Working Group 1 Materials and Substances Declaration Frequently Asked Questions (FAQ)

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Version 03

This document is released for purpose of addressing questions frequently asked pertaining to the materials and substances declaration process and Working Group 1 resources used during the declaration process.

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Version History

Date	v#	Modified By	Section, Page(s) and Text Revised
28 January 2019	1.0	Sub-team 2/4	AD-SRT Frequently Asked Questions
26 February 2022	2.0	WG1	Restructure to include frequently asked questions regarding all WG1 materials and substances declaration tools
30 January 2025	3.0	WG1	• Updated to new 2024 IAEG document template and requirements. • Added Executive Summary. • Expanded questions and answers in Section 2.1 - Aerospace and Defense Declarable Substances List (AD-DSL). • Added Section 2.2 - AD-PFAS Lists. • Provided clarification to answers within Section 3 - Aerospace and Defense Substance Reporting Tool (AD-SRT). • Improved and added details to Section 4 - Declaration Development Support Resources.

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Materials and Substances Declaration Frequently Asked Questions Executive Summary

Working Group 1 (WG1) of the International Aerospace Engineering Group (IAEG) is dedicated to advancing collaborative efforts in aerospace engineering through the development of innovative solutions and best practices for substance declarations. This group comprises a diverse team of experts from various sectors within the aerospace industry, including manufacturers and suppliers.

The primary objectives of WG1 include:

1. Standardization: Establishing and promoting industry standards that enhance safety, efficiency, and interoperability across aerospace systems and processes.
2. Knowledge Sharing: Creating a platform for members to share insights, experiences, and technical expertise, fostering a culture of continuous learning and improvement.
3. Collaboration: Encouraging partnerships among stakeholders to drive innovation and address complex engineering challenges that require a multidisciplinary approach.

WG1 is committed to delivering actionable recommendations and guidelines that will benefit the entire aerospace community. Through regular meetings, workshops, and collaborative projects, the group aims to stay at the forefront of industry advancements and ensure that its members are well-equipped to meet the evolving demands of the aerospace sector.

As WG1 continues its work, it remains focused on enhancing the safety, efficiency, and sustainability of aerospace engineering practices, ultimately contributing to the advancement of the industry and the betterment of global air travel. Furthermore, we have created and included Appendix A - “IAEG WG1 List of Acronyms” which defines all acronyms used by WG1.

1 Introduction

Welcome to our Frequently Asked Questions (FAQ) document! Here, we aim to provide you with clear and concise answers to the most common inquiries about our working products, substance lists and documents. Whether you are a member of IAEG, partner, or simply curious about what we do, this resource is designed to help you find the information you need quickly and efficiently. **If you do not find the answer you are looking for, please feel free to reach out to our support team for further assistance, send an email to WG1@iaeg.com.**

To navigate this document, please expand each section by clicking the arrows located to the left of the titles. This will reveal the content within each section. The IAEG will continuously update this document to incorporate any additional comments and feedback received.

Disclaimer Notice: When contacting the IAEG via email, please refrain from attaching any declaration documents or proprietary information from your organization. All supporting files included in your email should be directly related to the deliverables of WG1. Thank you for your cooperation!

2 Substances Lists

2.1 Aerospace and Defense Declarable Substances List (AD-DSL)

2.1.1 Introduction

The AD-DSL is a list of substances subject to supplier substance reporting in the Aerospace and Defense (AD) supply chain. IAEG has identified regulated chemical substances of concern to the international AD industry that are subject to current use, product content restrictions or reporting requirements with potential impacts on the industry or its customers. The AD-DSL is used for supplier reporting of chemical substances that are included in its products, are used in the production of those products, or are required for operation or maintenance of those products.

The AD-DSL was developed through collaboration of IAEG member companies, and is actively managed to ensure currency, while continuing to meet the needs of the AD industry.

