

IPC-1754-AM2

Amendment 2

2020 - May

Materials and Substances Declaration for Aerospace and Defense and Other Industries

An international standard developed by IPC



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- Contain simple (simplified) language
- Just include spec information
- Focus on end product performance
- Include a feedback system on use and problems for future improvement

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Materials and Substances Declaration for Aerospace and Defense and Other Industries Amendment 2

Developed by the Materials and Substances Declaration for Aerospace, Defense, and Other Industries Task Group (E-31k) of the Supplier Declaration Subcommittee (E-31) of IPC

Users of this publication are encouraged to participate in the development of future revisions.

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Materials and Substances Declaration for Aerospace and Defense and Other Industries

Amendment 2

Replace Section 1 as follows:

1 SCOPE This standard establishes the requirements for exchanging material and substance data for Products between suppliers and their customers. This standard was created through participation of aerospace, defense, heavy equipment, automotive, electronics and solution provider representatives.

This standard covers the process for exchanging data on chemical substances (“Substances”) that may be present in materials, used in production, operations, maintenance, repair or overhaul/refurbishment of the supplied product or subproduct.

This standard applies to business-to-business transactions. It is not intended to be used by the general public when making purchasing decisions. This standard is not a compliance guide.

Multiple Declarable Substance Lists (DSL) designated by various industries may be applicable to this standard for reporting purposes. One example of an industry designated DSL is the International Aerospace Environmental Group (IAEG®) Aerospace and Defence Declarable Substances List (AD-DSL).

Replace Section 1.1 as follows:

1.1 Purpose This standard covers specific requirements for data exchange as described in the Scope.

Replace Section 2.2.2 as follows:

2.2.2 REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). <http://echa.europa.eu/>. REACH imposes market and use constraints and reporting requirements for substances, including those present in articles. An article is defined later in Section 3.1.

Replace Section 3.7 as follows:

3.7 Full Substance Declaration (FSD)* All substances in the product and their masses (if known) at the material, subproduct or product level have been reported.

Note: Requirements for FSD are specified in Section 5.

New Section 3.24:

3.24 Material Class Classification of a Material defined by an authority.

New Section 3.25:

3.25 Product Category Classification of a Product defined by an authority.

New Section 3.26:

3.26 Substance Group Two or more substances, that share at least one chemical sub-structure, or chemical or physical property under a generic name.

Source IEC 62474:2018

Replace Figure 4-1 as follows:

