User Guidance

IPC-1754 - Materials and Substances Declaration Data Exchange for Aerospace and Defence and Other Industries

Version 2.0

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**1.0 Introduction**

In today’s global economy and the rising number of changing and emerging product-related substance regulatory requirements and material obsolescence, companies and their supply base have an increasing need to obtain and report information about materials and substances contained within their products.

Materials and substances data exchange protocols have been established in various industries to facilitate product related substance and material data transaction between customer and suppliers. Downstream companies then use and interpret this data to manage related risks for product compliance, environmental safety and supply chain chemical obsolescence.

In order to be optimally efficient in gathering necessary data, while minimizing supplier impacts and resistance, declaration process standards and tools have been developed to specify the mechanical aspects of data gathering – data elements (related formats, units and quality requirements) and information data transfer protocols. These standards have been developed to satisfy the needs of their users (e.g., for companies in the automotive, or electronics industries). IPC-1754 - *Materials and Substances Declaration for Aerospace and Defence and Other Industries* has been developed primarily for the aerospace and defence (AD) industry but can be used by any other industry seeking to communicate materials and substance data through their supply chains in a consistent and repeatable manner.

Individual organizations or industries may require differing data elements in IPC-1754 that need to be defined by the specific request for declaration or other business to business agreement. The standard allows for the declaration of process substances as well that may not be contained in the final product for technology obsolescence risk evaluation. Some industries do not require the material data as mandatory and only require the notification of substances in the product.

This guidance document contains general and specific recommendations that are necessary for reporting materials and substance data using IPC-1754.

**2.0 Why IPC-1754 Materials and Substance Data Exchange?**

The IPC-175X family of standards provides two standards for substance and material declaration (IPC-1752x and IPC-1754); however, the two standards provide different features and are focused on addressing the needs of different industries. IPC-1754 was developed using the structure and lessons learn from IPC-1752A.

IPC-1752x was developed by the electronics industry for supporting the EU RoHS directive and has been extended to support EU REACH and other similar legislations applicable to the electronic industry. It is a preferred format for reporting an electronic component, such as a semiconductor, where the manufacturer controls, or has knowledge of the specifications and 100% composition of the materials being used. IPC-1752x is designed for regulatory compliance declaration for EU RoHS with either a product statement (class A) or a more accurate declaration against all listed substance classes (class C); it also supports material and substance declarations up to a full declaration (class D).

IPC-1754 was developed for industries with complex products and extensive supply chains, primarily structured for supporting EU REACH regulations. The standard is designed to allow materials and component data to be combined in a manner that allows for compilation and regulatory compliance evaluation as the data is moved along the supply chain. This approach allows for communication of substance data even when some of the data is considered proprietary. The structure also enables combining and preserving existing IPC-1752x data elements to allow it to work for multiple industries for exporting data to internal systems. IPC-1754 provides for declaration requests from a query list (Class E), from a declarable substance list (Class F) or for all substances in a product or process (Class G).

IPC-1754 provides the AD and other industries a standard set of criteria for the communication of information on substances and materials. Without standardized communication criteria, individual companies will create company- specific solutions and will cause much confusion and extra effort in the supply chain. Standardized industry requirements and format for substance data exchange provides:

* Improved supply chain awareness and buy-in
* Ecosystem to support development of tools to support data communication and management
* Reduced turnaround time for declarations
* Improved quality of data (vs. custom data request)
* Reduced cost versus custom IT tools development and training

IPC-1754 sets out the data to be passed between requester and supplier using standardized schema. It provides the ability for requestors to define which parts they seek declarations for. It provides suppliers the opportunity to provide a declaration to all their customers using a distribution option. It also provides the ability for a responder to collate their supplier data, as applicable, as part of their declaration to their customer.

Solution providers have created stand-alone software products for declaration generation and materials and substance data management and can integrate these features into existing Product Lifecycle Management (PLM) or Enterprise Resource Planning (ERP) systems.