2.1.2 General Questions about the AD-DSL

2.1.2.1 What is AD-DSL?

A list of substances that are known or are suspected to be used in AD industry products and processes and that may impose compliance and/or materials obsolescence-related risk on the industry.

2.1.2.2 Where can I find the AD-DSL?

https://www.iaeg.com/chemicalrpt/addsl

2.1.2.3 How can you use the AD-DSL?

The AD-DSL is developed by the IAEG for use by the members of the AD industry and its supply chain to collect product-related substance information from suppliers. Creating a standard list of substances that are known to impact most AD industry companies, allows them to focus on those substances, rather than every regulation in the world. The AD-DSL can then be responded to by suppliers with multiple AD customers, as opposed to multiple lists and reporting formats. It is similar to other industry-focused DSLs such as automotive (GADSL), electronics industry (IEC 62474 DSL).

2.1.2.4 How often is the AD-DSL updated?

Annually.

2.1.2.5 What to do if you spot an error

Please email WG1@iaeg.com to report an error with the AD-DSL.

2.1.2.6 Why is a certain substance on the list?

The AD-DSL includes substances that are product related and have regulatory-based restrictions, and/or reporting requirements of industry interest.

2.1.3 Individual elements on the AD-DSL

2.1.3.1 What is an IAEG ID?

The IAEG ID is a unique identifier assigned by IAEG and its consultant to all substances on the list**.** It is used to track substances and their relationships to associated regulations and is useful for substances that do not have an identifier like a CAS or EC number.

2.1.3.2 How do you determine the regulatory criteria (R1, R2, I)?

The regulatory criteria provide a high-level understanding of the requirements associated with the regulatory drivers of the substance without details of region and/or regulation. IAEG assigns regulatory criteria to each substance after a careful review of underlying regulation(s). It should be noted that the regulatory criteria may change as the regulatory landscape develops. The presence or absence of any IAEG regulatory criterion is not an indication of whether a substance may or may not be used in AD products or processes.

As a benefit to IAEG membership, IAEG members have access to supporting documents that directly link IAEG IDs to their regulatory drivers.

2.1.3.3 How can there be multiple regulatory criteria assigned to a single substance?

As noted above, regulatory criteria provide a high-level understanding of the requirements associated with the regulatory drivers of the substance without details of region and/or regulation.

As substances listed on the AD-DSL may be associated with one or more global regulations with differing regulatory drivers, multiple regulatory criteria are listed to cover all known regulatory requirements associated with the substance.

2.1.3.4 What does "date first added" and "revision date" mean?

This information is added to the AD-DSL to document version control. The “date first added” tracks when a substance made its initial appearance on the AD-DSL and the “revision date” notes when there has been a change in status to a substance, such as a change to the regulatory criteria or movement to/from the deletions tab.

2.1.3.5 What do the different entry types (Substance Direct Entry, Group Member, Group Direct Entry) mean?

The entry type terminology is derived from European Chemicals Agency (ECHA) REACH Substances of Concern In Products (SCIP) database and was added to the AD-DSL for compliance with the IPC-1754 reporting standard. Entries that are considered grouping headers and cover several substances are called “Group Direct Entry.” Furthermore, a substance that falls under this category or grouping is identified as a “Group Member.” Group Members may be explicitly mentioned in associated regulations, or they are identified by IAEG if they fit the definition of the grouping. Substance Direct Entry are individual substances that do not fit within any grouping.

2.1.3.6 Why are certain substances shaded?

Certain substances are shaded within the AD-DSL to help visually identify chemical family groupings present on the AD-DSL. The shading matches the information available in the entry type column; darker shading indicates the substance is a Group Direct Entry, while the lighter shading indicates the substance is a Group Member. Group Members are listed under their associated parent group, as indicated by the "Parent Group IAEG ID" column.

2.1.3.7 Why is there a deletion tab on the AD-DSL?

The deletions tab on the AD-DSL documents substances that have been removed from the AD-DSL, either due to changes to their underlying regulatory status (inclusion of an AD exemption, substance removal from regulatory) or deletions due to errors such as duplicative entries.

