Results of EIC Vote on Joint EIA/EICTA/JGPSSI Material Composition Guide
10/28/03

Comments
We have reviewed the Joint Material Declaration Guide and have a couple of minor comments: 1. Annex E lists some legal and regulatory information as well as examples of use in Japanese. It would be useful to provide the English translation, particularly for the legal and regulatory documents to be consistent with the rest of the document. This would help the user find the citation in the event this is necessary. 2.Annex C references the set of data fields. It would be useful to make reporting in ppm or % mandatory. More companies request data in this format than grams and grams could become a very small number, particularly for semiconductors. In order of importance, #1 is more of a priority for us, while #2 is a preference.
(1) Page 6 - Threshold Level Definition - Concentration level, which defines the limit, (equal to or) above which the presence of a substance or material in a product or subpart must be declared based on the requirements of this guide. Add equal to or - which is shown in brackets above. This is important. We have More than and Less than mentioned in the document but not equal to. Suggest adding the following (in brackets) for clarification Substances: Substances are chemical elements and their compounds. CAS numbers are provided (in Annex F) for these substances where known. (2) Page 8 - I would bold the following point. If a material/substance is intentionally added, then it needs to be reported regardless of its content level. If material/substance is otherwise present, then its threshold level applies. It is important and people may skip it and not declare a substance if it is intentionally added and lower than the threshold. Azo colorants - Note about contact with direct skin is very subjective. How would once determine this? Normal use may not impact a person, but a repair person could be subjected to azo-colorants. Define "shortchain" (i.e., number of Carbon atoms) for Shortchain Chlorinated Paraffins. It is in Annex F as C10-C13. What about C9 and under?? To me that is short chain as well. Radioactive Substances - Is there a minimum level of "activity"? Maybe tie it to the UN definitions of dangerous goods? I remember seeing Organic Tin on many customer questionnaires. TBT, TBTO & TPT does not cover all Organic Tin (I do not think). I see a detailed listing in Annex F but does it cover all substances of concern? You may want to check. (3) Page 9: Bold the following - For Level B materials and substances, the default threshold level is 1000 ppm based upon the weight of the product or subpart being declared. Reporting below the threshold is allowed, but not required. For Nickel, same comment as above in Azo colorants. Although, I have to admit the Nickel declaration is a little clearer. Exceptions like this are dangerous since the item could be 100% nickel but we would not know it because it does not come into contact with skin for prolonged periods of time which is subject to interpretation. I strongly suggest deleting these Notes. What happened to TBBA? I assume it is included now in the "all other Brominated Flame Retardants". However the Organophosphorus compounds listing is still mising from the previous guide (see Table I, C2). (4) Page 10 - Under the Product/Subpart Infomation section under #4, that is optional. How about adding information as to if the substance can be recycled (e.g., subtance is homogeneous in subpart, can be separated from part and can be recyclabled). This would encourage recycling.

(5) Annex E - I did not go into a detail review but noted alot of references to Japanese & EU Law. US & German laws were absent. I know that Gernany has some comprehensive laws on the books which are in Siemens questionnaires. (6) Annex F - Bold the following: These lists are not comprehensive; they represent examples of chemicals with known CAS numbers. It is an important point.
Agilent wishes the following deficiencies to be addressed in the first review cycle prior to standardization: 1. Agilent requires negative declaration of level A substances. We want the example declaration revised to include all level A substances so suppliers declare explicitly zero content for all level A substances absent from their product. Reasons for concern: We note that JGPSSI's survey tool includes this feature, and that the example was introduced at the Stockholm meeting in September this year that did not allow time for debate during the development of the Guide. The resulting basic declaration (Annex D) seems insufficient for legal minimum data. 2. Agilent sees no practical use (added value) to precious metals on the level B list. Legal Compliance is determined by level A substances and we require knowing the presence or absence of these substances as the highest priority. Tracking level B substances is highly desirable to us for end of life treatment information. Agilent does not request precious metals content from its suppliers at this time. To request declaration of silver content will cause additional problems when it comes to the difficult assessment of the mass of silver in lead-free solders. Reasons for concern: We do not expect any of our suppliers to weigh subparts prior to solder assembly to determine silver content. The extra time and cost offers no benefit to us the customer. Agilent does not intend to burden suppliers with any request for data that we cannot reasonably justify. The Draft Guide will not be effective unless specific issues above are resolved. We trust that these can be resolved in the first review cycle prior to standardization.
Apple appreciates your efforts and the EIAs task force's hard work to push the EIA/EICTA/JGPSSI material guide further. We strongly support the quick development of a worldwide standard, so that the information exchange on relevant substances between supply chain partners can be done in an efficient and streamlined manner. The guide will be successful and fulfill its objective, only if acceptance and broad distribution can be reached. This means that a large number of international OEMs and component manufacturers of the electronics industry sector (including smaller and medium sized companies) need to support the content and the format of the guide/standard. The content of the joint guide therefore has to be designed in a way, which allows broad buy-in and consensus from a wide variety of industry players. Concerns: As discussed several times, please find below a summary of Apple's major comments to the existing version of the material guide: 1.We are strongly concerned about the placeholder language for Bill of Materials in Chapter 1.4. The current language implies that the current parties involved in the design of the material guide support the concept of a Bill of Material disclosure in a future standard, but could not agree on the details for this section. Apple is against any mention of a Bill of Material reporting requirement in the guide or future standard and asks for the removal of this section. 2.With respect to the disclosure of level B substances, Apple is against the reporting requirement for the following substances: copper and copper compounds, gold and gold compounds, magnesium, selenium and selenium compounds, palladium and palladium compounds, silver and silver compounds. Reasoning:

