iNEMI

International Electronics Manufacturing Initiative

NEW iNEMI Initiative
Halogen-free Project

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Halogen-free Project

Project Objective:

- **Identify technology readiness and gaps,**
- **Stimulate supply capability, and**
- **Recommend standards development opportunities**

for “halogen-free” alternatives to conventional printed wiring board materials based on market segment requirements.

Is / Is Not

This Project IS	This Project Is NOT
Technical evaluation of key electrical and mechanical properties	EHS assessment
Focused on those attributes which are of most value to supply chain.	Biased towards specific laminate suppliers, geographies, or market segments.
Build on learning from prior investigations	Repeat of prior work
Recommendations for standards development or further investigation	Standard Development
	Open to non-NEMI members

Schedule

Phase I (Design)	**Feb 1 ’06 – Sept 30 ’06**
Phase II (Test)	**Oct 1 ’06 – June 30 ’07**
Phase III (Results)	**July 1 ’07 – Nov 30 ’07**
Release Results	**Dec ‘07 (iNEMI members)** **Feb ’08 (APEX-Public)**

Phase 1: Design

Goal: Review prior work and make recommendations for testing needed. Investigation should take into account the needs of electronic product sectors represented by iNEMI membership.

1. **Identify market segment requirements**
   Consult iNEMI PEGs to identify unique HF requirements for product sectors: (automotive, aerospace/defense, consumer/portable, medical, netcom, office/large business systems and system-in-package).

2. **Identify candidate materials**
   Poll the supplier base, keying in on candidate materials that are commercially viable with consideration for market segment applications.

3. **Identify key performance characteristics and test criteria**
   Assess prior studies and identify critical knowledge gaps or technical issues. Make recommendations for performance tests needed. Review results of prior industry and member company investigations.

4. **Design test vehicle(s) and test methodologies, leverage standards where possible:**
   Specify test vehicle criteria required for performance testing. Agree on a minimal number of test vehicle designs and test requirements.

Phase 2: Test

Goal: Develop, manage, and execute performance testing.

1. **Develop evaluation schedule**
   Take into account diversity of candidate materials, key performance characteristics, and resource and time constraints.

2. **Procure parts and test vehicles**
   Obtain needed evaluation materials. Consider lead times needed to synch with evaluation schedule. Solicit participation from supply partners.

3. **Assign teams to carry out completion of the testing in a standardized fashion**
   Each test should be carried out in a manner that produces meaningful results. Industry standards should be followed where applicable. Testing should be coordinated to allow correlation of results and sharing of test materials.

4. **Perform mechanical and reliability testing on test vehicles.**
   Leverage capabilities and expertise of participating members and supply partners. Follow test procedures carefully and record positive and negative results.

Phase 3: Results

Goal: Compile results, assess significance, make recommendations, and publish report.

1. **Assess performance relative to market segment requirements.**
   Compare results to critical performance requirements defined by PEGs

2. **Assess technology readiness / identify gaps**
   Flag unexplored issues and identify technical risks that need to be resolved before materials can be widely adopted. Make recommendations for future work.

3. **Assess manufacturing capability and supply capacity**
   Work with suppliers and EMS's to identify barriers to supply chain viability. Interpret implications of performance testing in terms of manufacturing capability.

4. **Publish results**
   Compile and edit concise summary of methods, meaningful results, and recommendations. Goal is to roll the final report to members by the end of 2007 with a public release at APEX in Feb 2008.