Electrical and Electronics Industry Material Declaration Standardization Activities and IEC 62474

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IEC 62474

Background on TC111

› TC111 Environmental standardization for electrical and electronic products and systems
   › Chairman: Mr. Yoshiaki Ichikawa
   › Secretary: Mr. Andrea Legnani (Italy)

› Standardization work continues in areas such as:
   › sampling and testing for RoHS substances
   › material declarations
   › information on recyclability

› The reach of TC111 is global
   › # of P-Member Countries = 28
   › Covering all continents except Antarctica
TC111 WG1 Background

Main Drivers to develop IEC material declaration standard:

- Organizations need material data in order to assess compliance and improve environmental performance
- Too many different company-specific requests with different details and different data exchange tools
- Several different industry regional or product category material declaration standards; e.g.,
  - JIG (EEE; US/EU/Japan)
  - IMDS (Automotive, Global)
  - JGPSSI (EEE, Japan)
  - IPC (EEE, US)

Established 21. April 2006
- Unanimous 17-0 vote of P-Member Countries
- Experts from 15 countries and 5 continents
  - Experts in process, chemicals/legislation and software areas
- Broad participation by National Committees
  - Comments from 15 countries with experts, also from 6 other countries and from other technical committees
WG1 Problems to Solve with IEC 62474

- IEC built on existing activities within EEE industry to create global standardized approach
  - SOLUTION: IEC 62474

- Too many different levels of detail in chemical substances/substance groups requested of suppliers
  - SOLUTION: IEC DATABASE 62474 – Declarable Substance List

- Need data to be able to perform environmentally conscious design
  - SOLUTION: IEC DATABASE 62474 – Material Classes

- Need to be able to exchange data in automated way: data exchange model (data elements, relationships and multiplicities)
  - SOLUTION: IEC DATABASE 62474 WITH DEVELOPERS’ TABLE AND SCHEMA

WG1 Strategy

- Create a standard that explains process requirements and criteria for a referenced material declaration database

- Standard will leverage IEC “database” process that enables annual updates to reflect changes

- Standard strategy
  - Specify minimum requirements, as well as additional requirements when an organization goes beyond the base requirements. This specifies base requirements while allowing organizations flexibility to do more.
  - Intent: After issue of IEC 62474, JIG may sunset.
**WG1 Strategy**

- **Database**
  - IEC “Database” to ensure consistent with IEC criteria
  - Includes substances, substance groups and material classes to report (mandatory or optional); also specifications for data transfer/exchange.
  - **Does not include** actual company data;
  - **Not a Tool** – only the specifications
  - Annual update using Validation Team appointed per NC.

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**Key Parts of IEC 62474**

- **Requirements for Material Declaration**
  - Specifies rules
  
  - **Base requirements:**
    - Reporting of substances and substance groups with mandatory reporting requirement assigned to product
    - Requires product parts to be declared if reporting threshold refers to part and is exceeded
  
  - **Additional requirements:**
    - Applies rules for reporting of additional information
    - Reporting of materials, product parts, substances in DB with “optional” designation; additional substances
    - Reporting of material classes assigned to product
Key Parts of IEC 62474

- Criteria for declarable Substances to be in or out of Database
  - Criteria 1: Currently Regulated (specific effective date)
  - Criteria 2: For Assessment (current regulations with no specific effective date)
  - Criteria 3: For information only – recognized industry-wide common market requirement

- Criteria for developers’ table and schema
  - If an industry-wide purpose to meet common stakeholder requirements, as long as no change to standard needed; or
  - To solve critical problems with data transfer

How was 1st version of Database created?

- Applied IEC criteria
  - Started with JIG and IMDS (JIG was most transferable)
  - IEC standard focuses declarations on substances that are applicable to EEE industry
  - Added other substances per IEC 62474 criteria

- Annual Update Process Established
  - XML format
WG1 Timeline

Anticipated WG1 Timeline

- Agree to responses to CDV comments: 31. March 2011
- Circulate FDIS: July 2011
- FDIS Vote Complete: Sept 2011
- Publish IEC62474: Jan 2012

Note: The IEC 62474 database is approved, and maintenance has started.

Industry Examples of Working Material Declaration Processes - Philips

- Uses a system for suppliers to provide information on declarable substances
- Adoption of standard will occur as individual companies and 3rd party software tool suppliers incorporate IEC 62474 defined criteria and IEC database 62474 into their systems or solutions
- Philips uses a tool called “BOMcheck” (This is example, there are other tools used by other companies)
  - Data resides on service provider network
  - Supply chain membership tool where members agree to provide data and abide by standard
  - Suppliers can reach multiple customers
  - Service updates as lists change
  - BOMcheck to adopt IEC 62474 upon release
**Industry Examples of Working Material Declaration Processes – Siemens Healthcare**

- Process for restricted/declarable substances and material classes
- Maintain data within internal business IT system (SAP)

**Current declaration process at Siemens Healthcare**

1. **Part of standard supplier tool**
   - **First Time assessment questions**
     - If declarable substances
       - Use Network Service Tool (BOMcheck) (automated request)
         - Company submits through network service
         - Pull data, transfer to SAP
     - If no declarable substances
       - Send part-specific Request worksheet (manual update process)
       - Enter into SAP for supplier
       - Receive worksheet, import to SAP

TC111 WG1 IEC 62474
Industry Examples of Working Material Declaration Processes – Siemens Healthcare

- “ProMED” Tool
  - Identifies material classes contained in products
  - Rolled up for product analysis, used for Life Cycle Assessments

Summary

- Electronics Industry has been very active in material declarations

- There are broad internationally agreed horizontal standard-based systems being adopted by EEE industry.
  - Focuses on information relevant to EEE products
  - Designed to work within complex EEE global supply chain
  - Global to fit the global marketplace

- Regional or national solutions do not support a global economy - please support our International Standard
  - Where regulation is needed, encourage governments to reference this standard
  - Encourage broad utilization within the EEE supply chain
Thank you for your attention. Any questions?

Backup Information
Key Parts of IEC 62474

- Substances, Substance Groups and Material Classes
  - Follow Global Harmonized Standard (GHS)
  - Substance is individual, substance groups are multiple categories
  - Material classes: “defined classification of materials that are established in referenced IEC DB-62474 for purposes of inventorying aspects of a product, such that no two classes contain the same materials”

Key Parts of IEC 62474

- Conceptual Diagram for Base Requirements
Key Parts of IEC 62474

- Conceptual Diagram for Additional Requirements

- Process to update database
  - Change Requests submitted
  - If sufficient information and determined in scope, evaluated by Validation Team (VT)
  - VT represents National Committees
  - At least annual update