**3.0 Material Declaration Considerations**

A basic question that any organization needs to answer is “What are the obligations for reporting materials and substance declaration data?” If not clearly understood by those receiving a declaration request, organizations that can help answer the questions about why am I doing this and what is needed to protect my company while fulfilling our obligations to our customers and government organizations include:

Legal

Program or Product Management

Contracts

Corporate or Social Responsibility

Government Affairs

Global Operations

Engineering

Environment, Health & Safety (EHS)

Within company structures, there may be other departments that are stakeholders in a materials and substance declaration program that may need to agree on the use and internal structure of managing materials and substances data.

For example:

1. Legal
   1. Regulatory assessment – Assessment of regulatory requirements
   2. Contract compliance – Adherence to contractual requirements
   3. Risk Management – Risk of business disruption
2. Engineering
   1. Materials and Process Engineering – Assessment of materials/substances changes upon product technical performance. Assessment of constituent material and substance changes upon designs, perform tests, and implement design changes.
   2. Manufacturing Engineering/Operations – Process engineering material/substance modifications and substance use databases.
3. Supply Chain
   1. Supplier Management – Supplier surveys, assessment of supplier understanding, and decision on declaration tool use.
   2. Operations – Identification of substances and potential alternatives
   3. Supply and Internal Quality – Assessment of materials/substances changes upon product quality performance.
4. IT
   1. IT systems involvement from EHS, PDM, MRP systems integration with the IPC schema and tools and managing software suppliers. Overall cybersecurity oversight.
5. Sales & Program/Product Management
   1. Sales and Marketing – Agreement on messaging relative to full understanding of the constituent chemical/substances in products as well as understanding of industry needs.
   2. Program Management – Funding and customer declarations processing.
6. Aftermarket
   1. Support/Overhaul and Repair - Creation of product manuals and overhaul and repair manuals. Updates when required. Knowledge of repair depot needs internationally.
7. EHS
   1. Overall process management assessment including industrial hygiene studies and reports. Company green goals implementation.
8. Product Stewardship
   1. Assessment of overall regulatory risks, substance data collection and management.

**3.1 Business to Business Data Exchange**

Obtaining accurate product-related materials and substances data largely depends on the ability to source data from as far upstream in the supply chain as possible. At every supplier level where hardware/components (“articles”) are produced, added materials and substances may affect the composition of a final product at the lower (downstream) tiers of the supply chain. Thus, the requirements for data may be “flowed” up through the supply chain and acquired data must flow down supply chain and be summarized at each lower level in order to provide an accurate representation of the composition of final products.

In a business-to-business relationship, the data gathering process usually starts by downstream companies imposing declaration requirements on their direct suppliers. These suppliers may then impose similar requirements on their direct suppliers, and this approach may be repeated at each level in the supply chain. Related data management requirements (e.g., initial reporting deadlines, timing of updates, certification of information, protection of sensitive data, etc.) may also be specified, wherever needed.

**3.2 Confidential Business Information**

The exchange of an IPC-1754 data set may result in a conflict between contractual, intellectual property, and national security requirements.

In general, global substance regulations may require disclosure of substance information despite concerns with confidential business information by organizations.

Examples of CBI:

Technical product information

Supply chain / Supplier information

Trade Names

Contractual Data Sharing Restrictions

Export Regulations

It is up to each actor in the supply chain to understand their data governance requirements which are mandated by contract, law, or policy. The aforementioned data governance requirements should always supersede any requirements set forth by the IPC-1754 standard.

The following are non-exhaustive examples of when a data governance issue could arise during the communication of data:

Export Controls

A supplier has been asked by its customer to provide an IPC-1754 declaration for a product within an indented Bill of Materials (BOM) structure. The customer has also asked for supplier part numbers to be presented within each product and subproduct.

The product is an International Traffic in Arms Regulation (ITAR) and/or Export Administration Regulations (EAR) controlled good. The customer requesting the data may not be allowed to receive data in this format due to nationality and/or inadequate licenses. The supplier must ensure their data communication is within an ITAR controlled environment and may discuss options with their customer or other third parties which allow for meeting the data request expectations while following ITAR/EAR requirements.

