dled in spaces with risk of explosion, since they can emit sparks on impact. When mechanically processing rare earth magnets, the grinding dust and shavings are a fire hazard. Therefore never work dry, always work with plenty of water. Even dried-out wheel swarf can ignite. In case of fire, only use sand or a powder fire extinguisher with metal fire powder!

Operating temperatures and radiation!

The highest allowed operating temperatures of our magnet materials vary between 120 °C and 350 °C. For the maximum operating temperatures in different cases, please see our specification sheets or our catalogue.

Permanent magnets should not be exposed to ionising

radiation for long times. They would lose their magnetisation.

Use in different media!

Permanent magnets, especially those made with rare earth metals, are partially soluble in various media, depending on the magnet material. They must not be put into service untested.

Storage and Transport Guidelines!

Rare earth magnets must be stored dry, so that they do not oxidise.

For transport as air cargo, observe the regulations for stray magnetic fields (IATA-Dangerous Goods Regulations). These regulations also apply to magnet assemblies.

If you have further questions about handling and using our magnet materials, please ask us. We are very happy to provide you with further information.