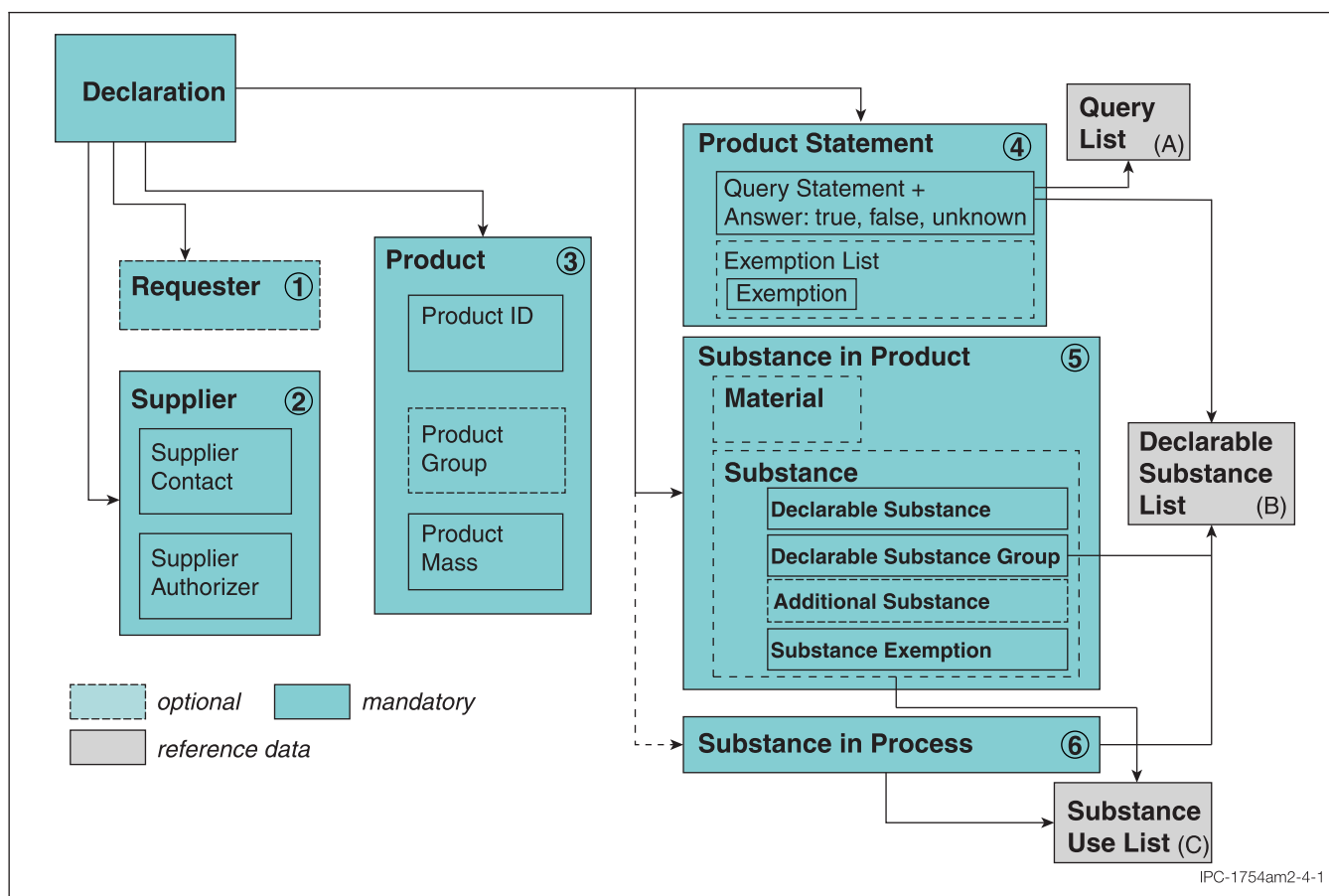


Figure 4-1 Data Structure of the Declaration

Replace Section 5.1.1 as follows:

5.1.1 Product Statement Declaration (Class E) A Class E product statement declaration provides supplier responses to a set of query statements (query list) that are relevant to the industry. For example, a query statement may refer to whether or not a certain type of substance is contained in the product. More than one query list may be included if the declaration is applicable to multiple industries.

A Class E product statement declaration **shall** be declared in all declarations that conform to this Standard. The following requirements apply to the Class E Product Statement Declaration:

- The authority and the identity of the product statement list **shall** be declared.
- Each query statement **shall** have a unique identity.
- The supplier response to each query statement **shall** be either: true, false or unknown.
- The supplier **shall** provide a response to each query statement included in the query list(s) that have been included in the declaration.

A Class E declaration contains the following data groups:

- Requester Data if declaration mode is “Request/Reply.”
- Supplier Data,
- Product Data if it’s a single product declaration,
- Product Group including Product Data (if multiple Products are included within the same declaration),
- Product Statement as a Query List, with its ID and the answers: true, false, unknown,
- Exemptions with IDs (if applicable),
- Attachments (attached files as proof of evidence of the declaration, basis of estimate, assumptions, etc.)

Replace Section 5.1.2 as follows:

5.1.2 Declarable Substance Declaration (Class F) For a Class F declaration, all substances identified in the DSL and contained in the Product(s) at or above any applicable threshold specified in the DSL **shall** be reported.