Confidential Business Information

If the product being provided by the supplier includes substances or special alloys that the supplier considers proprietary, the supplier may wish to have these treated as confidential business information (CBI) and to hide the identity of these substances and materials in the declaration.  There are provisions in the IPC-1754 for suppliers to mask substance name and identity information under certain circumstances as described below.

If the substance that the supplier wishes to remain anonymous is not on the declarable substance list (DSL), the supplier may wish to declare the substance using a generic name to hide its identity.  Commonly used phrases to replace the substance name are “Trade Secret”; “Proprietary” or “Confidential”. However, the identity of the substance may only be hidden if it is not listed on the DSL.

IPC-1754 requires that all DSL substances that are present in the product above threshold must be declared.  This is because DSL substances typically have regulatory impacts that the requester needs to know about.  For such substances, the supplier may wish to arrange a confidentiality agreement with the requester or another measure to ensure that CBI is appropriately protected.

If the requirements of the IPC-1754 standard result in a conflict with a data governance requirement, it is recommended to engage your business partners (customers, solution providers, internal stakeholders, and other relevant parties) to determine an appropriate resolution for data communication needs. Military export regulations often introduce considerations relevant to substance declaration regulations.

Depending on the regulation or contract requirement, when an organization is gathering materials and substance data, a common factor that one faces is the lack of availability or specificity of the data. Some regulators and several industries have recognized this problem and have published guidelines to get the supply chain started.

**4.0 Materials and Substance Data**

**4.1 Internal Data**

If your company has a Product Stewardship and Regulatory Compliance department, contact them for help assessing the possible presence of regulated substances being in your products. If you do not have an organization such as this, the data will come from a variety of areas within your company.

What are the product considerations? Organizations within a company that could have information on materials or substances in your product as supplied to your customer include:

Product Engineering

Materials Management

Product Manufacturing

Quality

Supplier Relationship Management

Global Purchasing

Enterprise Resource Planning

Logistics

Manufacturing Resource Planning

Information Technology

Export Compliance

Sales

What are the manufacturing process considerations? Organizations within a company that could have information on materials or substances are used in your manufacturing processes include:

EHS

Purchasing

Maintenance

Process / Manufacturing Engineering

Custodial or Janitorial Services

Information Technology

**4.2 Supplier Data**

In general, if the choice of materials or substances used in a product or process is made by the supplier, the supplier is considered responsible for providing this information to the requester. These material choices may involve supplier designs, process selection, industry standard items or commercial off-the-shelf (COTS) items.

In responding to a declaration request, the initial impulse may be to leverage information that has been gathered for similar activities in the past. This approach may not provide all the data needed and in some cases may be invalid data for material regulatory reporting. For example, material safety data sheets (SDS) identify hazardous materials used in the work place. These may not be present in the final product, and so should not be reported in the final product composition. Another example is chemicals which undergo a change during manufacturing, such as paint or unfinished polymers. Several organizations have published guidance and helpful information to assist in this determination:

The European Chemical Agency (ECHA) has published [Guidance on Requirements for Substances in Articles](https://echa.europa.eu/documents/10162/23036412/articles_en.pdf/cc2e3f93-8391-4944-88e4-efed5fb5112c) to assist with compliance to the EU REACH regulation (EC No. 1907/2006).

The automotive industry has published guidance for their members using the International Materials Data System (IMDS).

The aerospace and defense industry trade association, International Aerospace Environmental Group (IAEG) has published a Declaration Development Support Document. Additionally, the AeroSpace and Defence Industries Association (ASD) of Europe have published [Sectoral Guidance for Substances in Articles under REACH](https://www.asd-europe.org/sites/default/files/atoms/files/2021_0716_ASD%20Guidance%20WFD_SCIP_v1.0_published.pdf) to provide strategies for declaring complex objects.