While Apple recognizes that individual companies with specific needs (e.g. company specific product take back program, Life Cycle Assessment Programs etc.) may ask for additional information from its suppliers, it does not support the inclusion of such subjective criteria into an industry standard format as either mandatory or voluntary requirements. Apple do not believe that the perceived benefit of reporting requirements for additional substances or a bill of material justifies the resources to obtain, validate, and manage this information. In addition, Apple is not aware of any relevant demand for the disclosure of this information from our recycling partners in the Europe, US or Asia. In our conversations with other US and European based manufacturers of the electronics industry sector similar concerns have been voiced. Apple recognizes the need for an adoption of the materials guide and the quick development of a standard for the information management of materials amongst supply chain partners. As this is a first time undertaking within the electronics sector, this activity will generate a lot of interest and attention from other stakeholders. Industry therefore have to ensure that the content and requirements of the guide and standard are relevant, manageable, practicable and that administrative resources needed to manage this effort are kept to a minimum.
We currently vote to oppose the Guide due to its listing of beryllium as a "Level B" substance. The inclusion of beryllium on this list is arbitrary and not consistent with the listings of other "Level B" substances.
None
We applaud EIA, EICTA and JGPSSI for developing such a comprehensive declaration guideline and feel that the following revisions are necessary to developing a harmonized declaration standard that could be adopted by industry: 1) Disclosure of "Level B" materials should be strictly voluntary. Our experience with managing materials data indicates that disclosure of certain "Level B" materials will clearly add costs to the declaration process, without any real benefits. From an end-of-life standpoint, electronics recyclers routinely run precious metals assays to determine the content and value of some of the "Level B" metals upon recycle. Collection of this information may serve a purpose in complete life cycle analyses (LCAs), however the inputs needed to accurately conduct LCAs would go well beyond estimating the precious metals content of the products. Collecting "Level B" materials information should be done at the discretion of individual companies and therefore should not be part of the mandatory reporting requirements. Instead of debating the validity of whether or not each "Level B" should be included in the guideline, we feel that the best solution is to make disclosure of "Level B" materials strictly voluntary to distinguish them from the mandatory disclosure of "Level A" materials. We support mandatory disclosure of "Level A" materials. 2) Eliminate the "mandatory data fields" found in Annex C. Any material declaration reporting format should be flexible enough to allow manufacturers the ability to capture material content data appropriate for their business. While examples of declaration formats are useful, no prescribed or "mandatory" data format should be found in the guide. In practice, manufacturers will likely choose their own data reporting format and process.
HP has reviewed the Joint Industry Material Composition Declaration Guide. HP supports the need for an industry driven material declaration standard and has been an active participant in the process. We appreciate and acknowledge the effort, by a large group of companies with disparate viewpoints, that the draft guide represents. However, in spite of our support for the process and support for the eventual tool that the process will develop, HP votes NO to the current

