

Critical Raw Materials: where things stand

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Standards for the environment





CEN/CLC Environmental standards



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Several expert **Advisory Groups**: SABE Strategic Advisory Body on Environment CE-TG Circular Economy Topic Group ...etc.

Specific Technical Committees:

CEN/TC 467 Climate change CEN/TC 183 Waste management CEN/CLC/JTC 6 Hydrogen in energy systems ...etc.

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...and Critical Raw Materials???



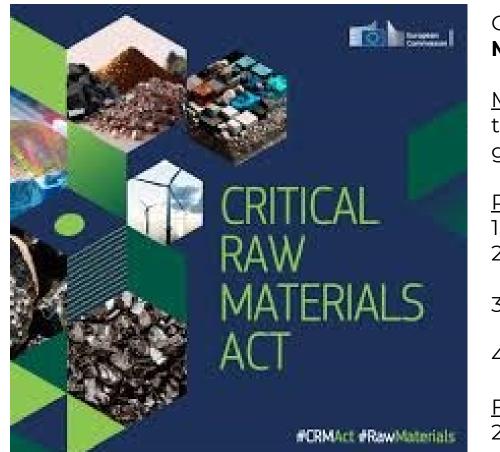




EU Legislative framework



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On 16 March 2023 EC published the proposal for the **Critical Raw Materials Act**.

Main objective:

to secure a sustainable supply of critical raw materials to support the green and digital transitions and strengthen EU resilience.

<u>Pillars</u>:

- 1. Defining priorities and objectives for EU actions
- 2. Improving the EU's monitoring, risk management and governance in the field of CRM
- 3. Strengthening the EU's CRM value chain (mining, refining, processing, recycling) in a global context
- 4. Ensuring a sustainable level playing field across the Single Market

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Feedback period:

20 March - 30 June 2023



EU Legislation & Standards



The **CRMA** has provided several references on:

- how to use European standards
- how to make the relationship with international standards
- what resources can be allocated to support these activities

CEN/CLC Position paper on Critical Raw Materials with the aim to:

boost standardization activities on CRM

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- support standardization in consideration to ISO standards
- provide a background on current standardization activities

 request that harmonized standards be used as the primary route for standardization (presumption of conformity)



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State of the art



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CEN/TC 132 Aluminium and aluminium alloys **CEN/TC 133** Copper and copper alloys **CEN/TC 459** European Committee for Iron and Steel Standardization **CEN/SS M14** Nickel **CEN CLC/JTC 10** Energy-related products. Material Efficiency Aspects for Ecodesign

CLC/TR 45550:2020	Definitions related to material efficiency	
<u>UNI CEI EN 45552:2020</u>	General method for the assessment of the durability of energy-related products	
<u>UNI CEI EN 45553:2021</u>	General method for the assessment of the ability to remanufacture energy-related products	
<u>UNI CEI EN 45554:2020</u>	General methods for the assessment	In accordance with standardisation request M/543 it is necessary to consider the "Use and recyclability of Critical Raw Materials to the EU, listed by the European Commission". This standard facilitates this requirement by describing appropriate information on critical materials
<u>UNI CEI EN 45555:2020</u>	General methods for assessing the re-	
<u>UNI CEI EN 45556:2019</u>	General method for assessing the pro	
UNI CEI EN 45557:2020	General method for assessing the pro	
UNI CEI EN 45558:2021	General method to declare the use o	of critical raw materials in energy-related products

Methods for providing information relating to material efficiency aspects of energy-related products UNI CEI EN 45559:2021





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Future activities





In relation to the foreseen EU Critical Raw Materials Act, in March 2023 DIN submitted to CEN and CENELEC a proposal for a **CEN/TC on 'Rare Earth'** (deadline: 16 june 2023).

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Structure and scope:

Elements recycling
Sustainability and traceability
Circularity of Raw Materials

1° work program:

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- To adopt existing ISO documents as European standards and develop future projects under the Vienna Agreement
- To mirror the work of <u>ISO/TC 298 'Rare Earth'</u> contributing concretely to at least <u>10 SDGs</u>



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State of the art

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ISO/TMB/SAG_CRM launched an International Survey to identify the metals and minerals that ought to be considered as priorities for standardization. The results of this survey pointed to a list of the most used chemical analysis methods and the highest-ranking minerals: **antimony, cobalt, chromium, graphite and beryllium**. Also identified as critical by this survey were the **platinum group metals** (in Asia) and **niobium** (in Europe).

In 2021, ISO/TMB established a **Strategic Advisory Group** on **Critical Minerals (ISO/TMB/SAG_CM)** with the mandate:

to undertake an analysis of <u>existing and potential standardization work</u> within ISO



to identify and evaluate <u>standardization needs</u> for critical minerals not yet covered by other committees, sampling, testing and chemical analysis methods, sustainability [Environmental Social Governance (ESG)] tools for critical minerals supply chains, <u>market relevance and priorities</u> and governance aspects.

