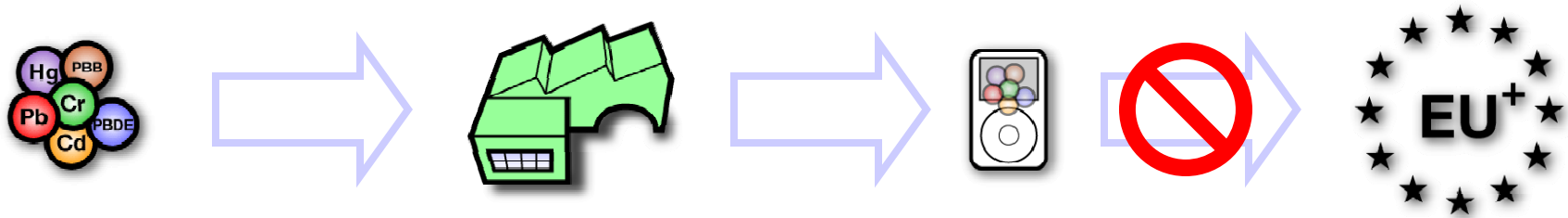


Environmental Compliance Documentation: What's Next?

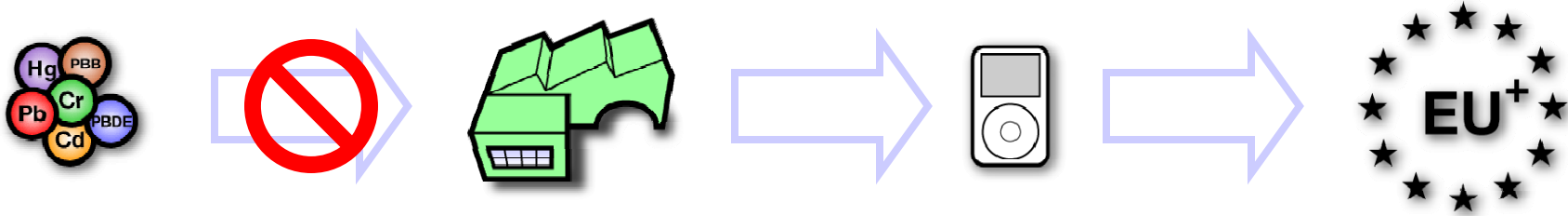


EU's RoHS: The Basics



Exceed the minimum amount of restricted substances in your product – **NO GO**

EU's RoHS: The Basics



Limit the minimum amount of restricted substances in your product – GO

EU's RoHS Readiness

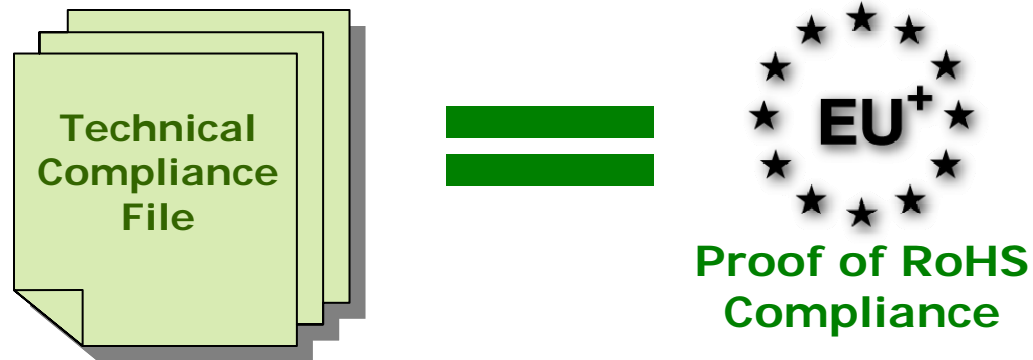


Proof of RoHS
Compliance

There are no stated documentation requirements in the RoHS Directive.
After 1 July, 2006 – *presumed compliant*.

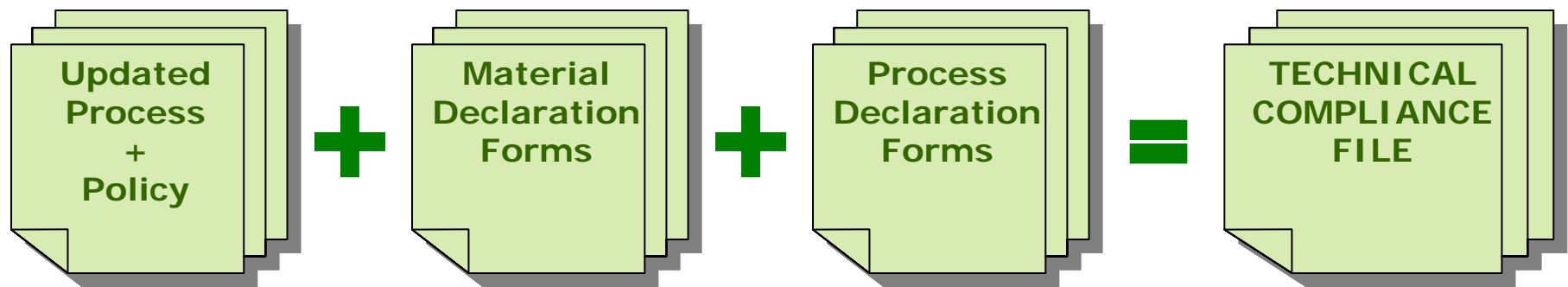


EU's RoHS Readiness



**Technical Compliance file includes all
auditable documentation used to
assist in due diligence defense**

RoHS: Documentation Path



Understanding from DTI:
Due Diligence Documentation should be available
within 28 days of being requested by authorities