2.2 AD-PFAS Lists

2.2.1 Introduction

IAEG has developed a list per- and polyfluoroalkyl substances (PFAS) primarily derived from substances that may be in active use, as suggested by their presence in governmental chemical inventories, including (but not limited to) inventories like the Canadian Domestic Substances List and the US Toxic Substance Control Act Chemical Substance Inventory.

2.2.2 IAEG PFAS List (IAEG-PL)

A list of PFAS that focuses on those substances identified to be in active use and thus may be present in AD industry products or the materials required to maintain, repair or overhaul those products. As there is no single definition of PFAS being used globally, it should be noted that the IAEG-PL is non-exhaustive and focuses on including PFAS that are likely to be present in AD industry products and materials.

2.2.3 How was the IAEG-PL created?

Initially, PFAS were identified on one of several national inventories in regions of interest to the AD industry. The resulting list of substances was screened for dependency by IAEG members to cover their processes and products, and their supply chains dependence on the listed PFAS.

2.2.4 Why is the IAEG-PL separate from the AD-DSL?

Many of the PFAS listed are not currently regulated like substances on the AD-DSL and thus are not currently within the scope of the AD-DSL. However, it is anticipated that global regulatory activity for PFAS will greatly increase in the very near future, requiring the AD industry to identify dependencies in anticipation of the rapid increase in regulatory activity. The IAEG-PL is an attempt by IAEG to help AD companies prepare for upcoming regulatory activity. It should be noted that PFAS substances may become listed on the AD-DSL if, and when, they become regulated (and thus are within the scope of the AD-DSL).

2.2.5 How can the IAEG-PL be used?

The IAEG-PL can be used by companies to examine their dependence on listed PFAS (and including dependencies in the supply chain). This will support better positioning by those companies when the PFAS they depend on are subject to regulatory action.

3 Aerospace and Defense Substance Reporting Tool (AD-SRT)

3.1 Introduction

The AD-SRT is a data reporting tool that is compatible with IPC-1754[1] (Materials and Substances Declaration for Aerospace and Defense and Other Industries) and is intended for companies in the AD supply chain to use for materials and substances declarations. Further, the AD-SRT is designed to be used with the AD-DSL in providing substance declarations. The AD-SRT, AD-DSL, and other supporting tools and data developed by IAEG are provided for voluntary use.

3.2 General Questions about the AD-SRT

3.2.1 Where can I find additional data on the AD-SRT?

IAEG is the authority and owner of the AD-SRT. All information related to the AD-SRT is available at www.iaeg.com.

3.2.2 Does the AD-SRT reflect substance regulatory derogations/exemptions applicable to Aerospace & Defense product applications or uses?

No, the AD-SRT does not reflect this data.

3.2.3 How do we know the AD-SRT that we are completing contains the latest version of the AD-DSL?

The version of the AD-DSL used in the AD-SRT is identified in the AD-SRT at the bottom of the Requester-Supplier tab. The AD-DSL version number listed in that tab can be compared to the version number of the latest AD-DSL posted on the IAEG Chemical Reporting Website.

3.2.3.1 If asked to report against the AD-DSL, should I report impurities or trace contaminates?

The requirement to report impurities on the AD-DSL depends on several factors, including customer requests and contractual agreements.

1. **Customer Requests:** The decision to declare impurities is influenced by what the customer specifies, as the AD-DSL does not define specific minimal values. The term "intentionally added" is used to determine if impurities need to be declared. If an impurity does not contribute to the formulation or is not consistently present, it typically does not need to be reported.

2. **Contractual Agreements:** The need to declare substances, including impurities, can be subjective and may depend on the contractual agreement between the supplier and the requester. Any thresholds or exemptions regarding reporting impurities are not defined within the AD-DSL and should also be established through contractual requirements.

[1] IPC Standards to be updated as new releases are provided by the organization.

