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# Electrical and Electronics Industry Material Declaration Standardization Activities and IEC 62474

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Siemens Healthcare

**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

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## 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)

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## TC111 WG1 Background

- ▶ 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

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## 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**

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## 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.

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## 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

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## 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

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## Key Parts of IEC 62474

- ▶ How was 1<sup>st</sup> 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

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## 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.

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## 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 3<sup>rd</sup> 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

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## Industry Examples of Working Material Declaration Processes - Siemens Healthcare

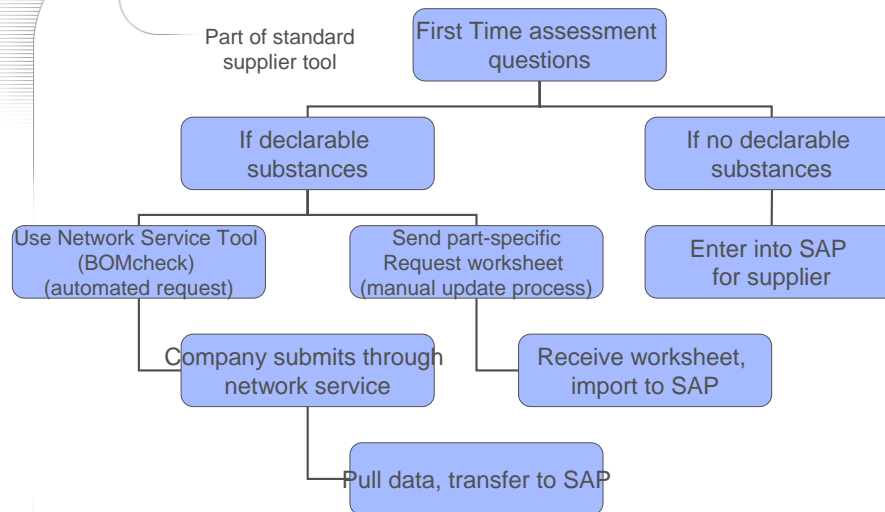
- ▶ Process for restricted/declarable substances and material classes
- ▶ Maintain data within internal business IT system (SAP)

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## Current declaration process at Siemens Healthcare



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## 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?

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Backup Information

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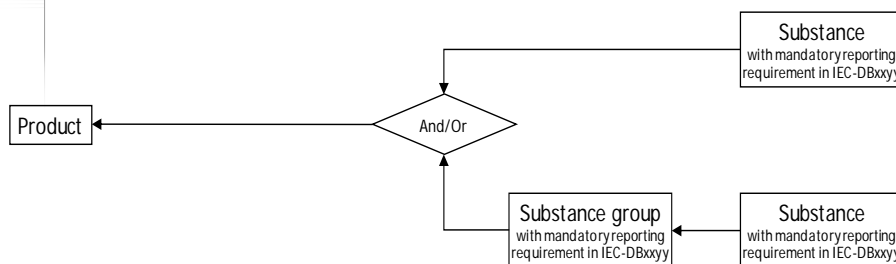
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## Key Parts of IEC 62474

- ▶ 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”

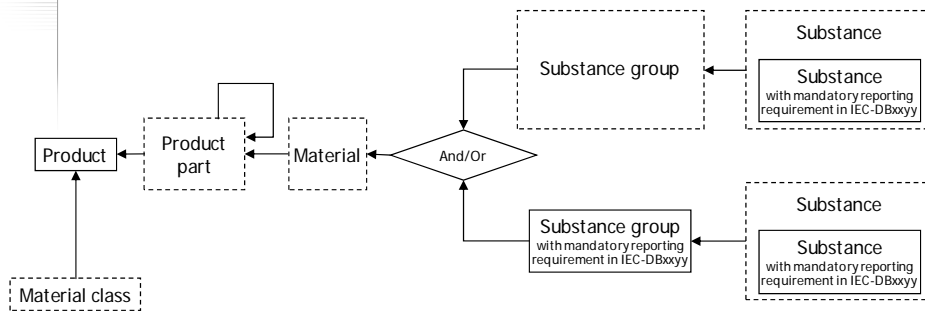
## Key Parts of IEC 62474

- ▶ Conceptual Diagram for Base Requirements



## Key Parts of IEC 62474

### ► Conceptual Diagram for Additional Requirements



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## Key Parts of IEC 62474

- Process to update database
  - Standard ISO/IEC rules – “Normal Database Procedure”
  - Change Requests submitted
  - If sufficient information and determined in scope, evaluated by Validation Team (VT)
  - VT represents National Committees
  - At least annual update

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