

TECHNICAL REPORT

Guidance for evaluation of products with respect to substance-use restrictions
in electrical and electronic products
(standards.iteh.ai)

[IEC TR 62476:2010](#)

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CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Terms and definitions	6
4 Framework for evaluation of product.....	7
5 Restricted substance controls (RSC) considerations.....	9
5.1 Product planning and design considerations.....	9
5.2 Sources of Information/data	10
5.2.1 Data selection strategy.....	10
5.2.2 Supplier information	10
5.2.3 Analytical testing	11
5.2.4 Manufacturing and assembling process information	12
5.3 Product evaluation	13
6 Documentation of evaluation results	13
Annex A (informative) RSC content vs. existing industry ISO management system references	15
Annex B (informative) Elements to be evaluated in test reports.....	18
Bibliography.....	19
Figure 1 – Framework for evaluation of product 476:2010.....	8

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**GUIDANCE FOR EVALUATION OF PRODUCTS
WITH RESPECT TO SUBSTANCE-USE RESTRICTIONS
IN ELECTRICAL AND ELECTRONIC PRODUCTS**

FOREWORD

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IEC/TR 62476, which is a technical report, has been prepared by subcommittee IEC technical committee 111: Environmental standardization for electrical and electronic products and systems.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
111/158/DTR	111/172/RVC

Full information on the voting for the approval of this technical report 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- withdrawn,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.

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INTRODUCTION

The restriction of substances in electrical and electronic products is a growing focus of regulation and customer specifications. Producers, therefore, have a greater need to establish processes to meet the substance restrictions requirements in such electrical and electronic products. Due to the complexity of the electrical and electronic industry supply chain, a flexible framework is necessary for the many different types of electrical and electronic product parts and equipment producers.

Criteria for the restriction of substances may differ from one piece of legislation to another and from one customer's requirement to another.

Generally, "presumption of conformity" is assumed. However, in the event of additional evidence being required, producers make relevant documentation available to interested parties. This documentation can be based on physical testing using analytical techniques. However, it is difficult to perform comprehensive analytical testing on complex products and therefore several different evaluation methods, such as information from the supply chain, may be needed.

The aim of this technical report is to provide guidance on the application and limitation of evaluation methods, and associated technical documentation, based on International Standards and industry practices.

The application of appropriate evaluation methods is defined by a producer for a specific product. This technical report provides the basis for a restricted substance control framework.

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GUIDANCE FOR EVALUATION OF PRODUCTS WITH RESPECT TO SUBSTANCE-USE RESTRICTIONS IN ELECTRICAL AND ELECTRONIC PRODUCTS

1 Scope

IEC/TR, which is a technical report, provides a framework for the use of internationally accepted standards, tools and practices to evaluate electrical and electronic products with respect to restricted substances. This technical report can also be applied to declarable substances which are not restricted in electrical and electronic products.

This technical report provides guidance on how technical documentation and relevant evaluation and control methods should be selected and applied for restricted or declarable substances of any producer's product.

It is not intended for setting a new management scheme or for certification purposes. Evaluation and control methods for substances in products can be integrated into an existing management system, where available.

2 Normative references

There are no normative references. Informative references are noted in the bibliography.

NOTE This clause is included so as to respect IEC clause numbering.

3 Terms and definitions

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

3.1

restricted substance

substance which is limited in its use in a product, part or material by regulation or customer contractual requirements

3.2

declarable substance

substance to be declared in a product by regulation or customer contractual requirements

3.3

producer

organization that receives materials, parts and sub-assemblies from suppliers and provides products to customers

NOTE 1 In this technical report the producer has the responsibility to evaluate the product with respect to restricted substance requirements.

NOTE 2 This technical report is written from the perspective of the producer within the supply chain. When the producer provides a product further down in the supply chain his role changes to supplier.

3.4

supplier

organization up-stream to the producer that provides it with materials, parts and/or sub-assemblies

3.5**customer**

organization or person that receives a product

(ISO 9000:2005, 3.3.5, modified)

3.6**restricted substance controls****RSC**

framework of procedures for the control by a producer of restricted substances in its products

3.7**technical documentation**

documents with product-related data and information that are used and retained to demonstrate compliance

NOTE This information could relate to the structure and composition of the product, e.g. test reports or other data describing the materials or product parts used; or it could relate to management systems, e.g. relating to the control of processes used to make the component or product.

