SLOVENSKI STANDARD
SIST-TS CEN/TS 18263:2026

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Izdelki s trajnimi magneti - Postopek za navajanje informacij, pomembnih za recikliranje

Permanent magnet products - Procedure for declaring recycling-relevant information

Dauermagnetprodukte - Verfahren zur Deklaration recyclingrelevanter Informationen

Produits à aimant permanent - Procédure de déclaration des informations relatives au recyclage

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13.030.30	Posebni odpadki	Special wastes
13.030.50	Recikliranje	Recycling

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TECHNICAL SPECIFICATION

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CEN/TS 18263

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English Version

Permanent magnet products - Procedure for declaring recycling-relevant information

Produits à aimant permanent - Procédure de déclaration des informations relatives au recyclage

Dauermagnetprodukte - Verfahren zur Deklaration recyclingrelevanter Informationen

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The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (CEN/TS 18263:2026) has been prepared by Technical Committee CEN/TC 472 “Rare Earth Elements”, the secretariat of which is held by DIN.

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Introduction

The European economy is heavily dependent on Critical Raw Materials (CRMs), especially on those that are core materials required for the green transition. Securing reliable access to CRMs is an important objective for the European Union (EU) to reach sustainability goals and to ensure global competitiveness. Permanent magnet materials are among the CRMs having both a high economic importance and a significant risk of supply disruption.

Enhancing the availability of information on the presence of magnets in products placed on the EU market is essential to promote the development of large-scale recycling of such materials. This is especially important due to the manifold product designs and challenges with recognizing and disassembling permanent magnets within complex assemblies. Knowledge about the assembly, integration and composition of the magnets is needed to promote circularity and make recycling economically viable, thus supporting the resilience and sustainability of the supply chain.

The objective of this document is to provide a template and methodology for identifying the presence of permanent magnets in products, as well as the relevant information to be exchanged between manufacturers of products with the remaining actors of the value chain to promote recyclability of permanent magnets. This objective is in support of the implementation of the Critical Raw Material Act (EU) 2024/1252, but also other EU product-specific legislation that may contain permanent magnets, for instance the proposal for a Regulation on circularity requirements for vehicle design and on management of end-of-life vehicles, COM/2023/451 final, amending Regulations (EU) 2018/858 and 2019/1020 and repealing Directives 2000/53/EC and 2005/64/EC, the Net Zero Industry Act (EU) 2024/1735, Ecodesign for Sustainable Products Regulation (EU) 2024/1781.

In the EU, according to Article 28 of Regulation (EU) 2024/1252 (Critical Raw Materials Act), the display and exchange of information shall be channelled through a label and information folder requirement for certain product groups that commonly contain permanent magnets in order to promote their recyclability. This document is intended to support economic operators putting on the EU market products to comply with the specific requirements under Article 28 of the CRMA, as well as with possible requirements in forthcoming legislation.

The relevant product groups are, according to Article 28 (1):

— magnetic resonance imaging devices;

— wind energy generators;

— industrial robots;

— motor vehicles;

— light means of transport;

— cooling generators;

— heat pumps;

— electric motors, including where electric motors are integrated in other products;

— automatic washing machines;

— tumble dryers;

— microwaves;

— vacuum cleaners;

— dishwashers.

Specifically excluded are products designed for defence or space applications, special purpose vehicles as defined in Article 3, point (31) of Regulation (EU) 2018/858, parts of a vehicle, other than the base vehicle, that have been type approved in multi-stage type approval of category N1, N2, N3, M2 or M3 and vehicles produced in small series, as defined in Article 3, point (30), of Regulation (EU) 2018/858.

The relevant products shall bear a conspicuous, clearly legible, and indelible label providing information about the enclosed permanent magnet materials, their integration, and a strategy to remove them from the assembly. The permanent magnet materials considered specifically according to Article 28.1 (b) are:

— neodymium-iron-boron;

— samarium-cobalt;

— aluminium-nickel-cobalt;

— ferrite.

Although the Regulation (EU) 2024/1252 does not include hard disk drives, transducers, loudspeakers, drones, motorized toys, and electric vertical take-off and landing aircrafts, this method is also valid for such products and components.

1 Scope

This document gives guidance on the labelling and information folder of potentially permanent magnet containing products in the context of information exchange between supply chain actors to improve recyclability of permanent magnets.

This document can be used by any natural or legal person that will place into the EU market products containing permanent magnets. The document is horizontal by nature and can potentially be applied to any type of permanent magnet containing product. Explicitly in scope are the product- and component groups mentioned in the introduction, as soon the total mass of permanent magnets is above the reporting level threshold specified 4.1 of this document.

The document specifies:

1. the graphical format, application, and location of the labels, so they are easily located, legible, and scannable in the end-of-life state of the products in a way that is suitable for products of different sizes and complexity;

2. the specifications of the data carrier, both in its physical format as placed on the product, and the accessibility, security, and verifiability of information;

3. the access rights of relevant stakeholders to information;

4. the information to be supplied regarding the location and composition of the permanent magnets;

5. the information to be supplied regarding adjacent materials like coatings and fixation features, including adhesives;

6. how to create step-by-step instructions for accessing and safely removing the permanent magnets, specifying the tools and technologies required, providing the recyclers a practically useful, unequivocal guide on how the disassembly of the magnets can be done most efficiently, and

7. the format of the data to be supplied as per the previous points 4. – 6.

