

# A Common Solution for Materials Declaration



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## The new IPC-1750 series standardizes the collection, tracking and disclosing of material content.

The European Union's RoHS Directive is driving electronics manufacturers to manage and exchange product content information across the supply chain. While material declarations are not considered sufficient on their own to ensure RoHS compliance, they provide a key building block for an overall compliance model. The most efficient approach to exchanging material composition data is to standardize processes and formats, which is what the new IPC-1750 series of standards does.



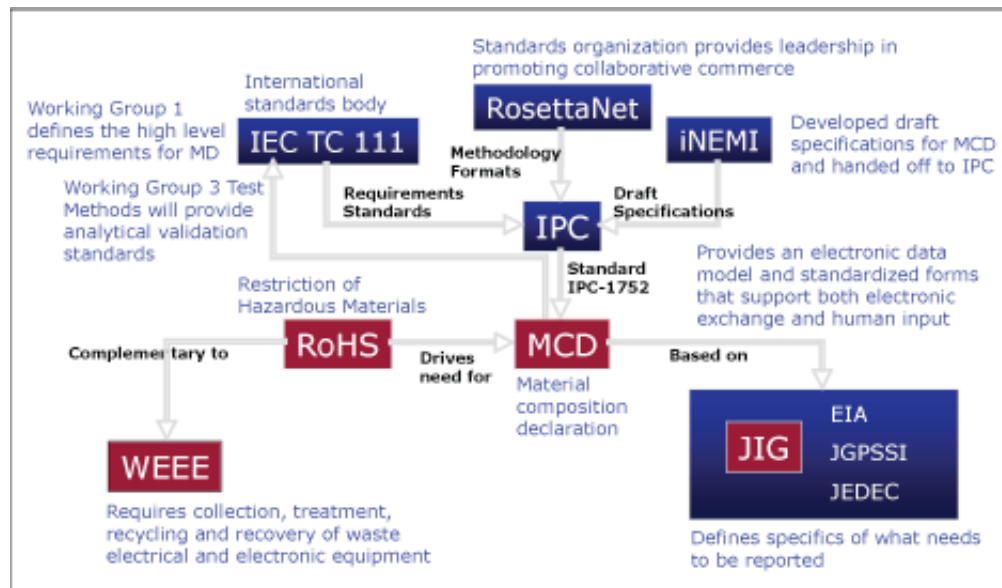
Development of the IPC-1750 series began with two iNEMI projects that brought together users and solution providers to shape standards-based processes for communicating materials content data. The specifications they developed were handed off to the IPC Declaration Process Management subcommittee for development and standardization. More than 50 of the largest OEMs, EMS providers and suppliers helped define the business requirements and develop specifications for these standards.

Enter IPC-1752. IPC-1752, "Materials Declaration Management," provides a common data model and standardized forms to simplify the way industry collects, tracks and discloses material content information. It supports small- and mid-sized companies, where the interaction is more likely to be manual, as well as multinationals, where IT budgets can support automation and direct B2B transactions.

IPC-1752 was released in February, with a number of major OEMs, EMS providers and component manufacturers declaring their support and intentions for adoption. Draft versions of the standard have been wrung through multiple pilots, with some companies actually using it in production for more than eight months.

Currently the RoHS Directive does not require producers or suppliers to provide material composition declarations (MCDs). However, it is generally recognized that MCDs are needed to manage compliance risk, support supplier liability claims and perform product level compliance analysis. Further, there are references made to "technical documentation" and material declarations in the RoHS Guidance documents published by U.K. Department of Trade and Industry. These documents indicate that producers are expected to collect and maintain documentation that will support that they have conducted "due diligence" in ensuring that their suppliers are providing compliant parts.

**Figure 1** provides a framework of related directives and standards. IPC-1752 directly references work done by EIA, JGPSSI and JEDEC in the Joint Industry Guide (JIG) standard, which defines the reportable substances and threshold levels. IPC-1752 also integrates work done on electronic forms and exchange standards by RosettaNet. The IPC standard's XML schema is aligned with RosettaNet's 2A13 and 2A15 PIPs.



**FIGURE 1:** Regulatory and standards framework.

IPC-1752, along with the International Electrotechnical Commission's Publicly Available Specification document 61906 (which provides high-level requirements for material declarations) and JIG 101, form the basis for a material declaration standard that has been proposed to the IEC committee responsible for standards supporting environmental stewardship of electronics products. While other formats for material declarations are being used or developed (examples include Japan's JGPSSI spreadsheet and the automotive industry's Compliance Connect spreadsheet), none has the international support and momentum that IPC-1752 is now receiving.

### Flavors of IPC-1752

IPC-1752 meets key business requirements while providing the flexibility needed to support different elements of the supply chain. It provides several user configuration options, is platform independent (Windows, Linux, Solaris, Mac) and does not require suppliers to purchase specific software to complete declarations.

The standard includes a single data model and supporting XML schema, plus there are two forms, IPC-1752-1 and IPC-1752-2. The forms,

based on Adobe .pdf forms, use a UML data model developed with the assistance of the National Institute of Standards and Technology. They can be printed or exchanged via electronic means from e-mail and Web interfaces. **Table 1** shows how the two forms support the various reporting levels.

Table 1. Six Classes of Reporting		
Class	Description	Form Type
Class 1	RoHS reporting at a homogeneous level in yes/no format	IPC-1752-1 IPC-1752-2
Class 2	Same as Class 1, with the addition of manufacturing process reporting	IPC-1752-1 IPC-1752-2
Class 3	RoHS reporting at a homogeneous level in yes/no format RoHS substance reporting at a homogeneous level and other JIG A & B substance reporting at the part level plus other substances at the part level	IPC-1752-2
Class 4	Same as Class 3, with the addition of manufacturing process reporting	IPC-1752-2
Class 5	RoHS reporting at a homogeneous level in yes/no format Substance reporting at the homogeneous level. JIG A & B substance list provided, other substances can be added	IPC-1752-2
Class 6	Same as Class 5, with the addition of manufacturing process reporting	IPC-1752-2

The standard supports three levels of declaration:

1. Item-level RoHS declaration in yes/no format, with identification of any applicable exemptions (supported by both forms).
2. RoHS and JIG level A and B and other substances requested, declared at the item level (except for RoHS restrictions) with identification of any applicable exemptions, as well as providing substance ppm or weight if above thresholds. (Requestors would choose IPC-1752-1 form if they want this level.)
3. Declaration of RoHS, JIG A and B, and other substances at the homogeneous material level, up to full declaration and also including identification of any applicable exemptions. (Requestors would choose IPC-1752-2 form if they want this level.)

While there are technically six classes of reporting, there are really only the original three required levels of declaration, with the ability to include manufacturing process information, such as lead finish, maximum reflow temperature and moisture sensitivity level.

IPC-1752 integrates and leverages several industry efforts, establishing a common solution that is shaped not only by regulatory guidelines but also by industry needs and requirements. It can help eliminate the costly and burdensome use of multiple material declaration formats. At the same time, it provides flexibility, allowing users to select from several options in terms of the level and scope of the data requested. While no standard is perfect, rapid adoption of IPC-1752 represents the best available option for the industry to efficiently meet the business and information needs of the impending RoHS Directive.

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