

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Material declaration for products of and for the electro-technical industry**

**Déclaration de matière pour des produits de et pour l'industrie électrotechnique**



## THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2012 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester.

If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de la CEI ou du Comité national de la CEI du pays du demandeur.

Si vous avez des questions sur le copyright de la CEI ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de la CEI de votre pays de résidence.

IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
Fax: +41 22 919 03 00  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

### About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

### About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

#### Useful links:

IEC publications search - [www.iec.ch/searchpub](http://www.iec.ch/searchpub)

The advanced search enables you to find IEC publications by a variety of criteria (reference number, text, technical committee,...).

It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Stay up to date on all new IEC publications. Just Published details all new publications released. Available on-line and also once a month by email.

Electropedia - [www.electropedia.org](http://www.electropedia.org)

The world's leading online dictionary of electronic and electrical terms containing more than 30 000 terms and definitions in English and French, with equivalent terms in additional languages. Also known as the International Electrotechnical Vocabulary (IEV) on-line.

Customer Service Centre - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: [csc@iec.ch](mailto:csc@iec.ch).

### A propos de la CEI

La Commission Electrotechnique Internationale (CEI) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

### A propos des publications de la CEI

Le contenu technique des publications de la CEI est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

#### Liens utiles:

Recherche de publications CEI - [www.iec.ch/searchpub](http://www.iec.ch/searchpub)

La recherche avancée vous permet de trouver des publications CEI en utilisant différents critères (numéro de référence, texte, comité d'études,...).

Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

Just Published CEI - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Restez informé sur les nouvelles publications de la CEI. Just Published détaille les nouvelles publications parues. Disponible en ligne et aussi une fois par mois par email.

Electropedia - [www.electropedia.org](http://www.electropedia.org)

Le premier dictionnaire en ligne au monde de termes électroniques et électriques. Il contient plus de 30 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans les langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (VEI) en ligne.

Service Clients - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: [csc@iec.ch](mailto:csc@iec.ch).



IEC 62474

Edition 1.0 2012-03

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



Material declaration for products of and for the electrotechnical industry

Déclaration de matière pour des produits de et pour l'industrie électrotechnique

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

PRICE CODE XA  
CODE PRIX

ICS 01.110; 13.020; 29.100; 31.020

ISBN 978-2-88912-971-3

**Warning! Make sure that you obtained this publication from an authorized distributor.  
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references.....	7
3 Terms and definitions.....	8
4 Requirements for material declaration.....	9
4.1 General.....	9
4.2 Base data requirements.....	11
4.2.1 Products.....	11
4.2.2 Product parts.....	11
4.2.3 Substances or substance groups listed in the IEC 62474 database with a mandatory reporting requirement.....	11
4.2.4 Other requirements.....	12
4.3 Additional requirements.....	12
4.3.1 Product parts.....	12
4.3.2 Material classes (optional).....	12
4.3.3 Materials (optional).....	12
4.3.4 Substances or substance groups listed in the IEC 62474 database with a mandatory reporting requirement.....	13
4.3.5 Substances or substance groups listed in the IEC 62474 database with an optional reporting requirement as reference substances or substances or substance groups not listed in the IEC 62474 database.....	13
4.3.6 Other requirements.....	14
5 Criteria and thresholds for substances and material classes in the IEC 62474 database.....	14
5.1 General.....	14
5.2 Declarable substances criteria.....	15
5.3 Material class criteria.....	16
5.4 Reporting threshold levels and reportable applications for declarable substance groups and declarable substances.....	16
5.5 Threshold levels for material classes.....	17
5.6 Reference substances in the IEC 62474 database.....	17
6 Data format and exchange.....	17
6.1 General.....	17
6.2 Data format.....	17
6.3 Data exchange.....	18
6.3.1 Two-way and one-way data exchange.....	18
6.3.2 Data exchange specification in the IEC 62474 database.....	18
6.3.3 Additional data exchange requirements.....	18
6.3.4 XML file.....	18
6.4 Criteria for the IEC 62474 database maintenance of data format and exchange information.....	18
7 IEC 62474 database maintenance.....	18
7.1 IEC 62474 database update process.....	18
7.2 Reclassification and removal of substance groups and substances from the IEC 62474 database.....	19
7.3 Maintenance of data format part of the IEC 62474 database.....	19

Annex A (informative) Examples corresponding to Clause 4 – Requirements for material declaration .....	20
Annex B (informative) Examples corresponding to Clause 6 – Data format and exchange .....	31
Annex C (informative) Examples corresponding to Clause 7 – IEC 62474 database management .....	38
Annex D (informative) Additional information .....	47
Annex E (informative) Declaration examples as XML files .....	49
Bibliography .....	52
Figure 1 – Conceptual diagram for base requirements .....	7
Figure 2 – Conceptual diagram for additional requirements .....	10
Figure A.1 – Schematic representation of products versus product parts along the supply chain .....	29
Figure C.1 – Guidance to validation team on C-1 substance/ substance group change request review .....	45
Table 1 – Declarable substances criteria .....	15
Table A.1 – Base data requirements – Business information .....	21
Table A.2 – Example 1 – base data requirements – Substance/ substance group information .....	21
Table A.3 – Additional requirements – Business information .....	21
Table A.4 – Additional requirements – Product part/material/substance group/substance information .....	22
Table A.5 – Additional requirements – Material class information .....	23
Table A.6 – Base data requirements – Business information .....	24
Table A.7 – Example 2 – Base data requirements – Substance/substance group information .....	24
Table A.8 – Additional requirements – Business information .....	24
Table A.9 – Additional requirements – Product part/material/substance group/substance information .....	25
Table A.10 – Additional requirements – Material class information .....	26
Table A.11 – Additional requirements – Business information .....	26
Table A.12 – Additional requirements – Product part/material/substance group/substance information .....	27
Table A.13 – Additional requirements – material class information .....	28
Table B.1 – Data element types of a material declaration .....	32
Table D.1 – Comparison of IEC 62474 material classes to automotive industry material classes .....	47

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MATERIAL DECLARATION FOR PRODUCTS OF AND FOR  
THE ELECTROTECHNICAL INDUSTRY**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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

A database associated with this document is available at: <http://std.iec.ch/iec62474>. It contains the list of

- Declarable substance groups and declarable substances
- Reference Substances
- Material classes
- XML schema for data format and exchange and the accompanying developer table

The text of this standard is based on the following documents:

FDIS	Report on voting
111/243/FDIS	111/245/RVD

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

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

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

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

**IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

## 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.

## MATERIAL DECLARATION FOR PRODUCTS OF AND FOR THE ELECTROTECHNICAL INDUSTRY

### 1 Scope

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

The main intended use of this International Standard is to provide data to downstream manufacturers that:

- allows them to assess products against substance restriction compliance requirements
- they can use 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 International Standard does not provide any specific method to capture material composition data. Organizations have the flexibility to determine the most appropriate method to capture material composition data without compromising data utility and quality. This International Standard is intended to allow reporting based on engineering judgment, supplier material declarations, or on sampling and testing.

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 Supplement: 2011, *Procedures Specific to IEC*