3. **Regulatory Considerations:** It is important to be aware that the presence of an impurity could potentially be subject to restrictions. Therefore, reviewing relevant regulations is essential to determine if there is a minimal threshold for reporting.

4. **Best Practices:** Some member companies prefer to see data on substances present as trace amounts or impurities, especially if no threshold is specified. Including a footnote in the declaration to clarify the nature of the substance can enhance transparency.

3.3 Using the AD-SRT

3.3.1 Are there resources to assist in completing a declaration using the AD-SRT?

IAEG recommends utilizing IAEG declaration tools (e.g., support documents and videos), while working with requesters and/or suppliers in developing and implementing a declaration process with realistic expectations and schedules. In addition, the AD-SRT has a "General Instruction" tab with the Excel workbook that contains limited instructions of AD-SRT fields. The IAEG tools are being made available on the IAEG website.

3.3.2 What are some recommended steps in developing a declaration process to complete AD- SRTs for our products?

IAEG recommends engaging internal stakeholders early on to determine what data is needed to complete declarations for company products. Stakeholders should meet periodically to support the development, communication, and implementation of any internal plans, including timing, needed resources and address challenges to meet company goals. The stakeholders and plans may include engaging with customers, suppliers and/or utilizing consultants or declaration tool providers to assist in developing/implementing a declaration process. If the company has many products requiring declarations, it may also require additional resources and budget to be successful with implementing new/expanded declaration capabilities.

3.3.3 Can multiple declarations for a list of products be submitted on one AD-SRT?

Yes. The AD-SRT enables users to fill out one declaration for multiple single products and/or product groups. For instance, a single AD-SRT may contain 10 single product declarations and 20 product group declarations.

3.3.4 Why are some AD-SRT data fields mandatory vs. optional?

According to the IPC-1754 standard, completing only the mandatory data fields is needed to create a complete declaration. The optional fields may be completed on a case-by-case basis, as determined by business considerations (e.g., as required by agreed-to supplier-requester contractual requirements).

3.3.5 Which AD-SRT data fields are considered "mandatory"?

There are two types of mandatory fields in the AD-SRT. The first type is mandatory for all declarations; those are identified with a single asterisk (*). Conditionally mandatory data fields must be filled out only under certain circumstances; those are marked with a double asterisk (**).For example, Supplier Contact information must be filled out for all declarations (mandatory), but Requester Contact

information is only required for Request/Reply mode declarations (conditionally mandatory). See the "General Instructions," located in the AD-SRT Instructions tab for additional information.

3.3.6 What if I cannot complete a mandatory field in the AD-SRT?

If you cannot complete a mandatory field, then your declaration may be rejected by the requester. If some data is not available at the time that you are submitting the form, then "unknown" may be a valid option for some of the mandatory data fields, when allowed. In those cases, or when uncertain how to fill out a field, it is recommended that the requester be contacted for additional guidance.

3.3.7 Do I have to complete the data in the AD-SRT in a certain order?

It is not necessary to input data in a specific order if all mandatory data elements are completed.

3.3.8 How can a specific derogation/exemption applicable to a supplied product be shared with the requester in the AD-SRT?

Utilize Tab 6 "Attachment" to inform the requester of chemical use derogations/exceptions, etc., that may be applicable to the declaration.

3.4 Requester-Supplier Data

3.4.1 What is a "Distribute" mode declaration? What is "Request and Reply" mode declaration?

Distribute mode is used when a supplier desires to provide declarations for their products and publish a declaration in anticipation of receiving specific requests. The supplier then "distributes" their declaration by making it available (e.g., by posting, emailing, etc.). In Request/Reply mode, the supplier responds to a specific request or requirement to provide a declaration and may need to follow requirements agreed-to with its requester.

3.4.2 Who is responsible for filling in the requester data, or is it optional?

The requester must complete both Requester and Supplier Contact data for a Request/Reply mode declaration. The supplier should verify and/or update the Supplier Contact data, if needed. The supplier must complete the Supplier Contact data for Distribute mode declarations.