The process for a company to obtain materials declaration information from external sources would essentially be the same for both product and process declarations.  It would involve requesting the supplier of an item to provide the necessary information needed.  A product declaration would include the chemical content of the delivered item.  A process declaration would include the substance used within the manufacturing processes of the delivered item, even if these substances may not be known to be delivered in the final item.

Industry standard and commercial off-the-shelf items are often procured through distributors. There may be difficulty in obtaining the necessary information from distributors since they do not manufacture the item.  However, distributors are an important part of the supply chain and declarations from them are likely required to get accurate information. Your company may need to review your contractual obligations with distributors.  In some cases, a company may need to contact the suppliers directly even though they purchase the item via distributors.

Alternatively, third party vendors have industry standard part or COTS databases that can provide substance information directly.

**4.3 Calculation of Substance Mass**

When a substance is reported in a declaration, it includes mass information – this may be either the mass of the substance or a mass percent (the mass of the substance divided by the mass of the material or subproduct (or product) that the substance is assigned to in the declaration hierarchy). However, the recipient of the declaration may not know enough about the manufacturing of the product (or its parts) to identify the declarable article. It is best if the supplier identifies this declarable article and passes sufficient information down the manufacturing chain for downstream manufacturers to assess compliance requirements. For the recipient to be able to determine the mass percent of the SVHC in the article, the supplier needs to include the declarable article as an object in the declaration (this could be a material, subproduct or the product) and it needs to be identified as an article.

Key features of the IAEG publication [Declaration Development Support Document](https://www.iaeg.com/elements/pdf/IAEG_Declaration_Development_Support_Document_v2.0.pdf) includes examples of how to calculate mass percent of a substance using SDS, drawing or computer models and considerations for typical process or product uses.

**5.0 Definitions and References**

**5.1 Definitions**

**Article** – An article is an 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.

**Confidential Business Information** (CBI) – All information owned by, or in the possession or control of, respondents that is not in the public domain related to the research, development, manufacture, marketing, commercialization, distribution, importation, exportation, cost, pricing, supply, sales, sales support, or use of a product.

**Declarable Article** - The article into which an instance of the substance of concern was first incorporated.

Notes:

(i) The EU REACH regulation imposes requirements on product manufacturers / importers to identify Substance of Very High Concern (SVHC) that are present in their products above threshold. Following a European Court of Justice ruling, the European Chemical Agency (ECHA) published a guidance document clarifying that the threshold level for reporting the SVHC is 0.1% of any article in a product. This is often referred to as the “Once an Article, Always an Article” or O5A ruling.

(ii) The US Environmental Protection Agency (EPA) defines an article as a manufactured item (1) which is formed to a specific shape or design during manufacture; (2) which has end use functions dependent in whole or in part upon its shape or design during end use; and (3) which does not release a toxic chemical under normal conditions of processing or use of that item at the facility or establishments.

**Declarable Substance List** - A defined set of substances used in products or processes that are of interest to the requestor for regulatory or product risk reasons. These sets can be regulation based, industry or company specific.

**Enterprise Resource Planning** (ERP) - A category of business management software—typically a suite of integrated applications—that an organization can use to collect, store, manage, and interpret data from many business activities.

**Material Use Description** - Function of the material for the product or process being declared.

**Product** – Any substance, material, sub-part, sub-assembly or assembly up to a finished manufacturer’s assembly that is the subject of a declaration.

**Product Lifecycle Management** (PLM) - The process of managing the entire lifecycle of a product from its inception through the engineering, design, and manufacture, as well as the service and disposal of manufactured products.

**Query List** – A series of questions or product statements that are used by the requestor to seek information about substance use, regulatory risk or reporting.

**Subproduct** – Elements of a declaration that is comprised of upstream supplier data to be incorporated into the next level product. A subproduct can be a material, sub-part or sub-assembly.

