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## Rare earth — Packaging and labelling

*Terres rares — Emballage et étiquetage*



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# Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Packaging</b> .....	<b>2</b>
4.1 General principles of packaging.....	2
4.2 Requirements and recommendations for packaging.....	2
4.2.1 Inner (and intermediate) packaging.....	2
4.2.2 Outer packaging.....	3
4.3 Requirements and recommendations for packaging of rare earth products.....	4
4.3.1 Rare earth ore.....	4
4.3.2 Rare earth concentrate.....	4
4.3.3 Rare earth compound.....	4
4.3.4 Rare earth metal and alloy.....	5
<b>5 Labelling</b> .....	<b>6</b>
5.1 General principles of labelling.....	6
5.2 Product information.....	6
5.3 Requirements and recommendations for labelling of hazardous materials.....	7
5.3.1 General.....	7
5.3.2 Cerium metal and cerium-containing flammable alloys.....	7
5.3.3 Metals and alloys in the form of powder.....	7
5.3.4 Products containing radioactive elements.....	7
5.4 Format of labels on packages.....	7
5.4.1 Product information.....	7
5.4.2 Language.....	7
5.4.3 Quality of the label.....	7
5.4.4 Format of the label.....	7
<b>Annex A (Informative) Chemical characteristics of rare earth products</b> .....	<b>9</b>
<b>Bibliography</b> .....	<b>12</b>

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 298, *Rare earth*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

The purpose of this document is to ensure quality assurance, enhanced safety and pollution prevention during the global trade of rare earth products.

Rare earth products (ores, concentrates, compounds, metals and alloys) have some unique chemical and physical properties. For example, some rare earth products can readily react with  $O_2$ ,  $CO_2$  and moisture. In addition, some rare earth products, such as monazite, can emit radiation because they contain thorium and uranium. Under certain circumstances, these features can result in accidents or create hazards (explosion, fire, downgrading the quality of products, radiation exposure, etc.) during transportation and storage. Indeed, several such incidents have been reported and these emphasize the possibility of harm to human health, pollution to the environment and a reduction in product quality. Such problems are likely to have global effects because rare earth products are transported across borders.

It is necessary to package rare earth products properly. It is also essential to share clearly defined information, in a readily accessible format, concerning their physical properties and traceability during global trade. This document provides requirements that will ensure proper packaging and appropriate labelling of rare earth products. Proper packaging can prevent rare earth products from losing their quality and causing accidents resulting from unwanted chemical reactions. Appropriate labelling with precise information on the properties, traceability and the ways of handling the product can also reduce the risk of quality degradation and accidents. Conforming to this document will contribute to ensuring quality, guaranteeing safety and preventing environmental pollution during the global trade of rare earths.

**NOTE** There are numerous existing regulations concerning the packaging, labelling and shipment of materials. Depending on circumstances, such regulations can include References [6] to [23]. In addition, local regulations concerning shipments, transport and packaging can also apply. Many jurisdictions require that a safety data sheet (SDS) accompany any shipment.



# Rare earth — Packaging and labelling

## 1 Scope

This document specifies requirements and recommendations for the packaging and labelling of rare earth ores, concentrates, compounds, metals and alloys that are intended for sale or free distribution. It defines the performance and structure of packaging, and specifies the information to include on the labelling. These requirements and recommendations are designed to ensure quality assurance, enhance safety and prevent environmental pollution during the transportation and storage of rare earth products.

This document is applicable to packaging and labelling during transactions between companies. It does not include packaging by companies during storage in their own plant.

The method of labelling defined in this document enhances safety by indicating properties of rare earth products and ensures appropriate management of the product by indicating the identity of suppliers.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 21067-1, *Packaging — Vocabulary — Part 1: General terms*

ISO 22444-1, *Rare earth — Vocabulary — Part 1: Minerals, oxides and other compounds*

ISO 22444-2, *Rare earth — Vocabulary — Part 2: Metals and their alloys*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21067-1, ISO 22444-1, ISO 22444-2 and the following apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

### 3.1

#### **supplier**

company that produces and provides rare earth ores, concentrates, compounds, metals, alloys or solutions for its customer

Note 1 to entry: It includes the mines, beneficiation plants, hydrometallurgical plants, traders/brokers/blenders of rare earth products.

### 3.2

#### **inner packaging**

container designed to come into direct contact with the product

### 3.3

#### **intermediate packaging**

packaging placed between the *inner packaging* (3.2) and *outer packaging* (3.4) if deemed necessary