3.4.3 Is the Document Identification (ID) provided by the requester, or supplier or both?

It is an optional data field for the requester and supplier to manage their declaration data exchange. The document ID data fields are available to be populated based on the business-to-business contractual agreement between the requester and supplier. There are two sets of fields for each company to create and manage their own data.

3.4.4 How and where can I find my company‘s Data Universal Numbering System (DUNS), Commercial and Government Entity (CAGE) or other company identification number?

Please contact your company's organization or person responsible for maintaining the supplier identification codes (i.e., DUNS, CAGE). Typically, those codes may be managed by such organizations as supply chain or purchasing that are likely to have to provide it to external parties (e.g., customers).

3.4.5 Does the requester need to provide both the requester‘s part number and the supplier‘s part number?

This may vary, depending on the circumstances. Generally, it will be advantageous to provide both part numbers, if known, but at a minimum the part number listed on the requester's purchase order should be provided.

3.5 Product Group

3.5.1 Is the Product Group ID field mandatory?

Use of the Product-Group tab is optional, but when the tab is used the Product Group ID data element becomes (conditionally) mandatory. In those cases, the ID is used to map the products of the Product Group to the product statement and/or other product related data in the AD-SRT.

3.5.2 Where do you place Manufacturer Part Number (MPN) in the Product Group tab?

Enter the Manufacturer Part Number in the field titled "Supplier Product Number".

3.6 Product Statement

3.6.1 What are the definitions of Conflict Minerals, Biocides, and Radioactive Materials, as used in the AD-SRT?

Definitions (with references) for Conflict Minerals, Biocides, and Radioactive Materials are contained in the Instruction tab, under the Product-Statement section.

3.7 Substance-in-Product Declarations

3.7.1 Is there a place to report a Bill of Material (BOM) level?

Yes, BOM levels can be reported on the Substance-in-Product tab, by expanding the “BOM level” columns (i.e., selecting the “+” above column A).

3.7.2 Where is multilevel BOM entered in a Substance-in-Product declaration?

A multilevel BOM can be entered in the Substance-in-Product tab (for those declarations using a BOM structure), under the Product Group ID or Product Number, as appropriate.

3.7.3 How are the "Number (#) of Instances" determined?

This "Number of Instances" represents the “quantity” of a subproduct (BOM level (1+n)) in the parent part of a product (BOM level 1). This data field is only used only when a BOM is provided and can precisely locate what subproduct contain specific substances.

3.7.4 Does a declarable substance get reported at the product level (BOM = 1) or at the subproduct level (BOM level (1+n))?

The declarable substance gets reported at the product or subproduct level where the declarable substance is present.

3.7.5 Is the Chemical Abstracts Service (CAS) number, chemical name, European Community (EC) number, and IAEG ID required for each part?

No, only one of the four allowed identifiers are required in the following priority: CAS, EC, IAEG ID, chemical name. See the AD-SRT "Instructions" tab (reference/go to the applicable section) for additional data related to substance identifiers.

3.7.6 Does the name of the product have to be repeated on each line in the case where there are two or more AD-DSL substances to report?

Repeating the name of the product is not necessary if the multiple AD-DSL substances are contained in the same product.

3.7.7 Our manufacturing process is defined as "Build to Print" in which we use components according to the customer's exact specifications. Can we still be required to supply data about materials/substances present in those products in our AD-SRT?

Yes, if the substances are listed on the AD-DSL, then you must provide that data in your declaration. In that case, the customer is the de-facto “supplier” of that data. In some cases, however, the requester may not require the data for a declaration that the requester already possesses.

3.7.8 How do I get help on substance mass estimations?

Contact the requester for guidance on estimating the mass of declarable substances, where needed. Unless otherwise indicated by agreed-to supplier-requester contractual requirements, “Unknown” might be an acceptable response where masses are not known. In addition, IAEG has published a work product titled “IAEG Materials & Substances Declaration Development Document” which provides examples on how to calculate the substances in the product or article.