**Substance Group** – Two or more substances that share at least one chemical structure, or chemical or physical property under a generic name

**Substance Use Description** - Function of the substance for the product or process being declared.

**Trace Substances** - Substances that may be present in a mixture or formulation that are detectable but are not intentionally added or are present as a contaminant. Amounts of trace elements in specifications are sometimes expressed as maximum values only.

**5.2 Regulatory References**

**EU Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) -** Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006. REACH imposes market and use constraints and reporting requirements for substances, including those present in articles.

**EU Restriction of Hazardous Substances (ROHS) -** Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

**EU Waste Framework Directive (WFD)** - Directive 2008/98/EC of 19 November 2008. The directive is concerned with measures to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste and by reducing overall impacts of resource use and improving the efficiency of such use.

**EU Substance of Concern In articles as such or in complex objects (Products) (SCIP) Database** - The EU SCIP database is the database for information established under the Waste Framework Directive (WFD). The SCIP database ensures that the information on articles containing Candidate List substances is available throughout the whole lifecycle of products and materials, including at the waste stage. The information in the database is then made available to waste operators and consumers.

**Appendix**

**A.1 IPC-1754 Features and Data Elements**

IPC-1754 includes a number of features that support compliance assessment against a broad range of substance regulations and other uses such as obsolescence management. The standard specifies a data exchange format and rules for exchanging substance and material information.

**A1.1 - Declarable Substance List (DSL)**

Requestors of an IPC-1754 declaration can select one or more DSL, by specific version, to specifically request substances or substance groups to be declared. This list may be based on a regulation such as REACH Candidate List, a unique list to a certain industry or to the requesting company.

**A1.2 - Query Lists**

Requestors of an IPC-1754 declaration can specify a series of questions about your products depending on the regulatory or product risk concerns they might have. These questions can be asked as a specific version of one, or several query lists. If the requestor does not specify a particular set of questions, a query list can be a single statement that declarable substances are present in the product or not.

**A1.3 - Material / Substance Use Descriptions**

Depending on the regulation or requirement, the requestor may ask for a declaration of the use for the materials or substances being declared. The lists of uses are often defined by the regulation but can be supplemented by the requestor. Each list can change over time and may have specific versions.

**A1.4 – Substance Groups**

Some substances may be identified in a regulation or by the DSL as 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.

**A1.5 - Reporting Exemptions**

The RoHS Directive, REACH Annex XVII, End of Life Vehicle (ELV) and Biocide are examples of regulations that allow for exemptions from restrictions under certain conditions.

Exemptions are limited in time and reassessed on a regular basis, taking into account

* the availability, practicability and reliability of substitutes
* the environmental, health and consumer safety impacts of substitution
* the socioeconomic impact of substitution
* any potential adverse impacts on innovation

Industry regularly applies for the renewal of exemptions or for additional applications to be exempted from the regulation requirements. Each request must be evaluated, and when appropriate, an exemption is granted.

**A1.6 - Product vs Subproduct**

An important feature of the IPC-1754 data structure is the ability to take supplier product data, incorporate it with your product data and pass it all on to your customers. At each level in the supply chain, the data is considered, and declared as, ‘product’ data for that entity. To the next level in the supply chain, that same data is considered ‘subproduct’ to distinguish it from that entity’s own ‘product’ data within the IPC-1754 data structure. When that entity makes a declaration to their customer, it all is treated as combined product data and the cycle continues through the supply chain to the final level.

**A1.7- Incomplete Declaration Information - Use of “Unknown”**

IPC-1754 was developed to be inclusive of various industries while allowing for suppliers to communicate data while a query or complex details concerning the material or substance is being obtained.  Specifically while the supplier is completing a declaration and the mass is “unknown” thereby notifying the requester that the information is still being developed and that follow-up may be needed. In this situation, the expectation is that the use of unknown is temporary and that further business-to-business communication should be initiated by either requester or supplier to follow up on this additional information.