3.8**producer self-declaration**

first-party declaration confirming evaluation of product with respect to restricted substance requirements

3.9**product category**

group of technologically or functionally similar products where environmental aspects can reasonably be expected to be similar

(IEC 62430:2009, 3.15)

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4 Framework for evaluation of product

It may be necessary for an organization to demonstrate compliance with regulations and market requirements through self-declaration or contractual agreements established along the supply chain. The evaluation of a product may rely on a series of appropriate methods, strategies or processes, for material, parts and/or sub-assemblies of any electrical or electronic product. Multiple methods are generally required, given that electrical and electronic products often contain many materials, parts and/or sub-assemblies with different levels of complexity. Therefore, a multi-level approach for the control of restricted substances in products is beneficial.

The framework covers all design, manufacturing and other operational functions (e.g. procurement) to evaluate the product for restricted substances.

The producer shall define and execute restricted substance controls (RSC) for the operations related to its product category under consideration and ensure the execution of adequate RSC by its suppliers. When evaluating a product, the producer shall have a level of technical documentation that demonstrates effective RSC.

Specific substance restrictions in electrical and electronic products can be required by legislation or customer specifications. The producer should consider relevant sources for substance restrictions.

The RSC should cover, at a minimum, the following elements:

- Restricted substances and evaluation criteria. The product planning and design should indicate product category technologies, structures, product materials, parts and sub-assemblies sourcing and related design process rules.
- Identification of source(s) of information. Depending on the complexity of materials, parts or sub-assemblies in a particular product or product category, one or any combination of the three sources of information (not in any priority order) described below can be used:
 - supplier information;
 - analytical testing;
 - manufacturing and assembling operations, including incoming supply, process and delivery control;
- Evaluation of information.

The producer has responsibility for producing the RSC procedures. This means that the procedures are established, documented and implemented. A procedure for review and continual improvement of restricted substance controls should be established.

NOTE These internally documented procedures could be considered “company confidential” and would not necessarily be shared openly within the supply chain.

Figure 1 illustrates the framework for product evaluation as described above. Applicable IEC TC 111 environment committee standards are referenced in the figure below. See cited clauses for more details.

