

Safety data sheet

General safety data sheet

1. Identification of the substance/preparation and company

Magnet/Magnetsystem

Art. No.: Applies for all raw magnets and magnet systems in our range (NdFeB, SmCo, Alnico and ferrite)

Hersteller/Lieferant

Brugger GmbH

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2. Composition

Magnets coated in nickel, chrome, zinc, silver, epoxy, parylene or another material.

Plastic-bonded or pressed magnets or small assemblies made of magnetic material, either bonded or otherwise processed.

Magnet systems can be copper plated, painted or made with galvanised or nickel-plated steel, magnetic stainless steel or injected plastic.

3. Potential risks

When handling magnets and magnet systems, persons wearing pacemakers should be especially careful. A minimum distance of 20 cm must be maintained from the device, as otherwise the pacemaker could malfunction temporarily (for details, see Item 16 Other information). The use of magnets and magnet systems in explosion-protected rooms is unsafe. Falling magnets could generate sparks and shatter.

4. First-aid measures

No specific information required.

5. Fire-fighting measures

No special information required.

6. Measures in case of unintentional release

No special information required.

7. Handling and storage

7.1. Handling

In addition to the note found in Item 3, the following items also apply for handling:

- Do not store or bring near magnetic storage media (e.g. bank cards or floppy disks).
- Some of the magnets used are very strong and are attracted to ferrous items. If handled improperly, they can cause crushing injuries. They can also splinter, which can cause eye injuries and cuts.

7.2. Storage

See Item 7.1.

8. Limiting exposure and personal safety equipment

See Item 3 and Item 16.

9. Physical-chemical properties

No special information required.

10. Stability and reactivity

No special information required.

11. Information on toxicology

Should persons who are hypersensitive to nickel touch the nickel coating, an allergic reaction may occur.

12. Information on ecology

No negative effects known.

13. Information on disposal

- Waste disposal is to occur in accordance with guidelines 91/689/EEC and 94/62 EU and with local, regional and national regulations.
- Compliance with regulations is to be clarified with the corresponding waste disposal company.
- Use the waste code according to the European waste catalogue.

14. Information on transport

Under certain circumstances, magnets may be classified as hazardous material when transported by air according to Packaging Regulation IATA 953. If packaged properly, the classification as hazardous material is not applicable.

Magnets are not subject to the regulations of the ADR (UN number 2807, no hazard code, class 9).

15. Regulations

None.

16. Other information

Recommendation for persons wearing pacemakers

If exposed to field strengths over 1 millitesla (mT) (i.e. 10 gauss), the reed contact used in pacemakers (from Biotronik) switches to so-called "magnet mode". It should be mentioned that a pacemaker in "magnet mode" does not switch off, but rather switches to a programming mode in which the pacemaker continues working with an emergency operation function (basic function).

It should also be added that the implanted pacemaker is located inside the body of the wearer at a depth of 1 to 2 cm in some cases here as well. The switching distance of the reed contact of a pacemaker in case of an approaching magnet or magnet system can be less than 20 cm with a field strength of 1 millitesla (mT) (i.e. 10 gauss), depending on the magnets or magnet system. This is also the safety distance at which a magnet/magnet system must be kept away from the pacemaker (see also the requirement of the "Safety of implantable cardiac pacemakers" DIN EN 50061/A1 standard, Section 6.3.4, according to which field strengths of 1 millitesla (mT) (i.e. 10 gauss) may not cause harmful interference to the pacemaker).

General potential danger: Statements from the German Federal Office for Radiation Protection

Permanent magnets

Permanent magnets can produce static magnetic fields of up to 300 millitesla (mT) (i.e. 3,000 gauss) at their immediate surface. At a distance of several centimetres, however, the field is already less powerful than the natural magnetic field of the earth, which at northern European latitudes is approximately 0.04 millitesla (mT) (i.e. 0.4 gauss).

Is there any risk from magnetic badge clips for name plates?

In the case of small permanent magnets on name plates, magnetic inductions of approximately 1 millitesla (mT) (i.e. 10 gauss) were measured at specific points at a distance of 1 cm. At a distance of 5 cm, it was only 0.1 millitesla (mT) (i.e. 1 gauss). In addition, the values on the rear of the magnet were considerably lower than on the front. **(Name plate holders supplied by us are somewhat stronger magnetically and still exhibit a field strength of 1 millitesla (mT) at a distance of 3 cm).**

The biological effect thresholds for static magnetic fields are known. The ICNIRP, an international radiation protection committee, recommend that the following values not be exceeded for static fields in case of continuous exposure:

For the general populous, 40 millitesla (mT) (i.e. 400 gauss)

For occupational exposure, 200 millitesla (mT) (i.e. 2,000 gauss)

If the permanent magnet is applied normally to clothing, exhibited levels do not approach these values by a wide margin. This being the case, any risk or adverse effect on the health of people can be completely ruled out.

However, adverse effects are known for wearers of certain types of pacemaker starting at 0.5 millitesla (mT) (i.e. 5 gauss). Starting at approximately 1 millitesla (mT) (i.e. 10 gauss), effects have also been described where magnetic cards, credit cards, watches and similar objects have been affected. It is advisable to not use name plates near implanted pacemakers (approximately 1 cm range) and to not keep sensitive magnetic cards in your jacket pockets. **We would like to go somewhat further and advise wearers of pacemakers against the use of magnetic name plate holders in general.**

This excerpt and additional information on this topic can be found on the website of the German Federal Office for Radiation Protection under the following link:

[https://www.bfs.de/SharedDocs/Downloads/Bfs/DE/broschueren/emf/stko-strom.pdf?](https://www.bfs.de/SharedDocs/Downloads/Bfs/DE/broschueren/emf/stko-strom.pdf?__blob=publicationFile&v=8)

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This information is based on our current knowledge and experience. This safety data sheet describes products with regard to safety requirements. The information does not guarantee specific characteristics.