Some substances may be identified in the DSL by a substance group to which the substance belongs. If a substance group listed in the DSL is present in the product at or above the applicable threshold level specified in the DSL, and the specific substance(s) in the product are not known, the substance group may be reported instead of the individual substance(s). The declaration should not report both the substance and the substance group as this will result in double reporting. However, if a substance belonging to a substance group(s) in the DSL is reported, the substance may be reported to belong to a substance group by the supplier. This additional information on substance group(s) helps requesters identify which substances are part of a substance group.

All substances identified in the DSL and required for production, operations, maintenance, repair or overhaul/refurbishment process for the Product(s) may be reported.

When a DSL substance or substance group in product is reported, its mass information **shall** be provided.

If there are multiple DSLs referenced in one declaration, and a reported substance appears on at least one DSL, the declaration still qualifies as a Class F. If a substance is reported that is not on any of the DSLs, the declaration **shall** be Class G.

Replace Section 5.1.3 as follows:

5.1.3 Extended Substance Declaration (Class G) Class G declaration is a Class F declaration plus any additional substance information up to and including a Full Substance Declaration (FSD).

The following requirements apply to a Class G FSD.

- An FSD requires 100% of all product substances to be reported including respective masses; declaring masses as “unknown” may allow the use of the FSD flag to be set as true.
- An FSD includes Confidential Business Information (CBI) allowances.
- Specific FSD and CBI reporting requirements **shall** be specified by the Authority responsible for assigning the applicable Declarable Substances List (DSL).

Class G may include an FSD flag denoting full substance declaration.

Note: Class G declaration facilitates converting IPC-1752A Class D, or other Full Material/Substance formats, to an IPC-1754 to avoid reentering of data valid to the IPC-1754 requirements.

Replace Section 5.2 as follows:

5.2 Data Requirements for Lists The contents of the data lists are not included in the Standard, but the data requirements and formats are specified by the Standard. These are industry specific Declarable Substance List (DSL), Query List, Use Descriptor List, Product Category List, Material Class List, and Material Property List.

Replace Section 5.2.1 as follows:

5.2.1 Declarable Substance List The DSL is used to identify substances and/or substance groups with declaration requirements when they are constituents of the product or used in production, product operations, maintenance, repair or overhaul/refurbishment processes.

The DSL **shall** be identified by an authority, an ID, and a version. A release date may be provided.

A unique ID **shall** be specified for each substance and substance group on the DSL and is assigned by the authority. Each substance or substance group **shall** have a substance name or substance group name.

Each substance on the DSL may include dates to represent their: entry into the list, modification, and removal date as applicable. Individual substances and substance groups may have identified thresholds for the minimis levels within the DSL.

Note 1: A threshold of “zero” may be used for a substance on a DSL when a threshold is not specified.

Note 2: See Appendix D for examples of Declarable Substance Lists.

Replace Section 5.2.3 as follows:

5.2.3 Use Descriptor List A Use Descriptor List provides a reference list of common uses of substances, substance groups, materials or processes. Each Use Descriptor list **shall** be identified by an Authority and be assigned a unique ID. An application for the Use Descriptor List is to provide a list of Safe Use Instructions.

Each Substance Use in a Use Descriptor List **shall** be identified by an ID.

Note 1: See Appendix D for the ECHA Use Descriptor list which is an example of a Use Descriptor List with a specific ID and “ECHA” as the Authority.

Note 2: Safe Use Instructions refer to EU REACH regulation, Article 33.

New Section 5.2.4:

5.2.4 Material Class List Material classes are extended and provided as a Material Classification under a given authority for classifying any reported material in a Product Declaration. All the reportable material classes are defined in a Material Class List under this authority. Material Class List also provides a classification for mixtures.

New Section 5.2.5:

5.2.5 Product Category List A Product Category List provides a Product Classification under a given authority for classifying any reported Product and sub-Products in a Product Material Declaration. All the reportable Product Categories are defined in multi-levels hierarchical structure within the Product Category List.