3.7.9 Can a supplier declare on a subset of AD-DSL substances, e.g.: only those substances with the regulatory criteria “Restricted in Articles (R1)“. If so, where in the AD-SRT can suppliers say they have completed a declaration only for a specific subset of AD-DSL substances??

Suppliers should be declaring against the entire AD-DSL, unless otherwise agreed with their requester. In cases where only a portion of the AD-DSL substances will be used in a declaration, additional data should be provided to indicate a partial list (i.e., using only a portion of the AD-DSL) declaration. On

the Supplier Authorization tab select Statement Type "Custom" and provide specific declaration/authorization text in the "Authorization Statement" field to capture the declaration specifics; for example, “AD-DSL, only substances restricted in Articles (R1) declared”. In a “distribute” mode declaration, the entire AD-DSL should be used; a partial list declaration may not satisfy all customers that may use the declaration.

3.7.10 Cost may be challenging when lab testing is needed to confirm data for product substance content. How can companies justify this added cost?

This decision will vary, depending on the circumstances. The product supplier may decide to analyze the composition of their product (or a portion of their product) to increase the accuracy of their declaration data or may be required to provide analytical data as agreed-to supplier-requester contractual requirements.

3.7.11 How do I declare substances in items purchased from my suppliers, without any data?

Request that suppliers complete a declaration for those items, by using the AD-SRT or some other means, to provide the necessary data to meet your declaration obligations.

3.7.12 Can I use a Safety Data Sheet (SDS) to complete a substance declaration for my products?

Not completely. An SDS may provide valuable data about the substances that could be contained in a supplied article product, but the data in an SDS is generally not sufficient by itself to determine the chemical composition of an article product. Data for product substance composition can usually only be obtained from appropriate declarations (e.g., by using a declaration that is consistent with IPC-1754 data requirements, such as by using the AD-SRT) received from suppliers, as well as derived data from internal product development processes. Many chemical formulations used for product development will undergo changes in composition due to chemical reactions (e.g., polymerization) and/or physical processes (e.g., evaporation) when they cure to a final form in an article product.

3.7.13 If my product contains paint or sealant, can I use the paint or sealant substance percentages in the SDS to estimate the substance composition of my product?

No, using SDS composition data is not accurate for the cured paint or sealant substance compositions, as their ingredients are commonly subject to reactions, evaporation, and other transformations, that commonly affects their composition in article products data.

3.7.14 How can additional data be provided for "Material Use" and "Substance Use" when the data is not available?

Where those data elements are used, answering "Other" is an option when none of the available Material Use and Substance Use Descriptions is appropriate. Explanation of “Other” should be subsequently entered in the comment fields (in Column AK, which is accessed by expanding Column AL).

3.7.15 Does the AD-SRT allow different regulatory substance thresholds for substance reporting, (e.g., the Registration, Evaluation, Authorisation and Restriction of

Chemicals (REACH) >0.1% w/w threshold concentration for "Communication" [Article 33] reporting, versus Restriction of Hazardous Substances (RoHS) >0.1% w/w compliance threshold [for in- scope products] in homogenous materials)?

No, the AD-SRT does not use substance thresholds. However, thresholds may be imposed by agreed-to supplier-requester contractual requirements.

3.7.16 Do we need to declare substances which are trade secrets?

Yes, if they are listed on the AD-DSL. This requirement to provide such data may be modified by agreed-to supplier-requester contractual requirements and might be covered by applicable Non-Disclosure Agreements (NDA).

3.7.17 Are all the substances on the AD-DSL required to be declared?

If AD-DSL substances exist in the product, then it is mandatory to declare each substance(s), unless the requirement is modified (e.g., by agreed-to supplier-requester contractual requirements).

