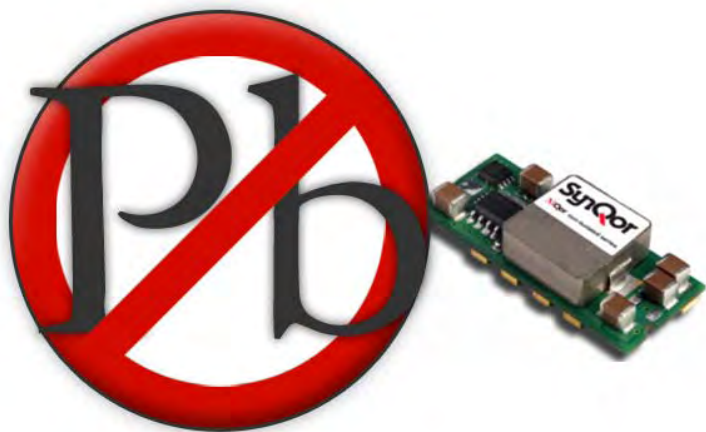




Advancing The Power Curve

RoHS Compliance/ Lead-Free Initiative



Updated 6/8/05

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RoHS Compliance

- The EU led RoHS (Restriction of Hazardous Substances) Directive, scheduled to be implemented on July 1, 2006 bans the use of Lead, Cadmium, Hexavalent Chromium, Mercury, Polybrominated Biphenyls (PBB), and Polybrominated Diphenyl Ether (PBDE) in Electrical and Electronic Equipment:
- SynQor products do not contain any RoHS banned substances other than lead.

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Why Lead-Free?

- As part of the global initiative to minimize the use of hazardous substances in the production of electronic equipment and in compliance with RoHS legislation, SynQor is eliminating the use of lead in its products and manufacturing processes.



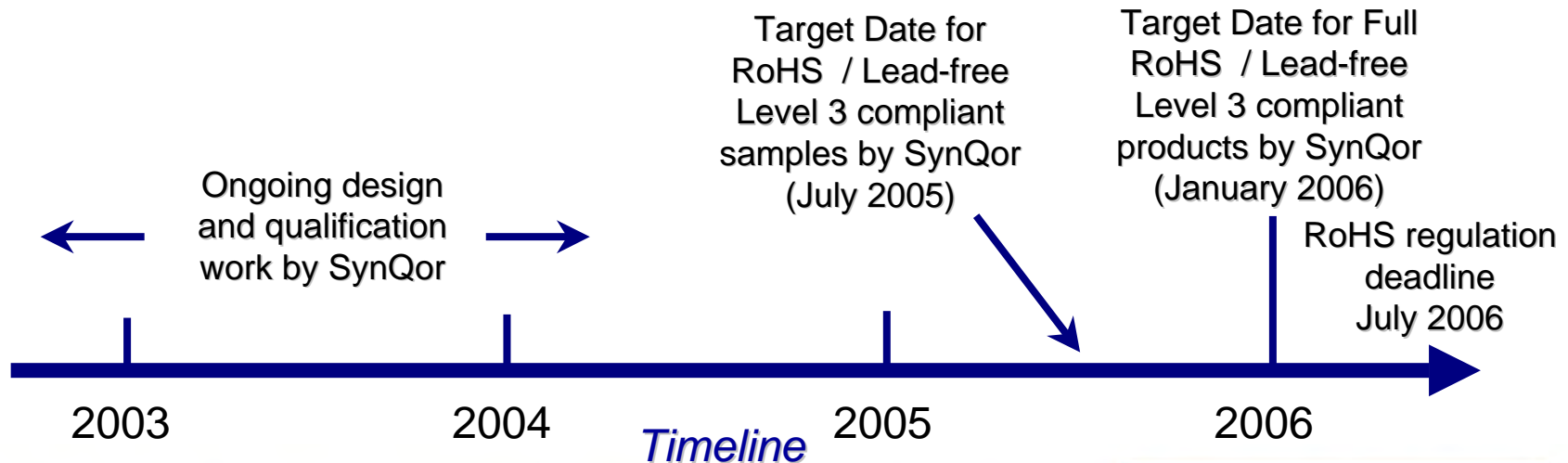
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The SynQor logo, featuring the company name in a bold, white, sans-serif font with a red arrow pointing upwards and to the right, set against a blue background.

