

# INTERNATIONAL STANDARD



**Material declaration for products of and for the electrotechnical industry**

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Document Preview**

[IEC 62474:2018](#)

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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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AND FOR THE ELECTROTECHNICAL INDUSTRY****FOREWORD**

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International Standard IEC 62474 has been prepared by IEC Technical Committee 111: Environmental standardization for electrical and electronic products and systems.

This second edition cancels and replaces the first edition published in 2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) The material classes and exemption lists capabilities have been improved.
- b) The introduction and scope have new diagrams and information to give a better overview of the standard and identify what information is mandatory, optional or conditionally mandatory.
- c) Definitions have been added. Minimum requirements to be in conformance with the IEC 62474 standard are defined, including XML format as the officially accepted format. By defining an authority, list identity and list version, the standard format could be used for lists other than the IEC 62474 database.
- d) Terms have been aligned for consistency throughout the document. For example, the “IEC 62474 database” was previously referred to as “IEC 62474 database”, “IEC 62474”, “IEC 62474 Database”, “IEC 62474 DB”.
- e) The annexes have been removed as they are now contained within documents managed by the validation team 62474 (VT 62474). Annex A (Annex B in the previous edition) is provided for non-XML users as a reference only.

The text of this International Standard is based on the following documents:

| FDIS         | Report on voting |
|--------------|------------------|
| 111/498/FDIS | 111/503/RVD      |

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62474 series, published under the general title *Material declaration for products of and for the electrotechnical industry*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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## INTRODUCTION

~~The electrotechnical industry tracks and declares specific information about the material composition of its products for compliance and environmentally conscious design requirements. The electrotechnical industry needs to gather information about the composition of products and product parts that are purchased from suppliers for incorporation into their products. Currently material declarations are driven by individual product manufacturer's specifications and there is no internationally accepted standardization. This results in economic inefficiencies. To simplify requirements across the supply chain and to improve economic efficiencies, it is necessary to standardize the exchange of material composition data and provide requirements for material declarations.~~

~~This International Standard benefits the electrotechnical industry by establishing requirements for reporting of substances and materials, standardizing protocols, and facilitating transfer and processing of data.~~

This document benefits the electrotechnical industry by establishing requirements for reporting of material declaration data, standardizing protocols, and facilitating the transfer and processing of data. Material declarations are used by the electrotechnical industry to track and declare specific product information used for compliance and/or environmentally conscious design (ECD) considerations. To simplify requirements across the supply chain and to improve economic efficiencies, it is important to standardize the exchange of product, product part, material and substance data, and provide requirements within material declarations.

IEC 62474 is made of two parts: this document, which contains requirements for material declarations and a database containing information such as a declarable substance list (DSL), exemption list and data exchange format (see Clause 8).

This document defines the two most common types of material declarations and their requirements:

- 1) Declaration for compliance – is always at a product level in reference to the list of declarable substances and declarable substance groups within the IEC 62474 declarable substance list (DSL).
- 2) Composition declaration – is the much more detailed product part level reporting down to individual substances contained within the IEC 62474 DSL.

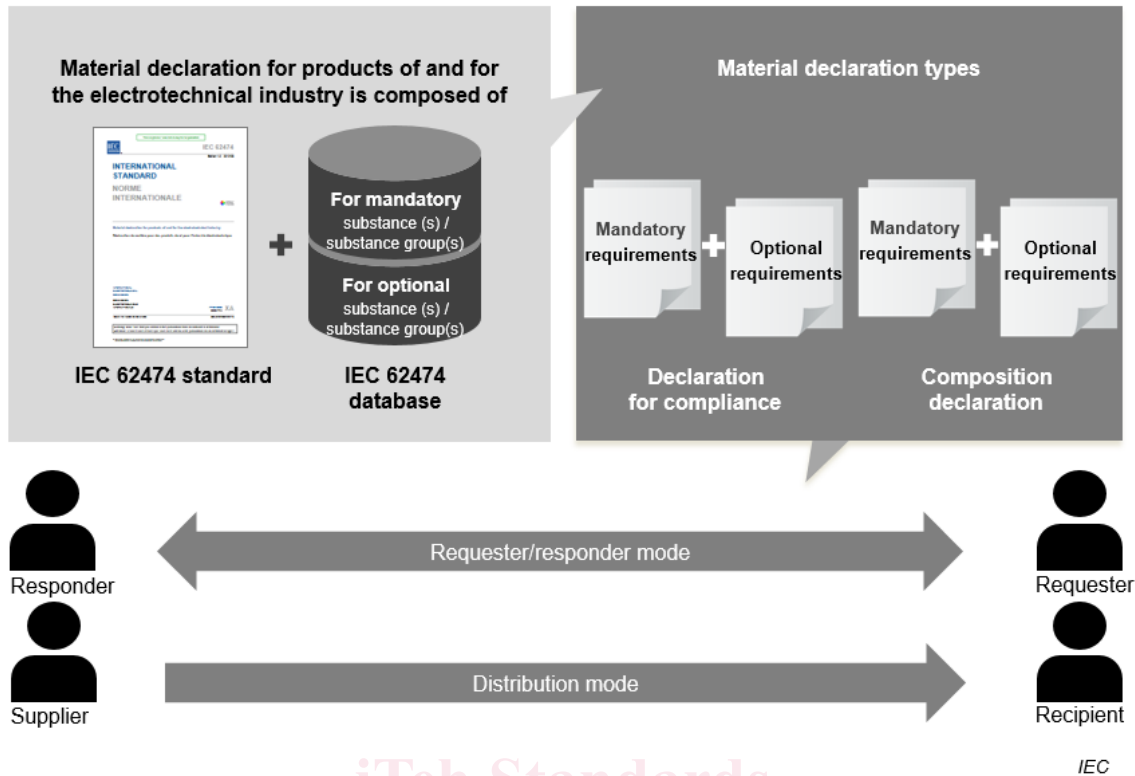
The IEC 62474 database is maintained by the validation team (VT 62474) which updates information in the IEC 62474 database based on requirements specified in the IEC 62474 standard (see Clause 8).