**A1.8 - Full Substance Declaration**

The intention of this guidance is to discuss how IPC-1754 can support the creation of a Full Substance Declaration (FSD), also known as a Full Substance Disclosure or a Full Material Declaration (FMD). Most solution providers provide the option to declare to a DSL or to provide all the substance information.

It is important to note that the terms FMD and FSD are industry terms which have different interpretation by various industry groups, individual companies, and/or individuals themselves. The rules by which these entities determine what is an acceptable FMD or FSD are up to those various entities and are not described in IPC-1754 or herein.

Some features of a FSD include:

* A FSD is only in effect when substances or materials are included that define the entire product or subproduct.
* A FSD can cover substances and materials in a product and/or substance in process
* The FSD flag is only used when declaring 100% of the substances. When proprietary information is indicated in the declaration, the FSD flag cannot be used.
* Trace substances may be excluded in the FSD.

**A1.9 - Request/Reply vs Distribute Declarations**

**Request/Reply** - Requests for information can come from customers, regulators, non-governmental organizations (NGOs), or the public. The request may come in a pre-started IPC-1754 form or may be an email with specific information requested that can be included in the IPC-1754 requester section (requestor contact info, requester part number/description, DSL to be used, etc.). The information in the requester fields (Request) shall be included with the response (Reply). These fields contain information that the requester needs to be able to systematically tie the response to the request.

**Distribute** - Another process of distributing the declaration information and the appropriate supplier information is to publish it for distribution. This most often will be accomplished by completing a declaration about the product or products in general and having them available internally for submission to a requester when a request is received or making the IPC-1754 files available on a company website. In this process, Requestor information is not included, but all other information required shall be included in the declaration along with any other information the supplier would like to include.

**A2 Substance in Process Declarations**

Data declared by the many tiers/branches of suppliers for complex articles can provide information that can be used to efficiently share obsolescence notifications. This creates transparency to complex supplier interdependencies and enhances the ability to navigate the increasing global regulatory and obsolescence landscape.

Historically, material/substance declarations have focused on the content of the delivered product. The ever-changing global regulatory landscape and the proliferation of substance use restrictions (e.g. EU REACH) have driven an increased activity in material obsolescence. This creates greater risk to manufacturing, operation, maintenance and repair of products. Some material suppliers/formulators have used the constriction of the marketplace as an opportunity to assess their business environment and in some cases, withdraw formulations from the market. In many cases, these notifications are not received by all downstream users in time to test and qualify alternatives. Depending upon timing and demanding performance requirements, mitigation can be expensive and disruptive.

Recognizing the increasing risk to industry, IPC-1754 incorporates the capability to provide declaration of substances in processes. It is not uncommon for substances used in processes to be reactive, evaporative or transformational and not remain as part of the delivered product. These process substances cannot be derived from the substances declared in product, making the visibility critical for global enterprises to identify and manage their substance related risks.

Additionally, if the processor locations and substances are declared, companies can identify and mitigate potential risks to production, operations, maintenance, and/or repair. If a supplier provides the formulation product name as part of the reported data, it is even possible to identify usage in the supply chain and share visibility of material obsolescence of explicitly identified formulations/products.

**A3 Reporting REACH SVHCs in a Declaration**

IPC-1754 provides a method for suppliers to declare articles in alignment with EU REACH 1907/2006 legislation, Article 33. Articles may be materials, subproducts or products. To provide this information in a material declaration, the substance and mass relative to the article needs to be provided.

The EU REACH regulation applies significant requirements on product manufacturers to identify substances of very high concern (SVHCs) listed on the REACH Candidate List that are present in their products. Following a European Court of Justice ruling, the European Chemical Agency (ECHA) published a guidance document clarifying that the threshold level for reporting the SVHC is 0.1% of the declarable article in a product. According to the ECHA guidance, the declarable article is when a substance is applied such that an article is created and not based on a complex object or finished assembly that is made up of individual parts that are themselves articles.