Labelling is employed for products which encompass at least one component mentioned above or a singular magnet, including segmented magnets, which holds a total mass of magnetic material as described in Table 1. Other magnet-holding components within a product that fall below that threshold are exempt from declaration and labelling. The purpose of these thresholds is to establish a sensible balance between the efforts required by both the responsible entities for labelling, as well as the efforts by the dismantlers and recyclers, and the output of recycled material. By excluding potential scrap sources where the yield would not warrant the effort, the work can be simplified for both sides.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in REGULATION (EU) 2024/1252, Article 2 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1 Labelling

3.1.1
physical label
graphic information partially in machine-readable and human-readable form, placed on a product or component as required by Regulation (EU) 2024/1252

3.1.2
data carrier
medium used to store information in a machine-readable format that can be scanned and read by electronic devices, as required by Regulation (EU) 2024/1252

EXAMPLES Linear barcode, 2-dimensional matrix codes like data matrix codes (DMC) or quick response (QR), near-field communication (NFC)

[SOURCE: Regulation (EU) 2024/1252, Article 2, (54), modified]

3.1.3
unique product identifier
unique string of characters for the identification of products

[SOURCE: Regulation (EU) 2024/1252, Article 2, (55)]

EXAMPLES: Serial number, Global Trade Item Numbers, or manufacturer part number.

3.1.4
digital product passport
DPP
set of data specific to a product that includes the information specified in the applicable delegated act adopted pursuant to Article 4 and that is accessible via electronic means through a data carrier in accordance with Chapter III of Regulation (EU) 2024/1781

[SOURCE: Regulation (EU) 2024/1781, Article 2, (28)]

3.2 Permanent magnets

3.2.1
permanent magnet
magnet that retains its magnetism after being removed from an external magnetic field

Note 1 to entry: Permanent magnets refer to the entirety of a magnet unit, this includes composite material like a segmented/laminated magnet or a bonded magnet.

[SOURCE: Regulation (EU) 2024/1252, Article 2, (53), modified – Note 1 to entry has been added]

3.2.2
RE-Fe-B (Nd-Fe-B)
rare earth intermetallic compound composed of Nd, Fe and B, with a typical chemical formula of $Nd_2Fe_{14}B$

Note 1 to entry: Nd may be partially substituted with Ce, Pr, Dy, Tb, Gd, etc.

[SOURCE: ISO 22444-2:2020, modified – the title "Nd-Fe-B" has been changed to "RE-Fe-B" to include the potential substitutions, Dy, Tb, Gd have been added to Note 1]

3.2.3
Sm-Co
rare earth intermetallic compound composed of Sm and Co, with typical chemical formulae of $SmCo_5$ and Sm_2Co_{17}

Note 1 to entry: In the latter compound, Co may be partially substituted with Fe, Cu, Zr, etc.

[SOURCE: ISO 22444-2:2020]

3.2.4
Al-Ni-Co
permanent magnet material based on the elements Al, Ni and Co

Note 1 to entry: May include other metallic dopants.

3.2.5
ferrite magnet
permanent magnet material composed of iron oxide in a dense ceramic form

Note 1 to entry: May contain other major alloying elements like Sr and Ba, as well as various metallic or metal-organic dopants.

3.2.6
bulk magnet
dense permanent magnets in metallic or ceramic form

Note 1 to entry: Includes magnets produced by sintering, casting, hot deforming, spark plasma sintering, additive manufacturing as well as other specialized techniques.

3.2.7
composite magnets
permanent magnetic composites consisting of a metallic or ceramic powder and an organic binder material

Note 1 to entry: Includes bonded magnets produced by injection moulding, extrusion or additive manufacturing.

3.2.8
recycling
any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes

[SOURCE: Directive 2008/98/EC, Article 3, (17), modified – the second sentence regarding recycling of organic matter was removed]

3.2.9
reporting threshold level
threshold of the cumulative mass of permanent magnetic materials within a component above which the reporting of the magnet content is required

3.3 Magnet composition

3.3.1
magnet composition
chemical composition of the magnetic material in its finished state, including the qualitative and quantitative information of the deliberately added alloying elements

3.3.2
magnet impurities
content of elements which are not deliberately added

EXAMPLES: Organic impurities from corrosion, contamination from coating materials and adhesives.

Note 1 to entry: Impurities considered in this document are those present in the original alloy at the stage where the magnet is ready to be integrated into the component.

3.3.3
rare earth element
RE element
REE
collective name for scandium (Sc), yttrium (Y) and the lanthanides (La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu), which was approved by the International Union for Pure and Applied Chemistry (IUPAC) in its 2005 Nomenclature of Inorganic Chemistry Recommendations [1]

Note 1 to entry: Certain terms and corresponding abbreviated terms are common such as rare earth element (REE or RE) and rare earth oxide (REO).

Note 2 to entry: Rare earth elements are frequently referred to as being either light rare earth (LREE), medium rare earth (MREE) or heavy rare earth (HREE), with LREE including the elements between lanthanum (La) and neodymium (Nd), MREE including the elements between samarium (Sm) and gadolinium (Gd), and HREE including the elements from terbium (Tb) to lutetium (Lu) as well as scandium (Sc) and yttrium (Y).

[SOURCE: ISO 22444-1:2020, modified - Note 3 and Note 4 have been removed]

3.3.4
declarable substance list
DSL
list of declarable substances and/or substance groups each with a reporting threshold for a reportable applications(s) which has a mandatory or optional reporting requirement when contained at or above its maximum threshold value within a product, component or material

[SOURCE: EN IEC 62474:2019, 3.9, modified by changing “product part” to “component”]