By fulfilling the requirements of the IEC 62474 standard and based on the information from the IEC 62474 database, two types of declaration can be created as shown in Figure 1 below.

- a declaration for compliance which is the information required to determine product compliance with substance regulations and market needs (see 4.4);
- a composition declaration that is the information required to assess where declarable substances above threshold are contained in the product (see 4.5).

The transmission of information in the supply chain can be done in two modes:

- Distribution mode: The supplier provides material declaration data about their product(s) to a recipient.
- Requester/responder mode: The requester determines the type of material declaration(s) the responder will provide.



**Figure 1 – IEC 62474 principles**

The IEC 62474 principles are determined in the following clauses:

- Clause 4 specifies requirements for material declarations.
- Clause 5 specifies the criteria and thresholds for declarable substances (DSs), declarable substance groups (DSGs) and material classes in the IEC 62474 database.
- Clause 6 specifies the criteria for exemption lists in the IEC 62474 database.
- Clause 7 specifies the IEC 62474 database data format and exchange requirements with further information in Annex A (informative).
- Clause 8 specifies the IEC 62474 database maintenance process.

# MATERIAL DECLARATION FOR PRODUCTS OF AND FOR THE ELECTROTECHNICAL INDUSTRY

## 1 Scope

This document specifies the procedure, content, and form relating to material declarations for products and accessories of ~~companies~~ organizations operating in and supplying to the electrotechnical industry. Process chemicals, emissions during product use and product packaging material are not in the scope of this document.

The main intended use of this document is to provide data ~~to downstream manufacturers~~ up and down the supply chain that:

- allows ~~them~~ organizations to assess products against substance ~~restriction~~ compliance requirements,
- ~~they can use~~ allows organizations to use this information in their environmentally conscious design process and across all product life cycle phases.

~~Clause 4 specifies requirements for a material declaration.~~

~~Clause 5 specifies the criteria for declarable substances and material classes in the IEC 62474 database associated with this standard.~~

~~Clause 6 specifies the data format and exchange requirements to be included in the IEC 62474 database.~~

~~Clause 7 specifies the process to regularly update and maintain the IEC 62474 database.~~

~~Although this International Standard specifies base requirements, it offers flexibility to product manufacturers and suppliers in the selection of additional requirements or information.~~

This document specifies mandatory declaration requirements and also provides optional declaration requirements.

This document does not ~~provide~~ suggest any specific method or process to capture material ~~composition data~~ declaration data in the supply chain. However, it provides a data format used to transfer information within the supply chain. Organizations have the flexibility to determine the most appropriate method to capture material ~~composition~~ declaration data without compromising data utility and quality. This document is intended to allow reporting based on engineering judgement, supplier material declarations, and/or ~~on~~ sampling and testing.