document. We are paying close attention to the many statements, both for and against the adoption of the draft guideline. We find it very important that even those companies that support the document have serious misgivings and look forward to "fixing" the guideline after it has become a standard. We feel that this is not the way to approach a standard as broad reaching as the draft guide. We do not feel that the guide is workable in its present form, and we think if we were to give the guide in this form to our suppliers, the majority of them would not understand what is being requested of them or how they are expected to respond. For these reasons, we would support a pilot test (of at least six months) that would be designed to test the guide with major suppliers before it is submitted to become a JEDEC standard. We believe that by incorporating the findings of such a pilot program into the guide, the guide will address many of the objections that member companies are currently raising and lead to development of a guide that will not need to be corrected immediately upon being issued. The likelihood of producing a guide that would find broad acceptance from our suppliers would increase significantly. We have read repeatedly in the various email messages that are being passed among the member companies the assumption that a pilot study will be run after the guide is made into a standard. If this is true then this assumption must be very clearly stated and documented in the guideline. However, we feel that pilot testing the guideline after it has been adopted as a standard is too late. We cannot support the standardization of a guide that is universally acknowledged as flawed in the hope that once it is a standard it can made right. Once the guide is standardized, there are no guarantees that a pilot study will be run or that any changes will be made. In any event, without some statements in the guide itself about what such a pilot test would look like and address, it seems that there is no mechanism or process to allow for such a pilot test and further refinement; instead, the "guide" would be implemented, in some fashion and we fear quite unevenly and unsuccessfully, as a "standard". We have a number of specific issues with the guide, many of which have been amply voiced by a number of other companies and we will not address them in this letter. HP will continue to support the process as it moves proceeds. We look forward to continuing to work for a standard that presents a workable process to answer a difficult set of questions.
IBM shares some of the concerns of Apple and Dell, but it is time to move forward. If EICTA fails to approve the document, I would recommend we go ahead and publish as and EIA / JGPSSI "guide," and then move any subsequent discussions to a JEDEC Standards Committee. I'm not sure whether JEDEC can publish what we have immediately as a standard or if they will need to take what we have as the starting point for a new standard to replace the EIA / JGPSSI guide. Either way is OK with me. However, I do think that if we publish as is, we need to start immediately on revisions.
As I shared with you and Jason about three years ago, this is a great effort that all of us should endorse. It appears to be a tremendous amount of work though; but, when finished, should provide a template that could be used to establish a formal material declaration reporting system. If passed, and since it's a collaborative work with the EU and Japan, it should carry significant weight with our entire customer base. Not only that, it appears to be in line with current legislation as well as anticipated legislation and other substances of concern KEMET is seeing from our customers.
Kodak votes to support the use of the industry guide, with the understanding that there is opportunity for future revisions.
Lexmark supports the Joint Materials Declaration Guide and casts its vote in support of working to promote the guide to the level of industry standard in order to simplify supply chain requests for materials certification data. We understand that their are still issues with details of implementation and materials on list B and trust that work will

continue on to resolve concerns.
We should be very careful of addressing only the concerns of companies voting NO. There are companies voting YES , who want a BOM or list C. There are also companies voting YES who agree with comments made by Apple/Dell. Focusing on those that do not accept the compromise as is today might suggest everyone voting yes is completely happy with it, where in reality there continues to be a full spectrum of opinions. To be honest, I do not see a way forward in the EIA/EICTA/JGPSSI approach for moving forward after publication of the current guide (without it we would not have come this far though!). JEDEC would provide an opportunity for each company to participate, and have one vote, using a clearly defined process. This said, I could live with discussion rounds in JEDEC before issuing the guide as a JEDEC standard. We know there are differences of opinion, and we need a clear process to deal with them. However, we also need a clear starting point, and I think the guide would be just that after both EIA-EIC and EICTA-EPC have approved (or rejected) it. In contradiction to Apple/Dell comments I see the Guide as an optional document so the use of list A and B are optional already. Customers may ask to provide info on both list A and B and this may be considered too much. From Lucent's point of view, we would be happy if our customers would ONLY ask for list A and B as most of them are requiring more already.
Microsoft votes yes. I expect to continue working with EIA group to improve the guide by making appropriate content revisions (e.g., Prop 65).
Motorola votes yes on the Material Declaration Guide. I would strongly recommend that we initiate a revision within the JEDEC standards group ASAP to address other concerns that have been raised. These concerns include setting the reporting threshold for lead at 300 ppm to help companies comply with the Prop 65 settlement most of them signed up for. Another reason to begin the revision process quickly is to help the document evolve (mature) into a more acceptable standard that should facilitate the ability to fast track it in to IEC.
1. Annex D - Example of Materials Declaration Form For products that may vary from unit to unit in weight, the sample form may be misleading. There are two other example forms referenced. It would be better if all three forms are shown, and hopefully, one will also show an alternative of reporting materials/substances as a weight % of the product, rather than an absolute weight. 2. Annex E - ... Examples of Use 2nd page (page 13 of draft document) listing for Magnesium does not include the fiberglass which is the standard reinforcement fiber in all printed circuit boards. (Up to 5% of fiberglass is magnesium oxide.) 3. Annex F - Detailed Chemical Lists with CAS Numbers Since http://chemfinder.camsoft.com is referenced in Annex C (page 10), then the chemical names on this web site should be the ones used in this annex. In some cases, synonyms are used. Under azo colorants (page 15), "4,4'-diaminodipheylmethane" is mis-spelled. It should be "4,4'-diaminodiphenylmethane". Chemical name at the above web site is "4,4'-methylenebisbenzeneamine". Under ozone depleting substances/isomers, top of page 17 "1,1,2 trichlorotrifluoroethane" is incorrect. It should be "1,1,2 trichloro-1,2,2 trifluoroethane".
I handle customer composition survey requests for 3M/Electrical Markets Division, and one of my counterparts in Germany very recently forwarded me a Draft copy of the Joint Industry Guide. I haven't had time to go through it in great detail, but two items seem worthy of comment. The first is on Page 11; I think that any "Declaration Data Sheet" should be at least written with the composition in the form of %, with absolute mass as an option. Using actual mass may be convenient for some forms of engineering computations, but it is not generally applicable . Further, it is meaningless when a raw material is supplied in bulk and the vendor has no way of knowing how much is used in each assembly (tape, heat shrink tubing, adhesive.....). When a percentage is used, then any weight units or amount can be used compatibly. I am assuming the Declaration Form is for the purpose of disclosing only listed materials. I have a small percentage of surveys that ask for full composition of a product, and we do not disclose full compositions except under a Non-Disclosure Agreement. The second item is perhaps due to some non-understanding by me. This is the list of "Azo Colorants" on page 15. These are all derivatives of Aniline in some way, and I would guess than nearly all of these are colorless. I believe the origin of this list is the fact that some "Azo" dyes and pigments can be reactively decomposed ("reduced") by some biological systems into aniline derivatives, which are usually considered carcinogens. My only suggestion would be to more accurately label the listing on Page 15, but EU Directives seem to have caused the use of this