3.7.18 Are substances in base alloys required to be declared in the AD-SRT?

If the substances in the base alloy are included in the AD-DSL then they must be declared, unless additional agreements modify the requirement. Declarations covering a Full Substances Declaration (FSD, sometimes called a Full Material Declaration, or FMD) require all substances in the product be declared, including those contained in base alloys.

3.7.19 What does it mean if I cannot find a CAS number in the substance list for a substance I intend to declare? Can I manually add additional CAS numbers?

If a CAS number is not listed, then the substance is not listed in the AD-DSL used in the declaration. When submitting data on additional substances not on the AD-DSL (e.g., when submitting an FSD), additional CAS numbers and associated data can be manually added in the AD-SRT. However, entering this data in one field will not automatically populate any additional fields, such as is the case for listing substances that are on the AD-DSL.

3.8 Substance-in-Process

3.8.1 Are substance-in-process declarations mandatory?

Substance-in-process declarations ("process declarations") are not mandatory in IPC-1754 declaration but may be required by agreed-to contractual requirements.

3.9 Attachments

3.9.1 Can you attach files (e.g., supporting documentation) to an AD-SRT?

Yes, the AD-SRT tool can attach multiple files in Tab 6, ("Attachments"), including text and ZIP compressed files.

3.10 Supplier-Acceptance

3.10.1 What is the intention of the Acceptance Statement in the Supplier-Acceptance tab?

The intention is to have an explicit record confirming that the data provided is officially provided by the supplier, and that the declaration data is complete.

3.11 Additional Information

3.11.1 What other supporting lists exist within the AD-SRT?

Materials and Substances Declaration Supporting lists include the AD industry Query List (AD-QL) and lists for optional material and substance function data in AD industry declarations – a Material Function Use Descriptor List (AD-MFUDL) and a Substance Function Use Descriptor List (AD-SFUDL).

4 Declaration Development Support Resources

4.1 Introduction

The new Declaration Development Support document is intended to support increased capability and quality in the development of materials and substances declarations in the AD industry and its global supply chain. It provides useful information and examples on calculating substance content in hardware products, discusses substance losses associated with volatile material evaporation, and includes example part geometry calculations and lists of common AD reportable substances and industry surface finish specifications for reference.

The "Declaration Support" team within WG1 of the IAEG is conducting important and impactful work towards developing supplier support documents and guidelines for providing substance declarations to requesting companies and Original Equipment Manufacturers (OEMs). This team's "Materials & Substances Declaration Development" document provides basic information, explanation, and illustrative examples on calculation of hazardous substance mass content in delivered products. This is a critically important effort as many suppliers currently struggle to understand the requirements and nuances of reporting material/substance content in their products and thus are unable to accurately relay this information to the end users in the AD industry. The more that industry collaborative groups such as IAEG can educate and aid suppliers in this effort, the higher the quantity and quality of regulatory compliance declarations that will be received.

The "Materials & Substances Declaration Development" document provides insight into the challenging and poorly understood subject areas of reactive and transformational materials. These transformational materials have a different final composition of substances after incorporation into a product than the material(s) initially had prior to processing and application to the product (e.g., a two-component paint system). The transformation takes place when the material is mixed or processed, and undergoes evaporation, drying, chemical reaction or curing. The document also provides useful tips for substance identification and mass calculation, citing "best practice" and common knowledge within the AD industry. The team has also included a list of common reportable substances encountered in AD applications as well as standard military and industry surface finish/treatment specifications for reference. Finally, the document works through several examples of typical substance mass calculations, while providing a list of helpful references, websites, and tools that suppliers can utilize to create more accurate and meaningful substance declarations

