



**INEMI**<sup>®</sup>

International Electronics Manufacturing Initiative

# PVC Alternatives

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Advancing manufacturing technology

# PVC Alternatives Agenda

- **09:00am**      **Introductions**
- **09:15am**      **Overview of Project**
- **09:30am**      **Review of Goal and Scope Slides**
- **10:15am**      **Break**
- **10:30am**      **Review / Discussion on SOW**
- **11:15am**      **Discussion on Data Exchange between resin and cable manufacturers and LCA consultants**
- **11:30am**      **Data Requirements for LCAs**
- **11:50am**      **Wrap-up / Next Steps**
- **12:00am**      **Adjourn**

# Comments, Questions, and Issues

- How to maintain confidentiality of competitive information / data, i.e., formulations, manufacturing processes, etc.
- That seems to be a clear agenda item for next week.
- Not sure how "aggregation" solves the problem or if it will be adequate in all cases.
- Point of concern - earlier during this LCA project process we had established conducting LCA on 3 compounds used for making power cords –
  - a) 60C rated PVC that could contain phthalate plasticizer as well as brominated flame retardants
  - b) 105C rated PVC that was RoHS compliant and did not contain phthalate plasticizer nor brominated flame retardants
  - c) Non-PVC that was RoHS compliant and did not contain phthalate plasticizer nor brominated flame retardants
- This would enable comparing the lowest cost PVC that is probably being used today (driven by low cost) along with PVC that did not have the perceived problems / drawbacks (i.e. "green" PVC). Now it appears that EarthShift is wanting to eliminate the "green" PVC - as I was not on the most recent call where this was brought up I don't understand the reasoning behind this.
- I think it would be a serious mistake to do so as it would result in comparing PVC (containing most problematic ingredients) with non-PVC - this is not a valid comparison as much better PVC than what is being proposed for comparison is available commercially and has been for a few years.

# Comments, Questions, and Issues

- **The Product System to be studied, power cord sets to be investigated.**
  - UL Rated to 60C
  - UL Rated to 105C
- **It seems like you were recently discussing only doing the 60C?**
- **Mike Patel at Teknor Apex was the original member that seemed adamant that you really need to look at both temperature ratings as the original Product System. This is how the 105C product came into play in the first place even though almost every computer power cord I have ever seen is 60C. I am guessing Mike might have asked to include this because while the computer cords may only be 60C if you look at PVC cables in general most of them are 105C.**
- **My personal opinion (which might be shared by others) is that if you limit this study to 60C you chop off a huge part of the general PVC cable business. The 105C might not apply to computer cords but I believe by including 105C the entire study has a lot more value and useable information to all of the members over and above just the computer power cords segment.**

# Comments, Questions, and Issues

- "The study has to define how the new PVC Alternative cables will be UL tested/approved or qualified."
- I mentioned this earlier but will repeat myself because I do not believe anyone is really taking into consideration how important this is.
- The group has agreed that the 18/3 SVT will be the model. We can assume that the logical "PVC Alternative replacements" will ultimately be 18/3 SVE but shouldn't there be testing included in this study to verify that the PVC Alternatives are capable of passing UL "SVE" ?
- At some point someone mentioned that we would only consider evaluating UL Approved compounds but that too means little as compounds do not get UL approved to SVE, only cables do.
- My fear is that this group can do months of research on a PVC Alternative only to find out it is not capable of passing the UL approval.
- This happens all the time and I have had at least 3 occurrences in the past 16 months of compound companies that recommend a compound and it fails at UL.

# PVC Alternatives

## Preliminary Task List

- **Gather data**
- **Modeling**
- **Analysis**
- **Reporting**
- **Create training materials for team members**

# PVC Alternatives

## Preliminary Task List

- **Gather Data**
  - Power Cord sets
  - Plastics
  - Additives
  - End of life
  - (use phase fires?)

# PVC Alternatives

## Preliminary Task List

- **Modeling**
  - Model LCI data in each tool
  - Model alternatives in each tool

# PVC Alternatives

## Preliminary Task List

- **Analysis**
  - Analyze alternatives, do sensitivity analyses in each tool
  - Review analyses with the team
  - Revise as needed

# PVC Alternatives

## Preliminary Task List

- **Reporting**
  - **Create internal report**
    - **Determine and document key findings about PVC vs. alternatives**
    - **Determine and document key findings about datasets**
    - **Contrast and compare the two tools**
    - **Create presentation from report**
  - **Present results to team members**
  - **Create summary report for iNEMI members**
  - **Create report for general public, if desired**
- **Create training materials for team members**



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