heading. The purpose of the declaration is to disclose the presence of azo compounds which may be degraded to aniline derivatives under specific reaction conditions. Apparently all aromatic azo compounds do not undergo this reaction, and I cannot find a useful description by the EU of what the characterizing reaction is. I have spent many hours trying to go through EU documents to find a specific reference to the "reductive cleavage" reaction. Even if the reaction were available, I would like to suggest that unacceptable dyes be designated by their Colour Index classification, rather than requiring a characterizing reaction to be carried out. It would save a lot of bother and expense.

A further concern about azo colorants is that I see many surveys come through asking about the presence of "azo compounds", when the only restrictions on their use is prolonged contact with skin, which doesn't apply to nearly all electronic/electrical uses. However, if customers start blindly banning them because they are on a list, a group of very good dyes will have to be abandoned.

If there is any clarification needed, please contact me. The adoption of a universal list of materials or chemicals of concern, with reporting standards would be very helpful. It will be a worthwhile improvement over the inadequately defined limits that presently seem to exist. The only industry reporting system which I have seem is the IMDS for the automotive industry, which I would guess that you have seen. Overall, the Draft seems quite reasonable and usable. Thank you for the effort; I hope that it can become standardized.

JGPSSI's Comments on the Joint Industry Guide (dated September 19, 2003)

2003.10.16

Please make some minor changes to the Annex E as follows to make things clearer.

-P.12: "Legal and Regulatory Information" of Cadmium/Cadmium Compounds
> Insert " (Danish law)" before ", 76/769/EEC".(After Japanese characters) Japanese characters only is unkind for most of people.

-P.13: "Legal and Regulatory Information" of PCBs, Polychlorinated Naphthalenes and Radioactive Substances
> Insert " (Japanese law) " after the Japanese characters. The reason is the same as above.

"Examples of Use" of Polychlorinated Naphthalenes(more than 3 chlorine atoms)
> Modify "electricity" to **electric characteristic**

"Examples of Use" of Tributyl Tin (TBT) and Triphenyl Tin (TPT)
> Modify " anti-oxidizer" to **antioxidant**

-P.14: "Examples of Use" of Vinyl Chloride Polymer(PVC)
> Modify "for insulation use" to **insulator**
> Modify "heat resistance use " to **chemical resistance**

Please make modifications (or corrections) to the Annex F as follows.

-P16 : Chromium VI and its Compounds
> **Delete** "Chromium" from the list.

-P19 : Polybrominated Biphenyls" (PBBs)
> Modify the name "Polybrominated Biphenyls " (PBBs)" to **Polybrominated Biphenyls (PBBs) and Polybrominated Diphenylethers (PBDEs)** because both PBBs and PBDEs are included in the list below.

-P20 : Tributyl Tin, Triphenyl Tin and Oxide
> Separate "Bis(tri-n-butyltin)oxide (TBTO)" from the list. In other words, make "TBT and TPT" list and "TBTO". This will help clarifying the lists.

-P23: CAS Number 61262-53-1 (6th from the top)
> The CAS Number is wrong! (A manufacturer of flame retardant kindly told us.)
The correct CAS Number for Decabromo-diphenyl-ethane is **84852-53-9.**

-P24 : Selenium /Selenium Compounds
> Modify “Selenium and materials” to **Selenium,** “and materials” is unnecessary.

Other change:

-P10: Annex C #4 Data field “ Material/ Substance Mass (g)”
> **Add “or (mg)”** because there may be cases which only (g) is too big to indicate Material/ Substance.