APPENDIX A

List of Acronyms

Abbreviation	Definition
AD	Aerospace and Defense
AD-DSL	Aerospace and Defense Declarable Substances List
AD-MFUDL	Aerospace and Defense industry Material Function Use Descriptor List
AD-QL	AD industry Query List
AD-SFUDL	Aerospace and Defense industry Substance Function Use Descriptor List
AD-SRT	Aerospace and Defense Substance Reporting Tool
AD-UDL	AD-Use Descriptor Lists
AIA	Aerospace Industries Association
ASD	Aerospace, Security and Defence Industries Association of Europe
B2B	Business to business (B2B) *agreements*
BOM	Bill of Material
BPA	Bisphenol A
CAD	Computer Aided Design
CAGE	Commercial and Government Entity
CAS No.	Chemical Abstracts Service Number - A unique numeric identifier for a chemical substance.
CASRN	CAS Registry Number (see CAS No.)
CCC	Chromate conversion coating
Cd	cadmium
CWG	Compliance WG
D1	Declarable in articles - At least one regulation, in one or more regions, requires the disclosure of the substance when present in AD articles.
D4	octamethylcyclotetrasiloxane
DBP	di-n-butyl phthalate
DEF-STAN	Defense Standard
DEHP	di-(2-ethylhexyl) phthalate
DMAC	N,N-Dimethylacetamide
DMF	dimethyl formamide
DSL	Declarable Substances List
DUNS	Data Universal Numbering System
EC No.	European Community Number - A unique seven-digit identifier assigned to a chemical substance within the European Union, used to identify it for regulatory purposes within the REACH system.
ECHA	European Chemicals Agency
EGDME	ethylene glycol dimethyl ether
EU	European Union
FAQ	Frequently Asked Questions
FMD	Full Material Declaration
FSD	Full Substances Declaration
GB	Great Britain (United Kingdom, excluding Northern Ireland)
HMTL	Hazardous Materials Target List
I	The substance is not currently identified as meeting any criteria for R1, R2 or D1; however it may be otherwise regulated in one or more regions. The substance is of interest due to uses in AD applications and may have been identified as a candidate for future regulatory activity in at least one region.
IAEG	International Aerospace Environmental Group
IAEG-ID	A unique identifier for each substance on WG1's work products. The identifier remains fixed to an individual substance once it is assigned, ensuring consistency and trackability.
IAEG-PL	IAEG Per- and Polyfluorinated Alkyl Substances List
ID	*Document* Identification
ID	inside diameter
IPC	formerly known as the Institute of Printed Circuits, now goes by IPC or IPC International
kg	kilogram
LC	Low Chrome
LED	light-emitting diode

Abbreviation	Definition
MIL-DTL	Military Detail (specification)
MP	Maintenance Procedure
MPN	Manufacturer Part Number
NAS	National Aerospace Standard
NDA	Non- Disclosure Agreement
NMP	N-methylpyrrolidone
OD	outside diameter
OEM	Original Equipment Manufacturer
Pb	lead
PBT	Persistent, bioaccumulative, and toxic
PCB	Printed Circuit Board *(not to be confused with Polychlorinated Biphenyls)*
PFAS	Per- and Polyfluorinated Alkyl Substances
PVC	polyvinyl chloride
R1	Restricted in articles - At least one regulation, in one or more regions, restricts (totally or partially) the presence of the substance in AD articles and/or requires an authorization/permit in order to continue to use the substance in articles
R2	Restricted in substances and mixtures - At least one regulation, in one or more regions, restricts (totally or partially) the use of the substance (either alone or in mixtures) and/or requires an authorization/permit in order to continue to use the substance.
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RoHS	Restriction of Hazardous Substances
SCIP	Substances of Concern In Products
SDS	Safety Data Sheet
SI	International System of Units
SVHC	Substance of Very High Concern
TSCA	Toxic Substances Control Act
UK	United Kingdom of Great Britain and Northern Ireland
US	United States
US EPA	United States Environmental Protection Agency
vPvB	Very Persistent and Very Bioaccumulative
WG	Working Group
WG1	Working Group 1
XML	Extensible Markup Language
XSD	XML Schema Definition

Note:

This list is for acronyms only; does not include measurements or chemical formulas