

Aerospace and Defence Substance Reporting Tool

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The International Aerospace Environmental Group (IAEG) has developed the Aerospace and Defence Substance Reporting Tool (AD-SRT) to support materials and substances declarations for the Aerospace & Defence (AD) industry and its global supply chain. The AD-SRT supports the use of the data exchange standard IPC-1754 *Materials and Substances Declaration for the Aerospace and Defense, and Other Industries*. The AD-SRT is intended to be used with the Aerospace and Defence Declarable Substances List (AD-DSL), but allows the inclusion of additional substances beyond the AD-DSL. However, use for substance declarations without using a version of the AD-DSL is inconsistent with the terms of use included below.

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AD-SRT and IPC-1754

The AD-SRT is compatible with the IPC-1754 data exchange standard and supports materials and substances reporting (“declaration”) within the AD industry and its supply chain.

The AD-SRT is a formatted Microsoft Excel spreadsheet with embedded macros that automates data field population, and conducts simple data field checks. The AD-SRT is also provided in a “macro-free” form for use in environments where the use of macros is not acceptable (e.g., due to security-related restrictions).

The AD-SRT supports, but does not include the functionality to convert data from the AD-SRT Excel spreadsheet to an Extensible Markup Language (XML) file compliant with the IPC-1754 standard. Please refer to software providers indicating that they support that functionality, such as those listed on the IPC-1752A standard website: <http://www.ipc.org/ContentPage.aspx?pageid=Materials-Declaration#1752a>, for AD-SRT to IPC-1754 XML data converters.

Release Note Content

1	AD-SRT Change History.....	2
2	AD-SRT Support & Maintenance	3
3	AD-SRT Forms	3
4	AD-SRT Data Configuration.....	4
4.1	AD-DSL, Declarable Substance List	5
4.2	AD-QL, Query List	5
4.3	AD-UDL, Use Descriptor Lists.....	5

1 AD-SRT Change History

In September 2018, IAEG[®] published Version 1.0 of the AD-SRT Excel base tool. The current version (1.1) of the AD-SRT version contains the following subsequent bug fixes, modifications and additions:

- The substances list contained in the AD-SRT was updated to the AD-DSL version 3.0
- Several issues were fixed in the AD-SRT worksheet tabs, including improving the worksheet and macros protections
- An additional form of the AD-SRT v3 was developed, that does not include embedded macros.

The table below provides a detailed history of all actions and changes made in response to each of the numbered Maintenance Requests (MR) addressed in this version:

Location / Tabs	Modifications	IAEG Maintenance Request #
Worksheet	Update and strengthen tabs protection	MR161
	Update and strengthen worksheet protection	MR172
Macros	Protection of Excel macros with password	MR166
DSL	Added the AD-DSL v3. Also, as DSL changed "IAEG Priority Group" to "Regulatory Criteria", a few adjustments were made in titles of tabs #4 and #5	MR153
-History-	Update history	
Overview	Change 1.0.1c to 1.1a due to AD-DSL v3.0 which is not just fixing bug (change version, 3 digits in versioning) but minor version (2 digits)	MR153
	Update AD-DSL Version, Date, Identity for AD-DSL 3.0	MR153
	Protect "Overview" tab (seems not included in macro managing protection)	
DSL	Update AD-DSL Version, Date, Identity for AD-DSL 3.1	MR153
	Develop protection for cells in the DSL (A1:H1360) for MR# 153	MR157
Substance-in-Product	Change color of cell "Comment" (O3) from grey to yellow, like other Substance Data fields, to reflect that this data field exists in IPC-1754	MR162
	Update the list of Substance Names with variable Substance Name_30	MR153
Substance-in-Process	Change color of cell "Comment" (V3) from grey to yellow, like other Substance Data fields, to reflect that this data field exists in IPC-1755	MR162
	Update list of Substance Names with variable Substance Name_30	MR153
General	Provide one version with macros (.XLSM) and another one without macros (.XLSX).	MR171
Overview	Unprotect support email (cell HS) so that the user company can replace the IAEG support email address with its own email address; change color of cell to light green (H5-I5)	MR174
7. Supplier-Acceptance	Add comment in text for Data Check: "No data check is available in version without macros".	MR171
DSL	Prohibit any addition or removal of substances from AD-DSL list in DSL tab (lock all columns A-H, unlock other columns)	MR157

Instructions	Remove protection for tabs with +/- to expand in the form of the AD-SRT without macros	MR176
2.Product-Group		
3.Product-Statement		
4.Substance-in-Product		
5.Substance-in-Process		
Overview	In AD-SRT XLSM "without macro" form, insert reference to "without macros"	
1.Requester-Supplier	Unprotect declaration tabs and fully expand several columns or rows, then protect these tabs to fix the column width	
6.Attachment		
7.Supplier-Acceptance		
DSL		
DSL	Add 3 missing substances from draft AD-DSL 3.0 dated 2019-January-14	MR177
DSL	Move column "IAEG Regulatory Criteria" to before "First added date"	MR178

2 AD-SRT Support & Maintenance

IAEG[®] owns and maintains the AD-SRT. It is available on the IAEG website (www.iaeg.com) on the "AD-SRT" webpage: <http://www.iaeg.com/chemicalrpt/adsrt>.