Replace Section 5.3.3 as follows:

5.3.3 Product Product data includes:

- Product Identification data
- Product Mass data
- Additional information:
 - A flag “isArticle” (true / false) for all products, subproducts or material
 - A flag “allMaterialsDeclared” (true / false) for all products and subproducts
 - Country of Manufacture
 - Quantity of Product, or “Number of Instances,” as a Subproduct in a parent Product
 - Product Number, or other identifiers for the Product
 - Product Category, as optional information

Replace Section 5.2.4 as follows:

5.3.4 Material Material data includes:

- Material Identification data
- Material Mass data
- Additional information:
 - A flag “isArticle” (true / false) for all Materials
 - A flag “isHomogeneous” (true / false) that may be used to indicate that the material is or is not a homogeneous material
 - Manufacturer of the Material
 - Material Use Description, as informative data
 - Material Specification ID (e.g. company proprietary specification or industry standard administered by a Standards Development Organization or trade association)
 - Material Class, as optional information
 - Material Property, as optional information

Replace Section 5.3.5 as follows:

5.3.5 Substance and Substance Group Substance data and Substance Group data includes:

- Substance or Substance Group Identification data
- Substance or Substance Group Mass data
- Additional information:
 - Substance Use Description
 - Substance Group Information (applicable only to declaration of Substance)
 - Exemption Information

Replace Section 5.3.7 as follows:

5.3.7 Substances in Product Substances in Product data for one Product or a Product Group includes:

- Product Identification data or Group Identification data (*optional*)
- Material data
- Substance and/or substance group data

Replace Section 5.3.9 as follows:

5.3.9 Substances in Process Substances in Process data, if provided, **shall** include at a minimum:

- Product identification data or Group Identification data (*optional*)
- Process Stage data
- Substance and/or substance group identification data

Substances in Process data may also include:

- Additional Product data
- Additional Process data
- Material data
- Additional Substance data/substance group data

Replace Section 5.3.10 as follows:

5.3.10 Character set The character set for all data fields in the Standard is ASCII except for some data fields that contain proper names like city, company, location, names of people that could contain accented characters; these data fields are treated as non-ASCII character under the UTF-8² that supports non-ASCII characters.

Replace Section 5.4.6 as follows:

5.4.6 BOM Level Declaration As part of this standard, the “Level” of the subproduct in the product Bill of Materials (BOM) may be provided to facilitate the roll-up of multiple levels of declarations by the solution providers’ tools.

The BOM Level should be used when the supplier provides for their product declaration a breakdown of the subproducts or BOM to indicate the BOM level at which materials and substances and/or substance groups are contained. See Figure 5-3.

This field identifies the level of the product or subproducts in the BOM structure:

- BOM level of product is 1,
- BOM Level of direct subproducts of the product is 2,
- BOM Level of subproducts of level 2 subproduct is 3, etc.

Replace Section 5.4.9 as follows:

5.4.9 Substance Mass Reporting The standard allows several use cases to report the substance mass quantity:

- Either with absolute mass (e.g., kg) or relative mass as a percentage (%) or in parts per million (ppm),
- With a single (nominal) or a range of values,
- Above or below a given declared value,
- Or “unknown.”

The use cases may be combined together:

- the “minimum value,” “maximum value,” “nominal value” may be provided using absolute mass or relative mass,
- “above a minimum value” may also be provided. For example: declared value is the minimum value and the maximum value is either the mass of material (if provided) or the mass of product with absolute mass, or 100% with relative mass,
- “below a maximum value” may also be provided. For example: minimum is zero, maximum is the declared value.

When the substance mass is reported as a relative mass (i.e. as a percentage or ppm), the basis of the calculation depends on whether or not the mass of the material containing the substance is declared:

- If the numerical value for material mass is declared, then substance relative mass **shall** relate to the material mass,
- If material mass is not declared, then substance relative mass **shall** relate to the subproduct mass (if BOM level is provided) or otherwise to the product mass.

The substance mass reporting requirements specified in this subsection **shall** also apply to substance groups when declared.