Technical Compliance File: Company

- For each company/manufacturer:
 - Corporate Social/Environmental Policy/Statement
 - Standards Recognition (ISO, etc)
 - Certifications (Quality, IPC, etc)
 - 3rd Party Assessments/Assistance
-



Technical Compliance File: Products

- By product or product family:
 - Roadmap of compliance
 - Product Assessment
 - Analytical data
 - Process for assessing compliance
 - Audits of stated process
 - Materials declarations
 - Certificates of Compliance
 - 3rd party verifications/assessments
-



Case Studies

Taming the paper monster...





Case Study 1:

Start-up company in Category 3

- Problem:
 - Mis-understanding of the exemption for “lead-solder” as meaning the product was completely exempt from RoHS
 - Understanding the directive with limited resources and money
 - Limitations:
 - resources available to work on the project: money, people, time
 - Outcome:
 - Educated staff
 - EMS education
 - Documentation of all areas
 - Key Points:
 - Done on a budget
 - Done on a time budget
 - On-going activities:
 - Updates on evolving environmental directive locations such as: China, S. Korea, California, etc.
-



Case Study 2:

World-Wide Medical products Company

- Problem:
 - Parts falling off boards
 - Cause: BGAs changed to SAC balls; communication of change lost in the supply chain
 - Limitations:
 - Agility; upper management education, approval, interest
 - communication/translation
 - Availability of parts
 - Ability to redesign within FDA guidelines
 - Key Points:
 - Working on compliance ahead of the requirement
 - Outcome:
 - Educated staff using local & international sessions, directed and self-directed programs
 - Documentation of education as a beginning; continuing with road mapping, etc.
 - Working on next generation products sooner due to availability of parts
 - On-going activities:
 - Assessments of engineering designs/redesigns, updates, ECOs
 - Updates on evolving environmental directive locations such as: China, S. Korea, California, etc.
-



Case Study 3:

Small Start-up preparing for purchase

- Problem:
 - Competition in the broker market
 - Limitations:
 - Company size
 - Education on RoHS and other environmental directives
 - Key Points:
 - Using RoHS education/understanding as market advantage
 - Outcome:
 - Educated staff with directed program
 - Assessed reorganization of building
 - Documentation of education road map, segregation of parts, etc.
 - On-going activities:
 - Investigating XRF for go/no-go incoming inspection & verification
 - Updates on evolving environmental directive locations such as: China, S. Korea, California, etc.
-



Suggestions for Small to Medium Sized Companies

Roadmap & Document

- Company and Product Roadmaps towards compliance
- Association Memberships
- Auditable records
 - Education, Design, Purchasing, Quality, Manufacturing, etc.

Seek expert assistance & education

- Most small to medium companies cannot start from scratch to educate an employee on this topic
 - Should be incorporated into a due diligence strategy
 - Auditor should not assist in preparation for audit if performing audit
 - Be sure to ask where the 3rd party's information comes from
 - Direct from the source? Previous experience? Industry opinion/conferences?
-



Environmental Compliance Legislative Updates & Future of Environmental Directives

EU's RoHS directive is the tip of the iceberg...



TAC Approved Exemptions 21-24

not yet in the EU Official Journal (as of 17-Aug-06)

In the Annex to Directive 2002/95/EC the following points 21 to 27 are added:

21. Lead and cadmium in printing inks for the application of enamels on borosilicate glass.
 22. Lead as impurity in RIG (rare earth iron garnet) Faraday rotators used for fibre optic communications systems.
 23. Lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm or less with NiFe lead frames and lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm or less with copper lead-frames.
 24. Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors.
-



TAC Approved Exemptions 25-28

not yet in the EU Official Journal (as of 17-Aug-06)

- 25. Lead oxide in plasma display panels (PDP) and surface conduction electron emitter displays (SED) used in structural elements; notably in the front and rear glass dielectric layer, the bus electrode, the black stripe, the address electrode, the barrier ribs, the seal frit and frit ring as well as in print pastes.
 - 26. Lead oxide in the glass envelope of Black Light Blue (BLB) lamps.
 - 27. Lead alloys as solder for transducers used in high-powered (designated to operate for several hours at acoustic power levels of 125 dB SPL and above) loudspeakers.
 - 28. Hexavalent chromium in corrosive preventive coatings of unpainted metal sheetings and fasteners used for corrosion protection and Electromagnetic Interference Shielding in equipment falling under category three of Directive 2002/96/EC (IT and telecommunications equipment). Exemption granted until 1 July 2007.
-

Upcoming & Future Environmental Directives

- China
- USA: California
- Taiwan
- South Korea
- Japan
- Australia

... and more to come like ...

- EU's REACH
- EU's EuP





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