Please use this contact email for questions or improvement suggestions related to the AD-SRT or its supporting information: substancereporting.support@iaeg.com.

3 AD-SRT Forms

IAEG currently provides two forms of the AD-SRT.

- AD-SRT form with Excel macros (extension ".xlsm") that are used for data entry facilitating and data checks
- AD-SRT form without Excel macros (extension ".xlsx") for companies that do not allow the use of Excel macros.

Both forms offer the capability of collecting data compatible with the IPC-1754 standard.

Notes:

Data check capabilities may also be offered in third-party data management tools that work on top of the AD-SRT as Excel "add-ins".

3.1 Information

As a work-around in the AD-SRT form without macros, most of the tabs containing collapse/expand capability have been unprotected to enable the use of that capability; for instance in the "Instructions" tab:

1	2	A	B
1		<u>Aerospace and Defence - Substances Reporting Tool (AD-SRT)</u>	
2		Version: 1.1 (without macro)	
3		<u>Instructions</u>	
4		2019-02-28	
5		Introduction	
21		General Instructions	
22		The AD-SRT Excel spreadsheet with consists of few tabs with the primary objective to gather for declarable substance information collection. The tabs color coded as green, blue, or brown have fields for data entry. In addition, there are white color tabs containing reference information which have no fields for data entry. One spreadsheet can be used for declarations of multiple single products or product groups.	

However, three tabs are protected: “1.Requester-Supplier”, “6.Attachment” and “7.Supplier-Acceptance”; in those tabs, the column and row sizes cannot be reduced.

4 AD-SRT Data Configuration

The AD-SRT Tool includes the following data lists, which are applicable to materials and substances AD industry declarations; all are IAEG products:

- The AD-Declarable Substance List (AD-DSL)
- The AD-Query List (AD-QL)
- Two AD Use Descriptor Lists (AD-UDLs)

The configuration of the AD-SRT version 1.1 is similar to the one for version 1.0, as follows:

Components	Format	Version	Description
AD-SRT	Excel	1.0	Spreadsheet with macros
AD-DSL	XML	3.0	For IPC-1754 declaration classes E, F and G
AD-QL	XML	1.0	Query List including queries for Product Statement for class E
MF-UDL	XML	1.0	Use Descriptor List for Material Function (MF)
SF-UDL	XML	1.0	Use Descriptor List for Substance Function (SF)

As required by the IPC-1754 standard, each data list is identified by:

- An authority and a unique identity (ID)
- A revision number and a revision date.

Here are the identifications of the AD-DSL and AD-QL lists that appear in AD-SRT tab #1:

Aerospace and Defence Declarable Substances List [AD-DSL]

Version*	3.0
Date	2019-01-24
Authority*	IAEG
Identity*	ADDSL-0119

Aerospace and Defence Query List [AD-QL]

Version*	1.0
Date	2018-03-02
Authority*	IAEG
Identity*	ADQL-0318

4.1 AD-DSL, Declarable Substance List

The AD-DSL is updated at least every year by IAEG, and is available on the IAEG webpage: <http://www.iaeg.com/chemicalrpt/addsl>

4.2 AD-QL, Query List

IAEG has developed the AD-QL as the AD industry IPC-1754 Product Statement, with 5 AD-specific queries*. As required by IPC-1754, the AD-QL contains the following elements:

- An authority and a unique identity (ID), and
- A statement.

Authority	Identity	Statement
IAEG	Q1	Product contains substance(s) on the AD-DSL
IAEG	Q2	Product process(es) requires the use of substance(s) on the AD-DSL
IAEG	Q3	Product contains radioactive material(s)
IAEG	Q4	Product contains biocide(s)
IAEG	Q5	Product contains conflict mineral(s)

Note that the queries are supposed to be answered in the context of a declaration with the possible answers: “Yes”, “No” or “Unknown”, and should be translated by solution providers to “true”, “false”, “unknown” (respectively) to comply with the IPC-1754 standard.