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Timetable

- SynQor will complete its Lead Free initiative in stages.
- Much of the work is already complete.
- Lead Free samples, fully RoHS compliant, targeted for July 2005.
- Full lead free compliance is targeted for January 2006, well in advance of the RoHS directive deadline set for July 1, 2006



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Lead Free - Definition

SynQor has adopted the IPC classification standards:

Lead Free Level 1 - wave solder and solder paste used to manufacture products are lead free

Lead Free Level 2 - Level 1 achieved and PWB finish is lead-free

Lead Free Level 3 - Levels 1 and 2 achieved and only lead-free component finishes are utilized

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Lead Free Level 1

Lead-free solder and solder paste

- SynQor fully qualified a replacement for SnPb solder paste (used in the assembly process) in 2002
- Replacement solder paste:
 - SAC 305 Lead-Free Alloy
 - Passes Telcordia GR-78-CORE Electromigration and SIR test requirements
 - Qualification data is available on request



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Lead Free Level 2

Level 1 & PWB finish contains no lead

- SynQor changed PWB finish from SN-PB HASL to ENIG in 2002 on all new designs
- Incorporation of ENIG PWB finish into mature designs targeted for Q3 2005
- ENIG finish boards are fully qualified, qualification data is available on request
- Qualifying lead-free pins:
 - Proposed finish is Matte Tin over Ni
 - Ni under-plating mitigates tin whisker growth
 - Passed IPC/JEDEC JESD22-B102D Solderability Test in 2005

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Lead Free Level 2 (cont.)

- Quality improvements
 - Change to ENIG finish eliminates thermal shock to PWB substrate during HASL finish process - improves reliability
 - ENIG finish provides smoother surface for SMT assembly of smaller components to PWB (0402, fine pitch, etc.)



HASL



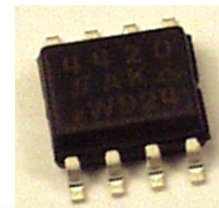
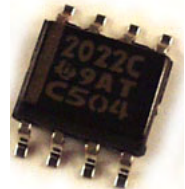
ENIG

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Lead Free Level 3

Level 2 & component finishes contain no lead

- The most difficult standard to achieve compliance because it is outside of SynQor direct control
- Most component suppliers now have full plans and qualification data available
- SynQor supply base surveyed in 2004 for lead-free availability
- Actively pursuing transition to lead-free AVL
- Full qualification of components targeted for June 2005
- Vendors without satisfactory lead free plans and non-compliant vendors to be removed from AVL



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Form, Fit & Function

- Process and material changes will not have any impact on the form, fit or function of SynQor's products
- Transition to IPC Lead-Free Level 1, 2, and 3 will be announced through appropriate Product Change Notices (PCN's)



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Frequently Asked Questions

Q. Which of your products are affected by the Lead-Free Initiative?

A. All SynQor products

Q. How do you plan to differentiate between conventional parts and those that are Lead-Free?

A. SynQor intends to meet its customers requirements for part differentiation. If a lead-free part number is required, the new part number will have a '-G' suffix appended to the original part number. Example: PQ60033EML15NNS-G

Q. Are you planning to continue production of non-Lead-Free products beyond the July 1, 2006 RoHS directive deadline?

A. The production of non-Lead-Free products beyond the RoHS deadline will be determined by specific customer requirements (e.g. for those taking the 'Telecom' exemption.)

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FAQS (cont.)

Q. Do you foresee any backward/forward application compatibility issues?

A. No

Q. What alternative to SnPb solder paste are you considering?

A. SAC 305 Alloy has been fully qualified. It passes Telcordia GR-78-CORE Electromigration and SIR testing. Qualification data is available.

Q. What alternative PWB Finish are you considering?

A. ENIG (Electroless Nickel Immersion Gold) has been fully qualified. Qualification data is available.

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FAQs (cont.)

Q. What temperature do you recommend for second level assembly of SynQor products?

A. For SMT products, we recommend not to exceed 260°C for 10 seconds per IPC and NEMI guidelines.

Through-Hole products are currently compatible with reflow temperatures that do not exceed 240°C for 10 seconds. These products will become compatible with the lead-free reflow process (260°C for 10 seconds) upon qualification of new PCB materials.

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FAQS (cont.)

Q. Will the higher temperatures required to assemble components to PWBs cause any changes to the material sets used in SynQor products (e.g. adhesives, substrate laminates, etc)?

A. We are currently conducting qualification of high-temperature compatible PWB Laminate systems for SMT products that require 260°C reflow lead-free assembly processes.

Q. Will the higher temperatures required to assemble components to PWBs cause any issues related to flatness or warpage?

A. No

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FAQS (cont.)

Q. What will be the impact of the higher assembly temperature to the moisture sensitivity levels of your products?

A. We will complete the MSL ratings of our planned SMT products by the Q2 2005 and anticipate a MSL rating of Level 2 or better.

Q. Will there be a pricing difference between RoHS compliant / Lead-Free products and non-compliant products?

A. We do not anticipate any pricing differences.

Q. Will there be a lead time difference between RoHS compliant / Lead-Free products and non compliant products?

A. No.

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