This creates challenges for product manufacturers and requires them to obtain additional information from their supply chain on whether a SVHC is present (above 0.1%) in the declarable article of which it is a constituent. For compliance assessment, a key piece of information needed by downstream manufacturers is the mass percent of a SVHC in its declarable article. Similar to the ECHA guidance, IAEG publication [Declaration Development Support Document](https://www.iaeg.com/elements/pdf/IAEG_Declaration_Development_Support_Document_v2.0.pdf) includes examples of how to calculate mass percent of a substance using SDS, drawing or computer models and considerations for typical process or product uses.

**A3.1 - Using the IPC-1754 ‘is Article’ flag to support REACH SVHC assessment**

The IPC-1754 declaration standard supports this information requirement by allowing materials and subproducts to be reported in the declaration. The data exchange format also provides an (isArticle) flag for materials, subproducts and the product so that the supplier can identify any object in the declaration as to whether or not it is an article.

If a material has a defined shape that makes it an article per the regulation, then this material should be declared as a sub-product or a product in addition to the material information.

**A3.2 - Examples of a single SVHC in the product**

Figure 1 illustrates a simple declaration hierarchy of an SVHC (S1) that is included in a material (M1) which is included in part (P1) (which is the declarable article). Material M1 is identified as not an article and subproduct P1 is identified as the declarable article (isArticle=True) therefore the recipient is able to calculate that the mass percent of S1 in the declarable article (P1) is 0.2g / 10g = 2% (which is above the 0.1% threshold that triggers the REACH communication requirements). In this example, the top-level product is an article (sometimes referred to as a complex object) and therefore also has isArticle=True.

Figure 1: Simple example of a declaration with an SVHC in an article (subproduct)

It’s up to the supplier that first incorporates an SVHC into an article to identify this to downstream manufacturers.

**A3.3 - Multiple SVHCs added at different stages of manufacturing**

There may also be products that include more than one SVHC. In some cases, the SVHCs may be applied at different stages during manufacturing, resulting in a complicated declaration hierarchy. One such example is illustrated in Figure 2.

* The substance S1 (an SVHC) is included in a plating material (M1) which is applied to a lead frame (P1) which then becomes a plated lead frame (P2).

P2 is the declarable article that includes S1, therefore the mass % of S1 in an article is the (mass of S1) / (mass of P2).

If this mass % is above 0.1%, then S1 has REACH obligations.

* The substance S2 (another SVHC) is a constituent of die attach material that is applied to the die (P3) and the plated lead frame (P2) to become the die assembly (P4).

In this case, P4 is the declarable article for substance S2 and is used as the basis of the mass % calculation to compare to 0.1%.

* Overall, in this declaration hierarchy of the integrated circuit (IC), subproducts P4 and P2 are both declarable articles for different SVHCs, which creates a complex declaration.

Figure 2: Example of a declaration hierarchy

For the recipient of a declaration to properly assess REACH obligations, it’s necessary for the supplier to declare the material or subproduct (or product) that is the declarable article and identify that it as an article (by using the isArticle flag).

Note: in some cases (for simple products), the product may be the declarable article (e.g. the product provided by a supplier may be a single piece of molded plastic) or the product may be a mixture (e.g. wet paint) and there is no article.

**A.4 - Reporting for SCIP**

The EU Waste Framework Directive introduced SCIP requirements. The ECHA have created the SCIP database requirements, some of which are significantly different from EU REACH. Not all companies are required, or permitted, to submit data into the SCIP database. Companies with requirements per the directive are known as “duty holders”. Duty holders either import or manufacture the article or complex object and place into the European Union market. Country requirements differ within the EU; non-EU companies may not have any legal obligation to do so. However, IPC-1754 is structured such that the SCIP data can be part of any REACH declaration.