4.3 AD-UDL, Use Descriptor Lists

According the IPC-1754 Standard, Use Descriptions for Process, Materials and Substances may be:

- Either a free text field, or
- A value selected in a predefined **Use Descriptor List (UDL)**.

IAEG has produced two AD industry UDLs that are contained in the AD-SRT in two separate tables, in the UDL tab:

Authority	Reference Document	Use Descriptor List (UDL)
IAEG	Present release note	AD Material Functions (MF)
		AD Substance Functions (SF)

Those AD-UDLs may be optionally used in four separate data fields:

Tab#	Column: Data Field	UDL
4	T: Material Use Description	AD Material Function (MF)
4	AE: Substance Use Description	AD Substance Function (SF)
5	S: Substance Use Description	AD Substance Function (SF)
5	L: Material Use Description	AD Material Function (MF)

The current UDLs are provided in their entirety in the next sections.

4.3.1 IAEG UDL, Material Function (MF)

Authority	IAEG	Use Descriptor List - Material Function (MF) Version 1.0; 2018, June 12 Authority: IAEG [®] Identity: ADMFUDL-0618
Identity	ADMFUDL-0618	
Version	1.0	
Date	2018-06-12	

IAEG ID Number	Material Use Function	Explanation
MF01	Abrasion or polishing	Removes surface materials to clean and/or make smooth
MF02	Adhesive	Joins two or more objects or materials together by chemical bond
MF03	Adsorbent or absorbent	Holds particles, liquids or gases by taking in or holding on surfaces
MF04	Fragrance or odor suppressant	Chemically modifies air or materials to enhance or suppress odor

IAEG ID Number	Material Use Function	Explanation
MF05	Anti-freeze or de-icing	Prevents, or removes frozen water from surfaces
MF06	Anti-slip surfacing	Increases friction between two surfaces
MF07	Base metal or alloy	Metallic structural material
MF08	Biocide or pest management	Pesticide or herbicide
MF09	Bleaching or decolorizing	Diminishes or removes color
MF10	Binder	Produces or promotes cohesion in loosely assembled substances
MF11	Catalyst or accelerant	Accelerates chemical reactions and does not react
MF12	Chelator	Binds and sequesters metal ions
MF13	Chemical extraction	Removes constituents of one mixture into another
MF14	Coating removal	Removes paints, etc. from surfaces
MF15	Coloring agent, colorant, pigment	Adds color to porous materials
MF16	Desiccant	Removes moisture
MF17	Diagnostic or test	Identifies and examines for flaws - cracks, weaknesses, etc.
MF18	Dye or colorant	Imparts color to objects or materials
MF19	Electrolyte	Contains ions and that can be decomposed by electrolysis, e.g., that present in a battery.



IAEG ID Number	Material Use Function	Explanation
MF20	Explosive or ammunition	Materials that can be made to explode, or provide weapon propulsion
MF21	Filler, insulating or potting	Thermal, acoustical, electrical or radiation attenuation
MF22	Filler, putty, caulking or plaster	Used to fill voids in objects
MF23	Fire retardant, suppressant or extinguisher	Prevents, suppresses or extinguishes fire
MF24	Fuel or propellant	Provides energy for power or motion by chemical consumption
MF25	Glass or ceramic	Hard, brittle, non-crystalline material
MF26	Heat transfer	Transfers heat, providing heating or cooling through a media
MF27	Ink or toner	Transfers image to, or prints on a surface
MF28	Leather, paper, board or fabric treatment	Enhances or protects listed materials
MF29	Lubricants and greases	Reduces friction to enhance movement and/or reduce wear
MF30	Material conditioning, plasticizer or hardener	Changes plasticity, ductility and/or brittleness properties of a non-metallic material
MF31	Metal-working or metal cutting	Provides cooling and/or particle control during metal cutting operations
MF32	Non-metal structural (non-polymeric)	Non-metallic, non-polymeric (plastic) structural materials
MF33	Photo-chemical or resist	Affects electromagnetic modification of substrates to effect or prevent change
MF34	Pest management	Pesticide, herbicide, fungicide, repellent or attractant