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Published standards



Standard and/or project under the direct responsibility of ISO/TC 298 Secretariat (7) \uparrow

⊘ ISO 22444-1:2020

Rare earth — Vocabulary — Part 1: Minerals, oxides and other compounds

⊘ ISO 22444-2:2020

Rare earth — Vocabulary — Part 2: Metals and their alloys

⊘ ISO 22450:2020

Recycling of rare earth elements — Requirements for providing information on industrial waste and end-of-life products

⊘ ISO/TS 22451:2021

Recycling of rare earth elements — Methods for the measurement of rare earth elements in industrial waste and end-of-life products

⊘ ISO 22453:2021

Exchange of information on rare earth elements in industrial wastes and end-of-life cycled products

⊘ ISO 22927:2021

Rare earth — Packaging and labelling

⊘ ISO 23664:2021

Traceability of rare earths in the supply chain from mine to separated products



Future activities





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WG 3 Cobalt

ISO/TC Specialty metals and minerals (AFNOR)

Balloting deadline: 6 june 2023

Included: terminology, classification, sampling, testing and chemical analysis methods, and delivery conditions. **Excluded**: sustainability issues.

Specialty metals and minerals are used for:

)N RF	– electric vehicles: cobalt, lanthanum, lithium
	– fuel cells: platinum, palladium, zirconium
	- solar and photovoltaic technologies: cadmium, indium, gallium
	- batteries [,] lithium, cobalt, nickel, graphite, vanadium, silicon

- magnets: cobalt, rare-earth, niobium, antimony, beryllium
- electronics: bismuth, palladium, silicon, tantalum
- X-ray windows, radiation windows, lightweight alloys for aerospace: beryllium
- aerospace and superalloys: tungsten, vanadium, hafnium, niobium
- wg capacitors: tantalum
 - nuclear reactors and nuclear fuel cladding: zirconium
 - etc.

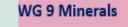








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Future activities

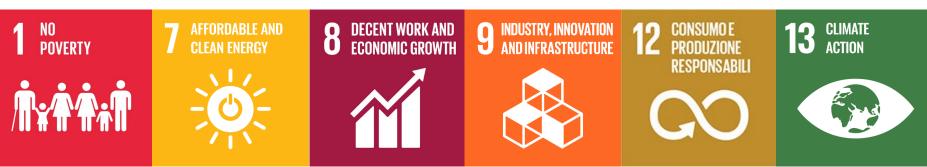




ISO standard for 'Sustainable and Traceable Raw Material Criteria' (DIN) Balloting deadline: 25 july 2023

Specify criteria for Sustainable Raw Materials along industry best practices. **Included**: mineral- raw iron- and non-iron-metals. Applicable to the full value chain of all raw materials, from extraction (mining) to processing, to refining, to final product manufacturing, thereby including the full upstream and downstream value chain. **Excluded**: mine closure and/or mine reclamation stage activities.





ISO/PC would aim to build on existing standards by merging the existing knowledge, uniting it and adding to it such a way that the standard for 'Sustainable and Traceable Raw Material Criteria' can be applied to all primary and secondary raw materials, including mineral- raw iron- non-iron metals and non-agricultural raw materials.

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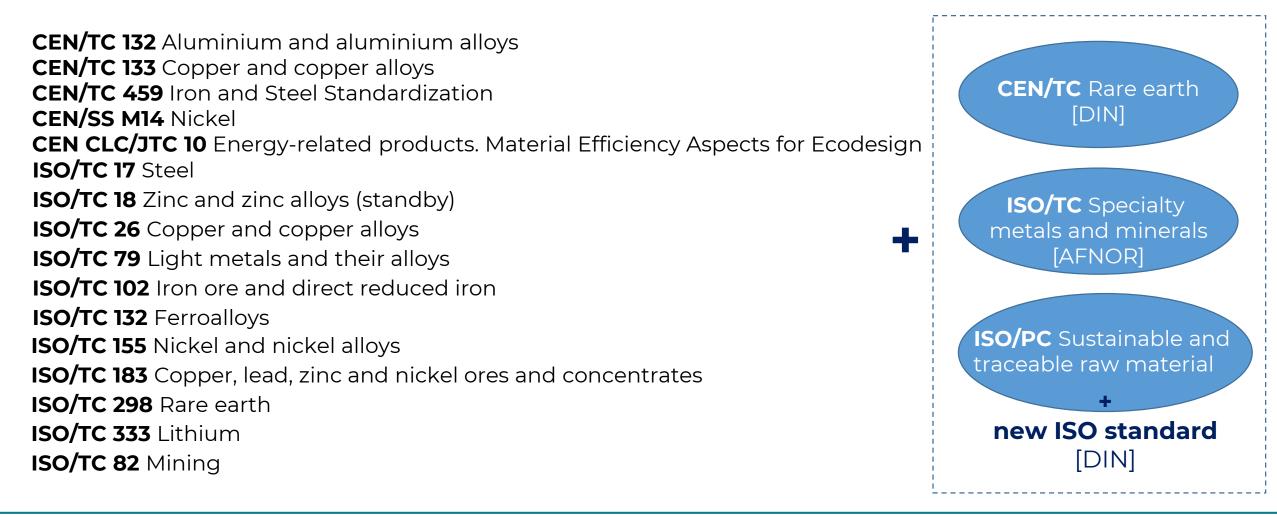




Summarizing...



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Thank you for your attention!

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