The requirements for SCIP data submission by the duty holder is triggered when the SVHC concentration exceed 0.1% w/w threshold similar to REACH Article 33 communication obligations. SCIP submissions, require additional information for each different type of article containing the SVHC. For example, a product that contains the SVHC lead (Pb) in ten different articles within the product, needs ten sets of article information to be provided with the SVHC. Table A4-1 provided details of this additional information.

|  |  |  |
| --- | --- | --- |
| Category | SCIP Information Requirements for Submission | (M/O) |
| Common requirements for both articles as such and complex objects | **Article Name**: Main name assigned to the article as such or the complex object; free text | M |
| **Other name(s)**: e.g. Brand; Model | O |
| **Primary Article Identifier:** e.g. European Article Number (EAN); Global Trade Item Number (GTIN); Universal Product Code (GPC); Catalogue number; ECHA Article ID, part number. | M |
| **Other Article Identifier (s)** | O |
| **Article category** Identification of the article as such or the complex object from a harmonized list (with codes and description) which cannot be achieved by the article name(s) assigned, until a certain level of granularity, based on function/use. It is important to identify certain relevant waste streams. Allowed values: The integrated Tariff of the European Union – [TARIC](https://ec.europa.eu/taxation_customs/business/calculation-customs-duties/what-is-common-customs-tariff/taric_en) - list, based on the Combined Nomenclature (CN) description and code [[Annex I](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L:2018:273:TOC) to Council Regulation (EEC) No 2658/87] (the relevant descriptions and codes must be selected). | M |
| **Production in European Union** In this field, the duty holder answers to the question: is the article produced or assembled in the EU? Allowed values: yes; no; unwilling to disclose | M |
| **Safe use information.** It includes the possibility to state that there is “No need to provide safe use information beyond the identification of the Candidate List substance”. |  |
| **Disassembling instructions** document (e.g. pdf format). The indication of the language of the provided document is required. |  |
| Additional requirements for complex objects only | Add a link to an existing article or create a new article or a complex object to link with this complex object. | M |
| Number of occurrences of the linked article in the complex object | M |
| Additional requirements for articles as such only (concern elements | **Candidate List (CL) substance** (name; EC and CAS no., if available), using a IUCLID reference substance identity part of ECHA’s ‘Candidate List (Reference Substances) Package’ | M |
| **CL concentration ranges of the substance** in the article:  > 0.1% w/w and < 0.3% w/w; ≥ 0.3% w/w and < 1.0% w/w; ≥ 1.0% w/w and < 10.0% w/w; ≥ 10.0% w/w and < 20.0% w/w; ≥ 20.0% w/w and < 100% w/w; > 0.1% w/w and ≤ 100% w/w. | M |
| **Material category** Identification of the material the article (containing the Candidate List substance) is made of from a list to be provided by ECHA. | M |
| **Mixture category** Identification of the mixture category from the European product categorisation system ([EuPCS](https://poisoncentres.echa.europa.eu/eu-product-categorisation-system)) containing the Candidate List substance(s) incorporated in the further processing step (e.g. coating) of an article or incorporated when joining or assembling two or more articles in a complex object (e.g. adhesive, solder). | M |

Table 1 Information requirements for Article (EU SCIP)

IPC-1754 Amendment 2 includes the additional SCIP mandatory fields into its data exchange schema as optional fields.

|  |  |  |
| --- | --- | --- |
| **IPC-1754 (Added Fields)** | **EU - SCIP (M/O)** | **IPC-1754 (M/O)** |
| SCIP: Multiple ProductID | M | O |
| SCIP: Product Category | M | O |
| SCIP: Material Category | M\* | O |
| SCIP: Mixture Category | M\*\* | O |
| SCIP: Material Characteristics | O | O |
| SCIP: Safe Use Instructions | M | O |

\* Material Category mandatory if Mixture Category not filled in

\*\* Mixture Category mandatory if materials Category not filled in

Table 2 IPC-1754 AM2 fields added to harmonize with SCIP database.

**Revision History**

|  |  |
| --- | --- |
| **Date** | **Nature of Changes** |
| 18Aug2018 | Initial Release |
| 28Aug2023 | Complete re-write to focus on instructions for supplier being asked to submit a declaration in accordance with IPC-1754. |