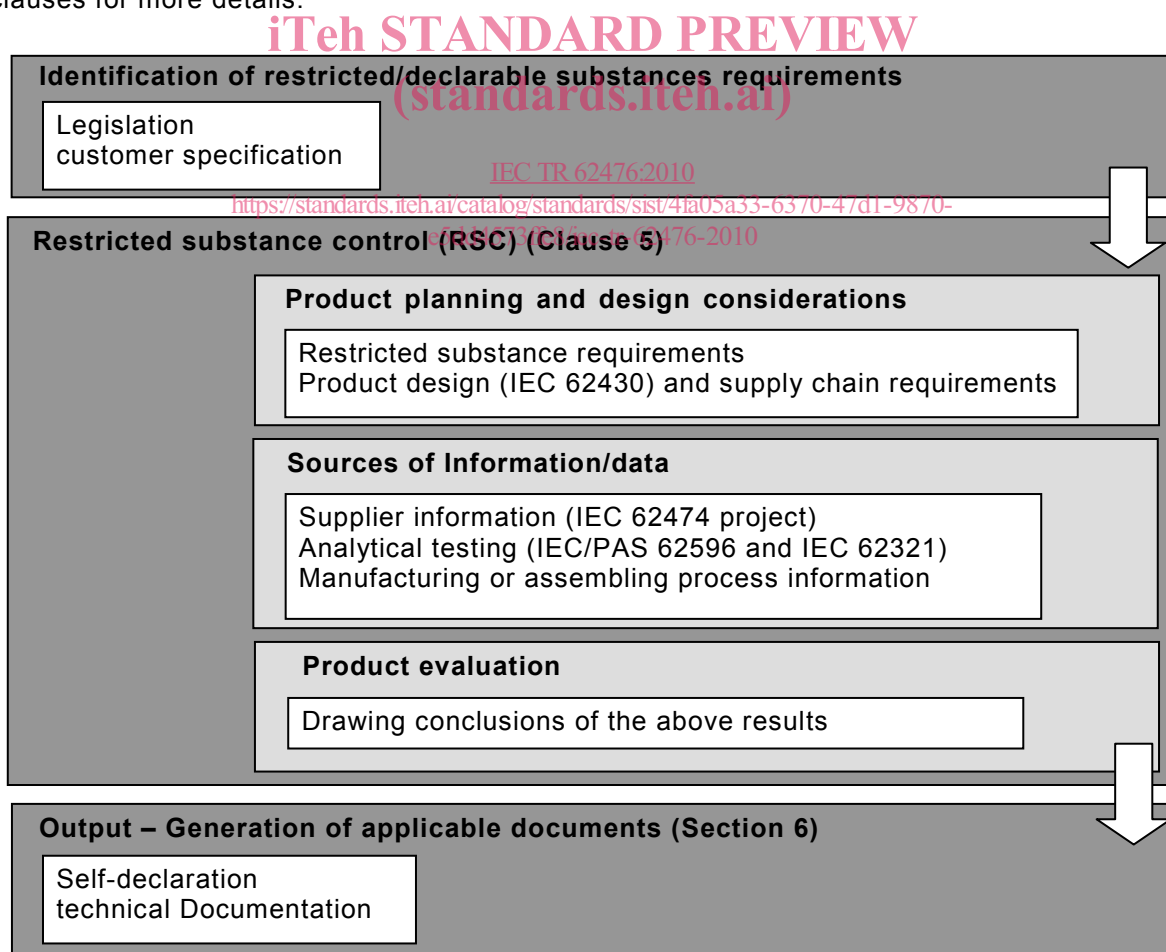


Figure 1 – Framework for evaluation of product

Each producer in the supply chain is responsible for defining his own evaluation methods for each product or product category. The identification of products included in a product category is the responsibility of the producer based on his knowledge of the product line.

RSC is specific to a producer. It may be part of an established quality management system (e.g. ISO 9001) or environmental management system (e.g. ISO 14001) or equivalent management system. It may also be an independent set of documented procedures and their records. A producer relying on outsourced manufacturing needs to ensure that their outsourced manufacturing operations also have effective RSC. Annex A provides examples of RSC requirements in relation to internationally recognized management systems.

The application of evaluation strategies and methods can be unique for every product, but such strategies should be based on the producer's policy, product planning and design and technical documentation. Therefore, the selection or definition of evaluation methods for product materials, parts and/or sub-assemblies should be based on the producer's experience or technical judgment of the likelihood that a restricted substance may be present in either the supply chain or in internal product operations.

Finally, in order to declare that the requirements are met, the producer can provide a "producer self-declaration". If further information is needed, technical documentation can be provided.

5 Restricted substance controls (RSC) considerations

5.1 Product planning and design considerations

The producer top management should ensure that a documented strategy on the control of restricted substances is defined and appropriate for the purpose of the organization. A producer's RSC strategy may be detailed and targeted towards specific product lines or specific environmental regulations, or more general and broader to cover multiple product lines and operations in multiple geographical areas covering multiple environmental regulations, as appropriate to the organization.

As a first step, it is important to develop a list of restricted substances. Documented evaluation methods for different types of materials based on common knowledge or expert competence should be in place for the producer and its suppliers. There should be evidence that procedures are being followed and that materials declarations or other types of technical documentation have been assessed to confirm completeness and accuracy.

A framework for evaluation of a product may lever an environmentally conscious design (ECD) process such as defined by IEC 62430 and as it relates to substance use restrictions. For example, the IEC 62430 standard specifies that the ECD process includes defined steps such as:

- a) analysis of the regulatory and stakeholders' environmental requirements;
- b) identification and evaluation of environmental aspects and corresponding impacts;
- c) product planning, design and development;
- d) review and continual improvement;
- e) sharing ECD information in the supply chain.

At the product planning and design stage, the following information should be available:

- restricted substance requirements (regulatory, customer or other requirements);
- those aspects that have, or can have, significant impacts on the restricted substance content in products during manufacturing or assembly;
- identification of product categories;