IAEG ID Number	Material Use Function	Explanation
MF35	Plating or metallic coating deposition	Coats a thin metal layer on surfaces
MF36	Polish or wax	Materials used to clean and smooth surfaces
MF37	Plastic or resin	Organic polymeric materials
MF38	Preservative	Prevents degradation caused by biological or chemical action
MF39	Pressure transfer, propellant	Transfers or imparts pressure by gas or fluid
MF40	Coating	Primer, coating, paint, or sealant
MF41	Processing aid - pH-regulator, flocculation, precipitation, or neutralization	Modifies the content of liquid mixtures
MF42	Semiconductor	Component of various kinds of electronic circuit elements
MF43	Shielding or blanketing	Protects surfaces from contamination by covering
MF44	Surface treatment	Modifies the chemical composition of metal surfaces
MF45	Textile dyeing or impregnating	Changes the chemical content of fabric
MF46	Solvent or thinner	Dissolves solids or liquids
MF47	Washing, degreasing or other cleaning	Cleaning compounds
MF48	Water proofing	Imparts water resistance to materials
MF49	Welding, soldering, brazing or flux	Joins two or more metal surfaces

IAEG ID Number	Material Use Function	Explanation
MF50	Other	Material functions not fitting into other functions

4.3.2 IAEG UDL, Substance Function (SF)

Authority	IAEG	Use Descriptor List - Substance Function (SF) Version 1.0; 2018, June 12 Authority: IAEG [®] Identity: ADSFUDL-0618
Identity	ADSFUDL-0618	
Version	1.0	
Date	2018-06-12	

IAEG ID Number	Substance Use Function	Explanation
SF01	Abrasive	Grinding or friction agent
SF02	Adhesion promoter	Promotes adhesion of coatings, inks, or adhesives to a substrate of interest
SF03	Adsorbent/absorbent	Adheres materials to a surface
SF04	Alloy constituent	Metal alloy constituent
SF05	Antiadhesive	Retards or delays adhesion between two materials
SF06	Antiscaling	Prevents lime formation
SF07	Antisiccative	Promotes absorption of moisture
SF08	Antistat	Controls static electricity buildup or discharge
SF09	Binder	Holds or draws other materials together to form a cohesive whole mechanically, chemically, by adhesion or cohesion
SF10	Catalyst	Speeds up a chemical reaction, but is not consumed by the reaction
SF11	Chelating agent	Bonding of ions and molecules to metal ions
SF12	Conditioner	Improves quality/performance of a material

IAEG ID Number	Substance Use Function	Explanation
SF13	Diluent	Non-reactive dilution agent, including solvents
SF14	Electrolyte	Dissociates into ions in solution and acquires the capacity to conduct electricity
SF15	Emulsifier	Stabilizes oil-and-water emulsions
SF16	Flame retardant/smoke suppressant	Prevents, or suppresses the initiation, propagation of combustion and/or the generation of combustion by-products (heat or smoke)
SF17	Fluid property modulator	Inhibits or restricts foaming, promotes solids coagulation or floatation, disperses or emulsifies constituents, adjusts viscosity, etc.
SF18	Fluorescent	Re-emits light upon light excitation
SF19	Fragrance	Imparts fragrance
SF20	Glidant	Increases flowability of powders
SF21	Gloss agent	Imparts a gloss finish in cured coatings
SF22	Heat stabilizer	Protects polymers against degradation resulting from heat
SF23	Heat transfer agent	Transfers heat energy through a media
SF24	Humectant	Retains or preserves moisture content
SF25	Inert/filler	Non-reactive substance that only imparts bulk or density
SF26	Lubricant	Reduces friction between mechanical parts
SF27	Matting agent	Imparts a matte finish in cured coatings

IAEG ID Number	Substance Use Function	Explanation
SF28	Oxidizer	Oxidizes other substances
SF29	Pesticide, herbicide, fungicide, antimicrobial, repellent or attractant	Prevents access by, retards or kills unwanted insects, fungi, microbes
SF30	pH modifier/ buffer	Modifies material pH
SF31	Pigment/colorant	Imparts shading, color or tone
SF32	Plasticizer	Produces or promotes plasticity and flexibility and to reduce brittleness in synthetic resins
SF33	Propellant	Pressurizes materials to promote or control release
SF34	Reactant (monomeric)	Substance reactant that does forms polymeric units on reacting
SF35	Reactant (non-monomeric)	Substance reactant that does not form polymeric units
SF36	Stabilizer	Substance that is used to prevent non-thermal degradation
SF37	Surfactant	Lowers the surface tension (or interfacial tension) between two liquids, a gas and a liquid, or between a liquid and a solid
SF38	Tackifier	Increases the stickiness of an adhesive or contact agent
SF39	Texturizer	Imparts material texture
SF40	Thixotrope	Substance that lowers viscosity of a mixture when the mixture is shaken, agitated, sheared or otherwise stressed.
SF41	UV stabilizer	Inhibits degradation by UV radiation
SF42	Warping or shrinking preventor	Inhibits or prevents material deformation, warping or shrinking

IAEG ID Number	Substance Use Function	Explanation
SF43	Other	Substance functions not fitting into other functions