## 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.

IEC 61360-1, *Standard data element types with associated classification scheme ~~for electric items~~* – Part 1: Definitions – Principles and methods

IEC 61360-2, *Standard data element types with associated classification scheme for electric components – Part 2: EXPRESS dictionary schema*

~~IEC 61360-5, *Standard data element types with associated classification scheme for electric components – Part 5: Extensions to the EXPRESS dictionary schema*~~

ISO/IEC Directives, IEC Supplement: ~~2011~~, *Procedures specific to IEC*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

#### ~~3.1~~

##### ~~absence declaration~~

~~negative declaration~~

~~statement that materials, substances or substance groups are not present in the product above their respective, specified threshold~~

#### ~~3.3~~

##### ~~homogeneous material~~

~~one material of uniform composition throughout or a material, consisting of a combination of materials, that cannot be disjointed or separated into different materials by mechanical actions, such as unscrewing, cutting, crushing, grinding and abrasive processes~~

#### 3.1

##### article

object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition

[SOURCE: EU REACH Regulation (EC) No.1907/2006, Article 3]

#### 3.2

##### composition declaration

quantitative declaration of substances contained within a product, product part, or material as applicable

#### 3.3

##### data exchange format

data elements and attributes specified in an XML schema and developer's table to support a material declaration exchange

#### 3.4

##### declaration for compliance

declaration regarding the presence or absence of declarable substances and declarable substance groups with mandatory reporting requirements in the IEC 62474 declarable substance list relative to a reporting threshold level for a defined reportable application

#### ~~3.2~~

##### ~~declarable substance and declarable substance group~~

~~substance and substance group that meet the criteria stated in this International Standard and are specified in the IEC 62474 database~~

~~Note 1 to entry—Such substances and substance groups are listed in the IEC 62474 database with either a mandatory or optional reporting requirement above the specified threshold in the IEC 62474 database.~~

### 3.5

#### **declarable substance**

##### **DS**

substance that meets specified criteria for reporting

Note 1 to entry: Criteria for declarable substances within the IEC 62474 DSL are specified in Clause 5.

Note 2 to entry: This note applies to the French language only.

### 3.6

#### **declarable substance group**

##### **DSG**

substance group that meets specified criteria for reporting

EXAMPLE Chromium (VI) compounds.

Note 1 to entry: Criteria for declarable substance groups within the IEC 62474 DSL are specified in Clause 5.

Note 2 to entry: This note applies to the French language only.

### 3.7

#### **declarable substance group substance(s)**

##### **DSG substance(s)**

substance(s) that belongs to a declarable substance group

### 3.8

#### **declarable substance list**

##### **DSL**

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

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Note 1 to entry: This note applies to the French language only.

### 3.9

#### **declaration hierarchy**

tree-like structure containing one or more branches that represents the relationship between product, product part(s), material(s) and/or substance(s) within a material declaration

Note 1 to entry: Figure 5 demonstrates a declaration hierarchy with a single branch

### 3.10

#### **exemption**

allowance for the use of regulated declarable substances or declarable substance groups above their threshold(s) as defined in laws or regulations

### 3.11

#### **list authority**

designated owner of a list

Note 1 to entry: The list authority is used in conjunction with the list identity and list version.

### 3.12

#### **list entry identity**

parameter used to identify a specific entry within a defined list

Note 1 to entry: The IEC 62474 DSL entry identity would be used to identify a specific declarable substance or declarable substance group within its list.

**3.13**  
**list identity**

parameter used to identify a specific list

Note 1 to entry: The list identity is used in conjunction with the list authority and list version.

**3.14**  
**list version**

parameter used to identify a specific version of a list

Note 1 to entry: The list version is used in conjunction with the list authority and list identity.

~~3.13.15~~  
**material**

substance or mixture of substances within a product or product part

~~3.23.16~~  
**material class**

defined classification of materials that are established in the referenced IEC 62474 database for purposes of inventorying aspects of a product, such that no two classes contain the same materials

Note 1 to entry: If a material falls under multiple material classes, such as copper zinc alloy which can fall under copper and its alloys or zinc and its alloys, the substance with the largest mass within the material should take precedence.

**3.17**  
**material declaration**

declaration of certain substances and/or substance groups contained within a product, product part, or material as applicable

Note 1 to entry: The declaration might be a composition declaration, where the amount of the declared substance or substance group is provided or it might be a declaration for compliance, where only the presence or absence of the declared substance or substance group is provided.

~~3.33.18~~  
**mixture**

~~preparation~~

~~mixture~~ composite or solution composed of two or more substances in which they do not react

Note 1 to entry: An alloy is treated as a mixture.

~~3.43.19~~  
**product**

any goods or service

Note 1 to entry: This general definition of product is, in the context of this document, limited to any product of the product category “hardware” according to ISO 9000:2005, No. 3.4.22015, 3.7.6 of and for the electrotechnical and electronic industry (E&E).

Note 2 to entry: This general definition of product(s) used in Clause 4 specifies any goods or service of the responder.

~~3.53.20~~  
**product family**

group of products each of which contains the same substances or material at a similar concentration level

Note 1 to entry: A common case would be an electrical component supplier having many products of the same substance content that have different electrical values, such as a capacitor, resistor, inductor or an integrated circuit.