Subject: China RoHS
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Background

- Official title: Management Methods for the Prevention and Control of Pollutants from Electronic Information Products.
- Drafted by Ministry of Information Industry (MII).
- Official English version not available yet.
- Officially went into effect on March 1, 2007.
- Covers the same 6 substances as EU RoHS.
- Maximum Concentration Values (MCV) are the same as EU.

Reminder of the banned substances.

MATERIAL	LIMIT
Lead (Pb)	0.1% Wt
Mercury (Hg)	0.1% Wt
Hexavalent Chromium (CrVI)	0.1% Wt
Polybrominated Biphenyl (PBB)	0.1% Wt
Polybrominated diphenyl ether (PBDE)	0.1% Wt
Cadmium (Cd)	0.01% Wt

Example of where you may find the banned substances

- **Lead-** Solders, batteries, connectors, circuit breakers, motors, electronic components.
- **Mercury-** Fluorescent lamps, batteries, sensors, relays, electronic components
- **Cadmium-** Coatings, solders, semiconductors, contacts, PVC stabiliser
- **Hexavalent chromium-**Coatings to prevent corrosion (on zinc or aluminum or in paints), metalized plastics, toners
- **PBB-** Flame retardant in certain plastics
- **PBDE-** Flame retardants, plastic cases for monitors, connectors, fans,

Electronic Information Products (EIP)

- Electronic information products refer to the products and accessories manufactured with electronic information technology including electronic radar products, electronic communication products, broadcasting and television products, computer products, household electronic appliances, electronic surveying instruments, specialized electronic products, electronic components, electronic application products, and electronic material products.

Classification of materials in EIP

Classification of materials (Unit)	Definition of materials
EIP-A	Homogeneous materials in EIP
EIP-B	Plating material in components of EIP
EIP-C	Small components or materials that cannot be further disassembled under existing conditions in EIP. They generally refer to the products of equal to or less than 4 mm^3 in size.

Requirements for concentration limits for toxic or hazardous substances.

Classification of material	Limit requirements
EIP-A	The contents of (Pb), (Hg), (CrVI), (PBB), (PBDE), (excluding of decabromodiphenyl ether) in this category shall not exceed 0.1% and the content of (Cd) shall not Exceed 0.01%.
EIP-B	The hazardous substances including (Pb), (Hg), (Cd), (CrVI) in this category shall not be added intentionally.
EIP-C	The contents of (Pb), (Hg), (CrVI), (PBB), (PBDE), (excluding of decabromodiphenyl ether) in this category shall not exceed 0.1% and the content of (Cd) shall not exceed 0.01%.

China RoHS Scope

- Chinese version:

http://www.mii.gov.cn/art/2006/03/16/art_1221_8441.html

- English version (Unofficial translation)

http://www.aeanet.org/governmentaffairs/gabl_HK_Art3_EIPTranslation.asp

- *electronic radar products,*
- *electronic communications products,*
- *radio and television products,*
- *computer products,*
- *home electronic products,*
- *electronic instrument measuring products,*
- *specialized electronic products,*
- *electronic components and parts,*
- *electronic applications,*
- *electronic materials, and accessories*.

China Environmental Standards

- **SJ/T 11363-2006**: Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products
- **SJ/T 11364-2006**: Marking for the control of pollution caused by Electronic Information Products
- **SJ/T 11365-2006** :Testing Methods for Hazardous Substances in Electronic Information Products
- **GB/T 16288**: Marking for Recycling of Plastic Packing Products
- **GB 18455**: Packing Recycling Mark
- **GB 5296.2**: Instructions for the use of Customer Products & Household Products and Similar Electrical Appliances

Phases of China RoHS

Phase No	What should be done	Effective Date
I	All EIP declaration + various labeling	03/01/2007
II	Material restriction, test and certification	Catalogue TBD

Phase I Requirements

- Marking of the EFUP “Environment Friendly Use Period” . This is a period during which toxic and harmful substances or elements contained in EIP will not leak or mutate.
- Disclosure of the content of toxic and hazardous substances in a specific format.
- Marking and disclosure of the packaging material.
- Date of manufacture.

Marking of the EFUP

Symbol 1	Symbol 2
	
Signifies a product with none of the six substances above the MCV . Suggested color for this logo is Green. Minimum size is 5mm	Is used on a product with one or more of the six substances above the MCV . Suggested color for this logo is Orange. The number in the circle may vary. The number indicates EFUP in years. Minimum size is 5mm

Marking of the EFUP-Cont

- Products with EFUP less than 5 years should use 1, 2, 3,4 or 5 years as EFUP.
- Products with EFUP greater than 5 years should use multiples of 5. E.g. 5, 10, 15, 20, etc.
- When the number of EFUP for an EIP is not multiple of 5, should use the closest multiple number as EFUP.

EFUP Determination

- Concerns ALL parts in an EIP
- When dealing with a system consist of integrations of products with more than one EFUP, the system will be marked consistent with the system element with the lowest EFUP.
- EFUP is typically determined using one or more of the following techniques:
  - Similar technology
  - Design determination
  - Component manufacturer's data sheet
  - Durability of a product
  - Maintenance plan
  - Other methods

Toxic Material Content Declaration-Example in Chinese

50-14000-147R

部件名称 (Parts)	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr^{6+})	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
金属部件 (Metal Parts)	O	O	O	O	O	O
电路模块 (Circuit Modules)	X	O	O	O	O	O
电缆及电缆组件 (Cables and Cable Assemblies)	X	O	O	O	O	O
塑料和聚合物部件 (Plastic and Polymeric Parts)	O	O	O	O	O	O
光学和光学组件 (Optics and Optical Components)	O	O	O	O	O	O
电池 (Batteries)	O	O	O	O	O	O

O：表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。

X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。

对销售之日的所售产品，本表表示，公司供应链的电子信息产品可能包含这些物质。注意：在所售产品中可能会也可能不会含有所有所列的部件。

Toxic Material Content Declaration-Example in English

Component name	Hazardous Substances or Material					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Chromium VI (Cr^{6+})	Poly-brominated Biphenyls (PBB)	Poly-brominated Diphenyl Esters (PBDE)
PCB Assemblies	X	O	O	O	O	O
Chassis and Hardware	X	O	O	O	O	O
Cables and Harnesses	X	O	O	O	O	O
Relays and Fuses	X	O	X	O	O	O
LEDS	O	O	O	O	O	O

- A **X** indicates where a particular line item has hazardous substances above the MCV while an **O** indicates that it is below the MCV for that substance.

Toxic Material Content Declaration-Cont

- Table must be in Simplified Chinese but can have English or other languages translation next to it too.
- Table is also known as HST table (hazardous substance table) in industry.
- Additional information can be included at the bottom of the table to support any claim.
- Table of contents should accompany each finished product. The table should be part of the user manual.
- Chinese government prefers hard copy user manual but electronic copies are also accepted.
- Parts to be selected for listing at discretion of manufacturer.
- Supporting evidence should be available upon request.

Packaging marking

- The minimum requirement is for the outer box to be appropriately marked. Marking of other packaging is encouraged.
- Packaging must be made out of non-toxic material and be recyclable.
- Packaging must be marked in accordance with the relevant standard.
- The name of packaging material or its code must be stated on the packaging.E.g

- Mark may be applied by printing, labeling, spraying, molding or other methods.

Packaging marking- Cont

Mark No	Mark Name	Symbol	Application
1	Reusable		All types of packaging
2	Recyclable/renewable		All types of packaging
3	Contains renewable materials		All types of packaging
4	Green point mark		All types of packaging

Phase II Requirements

- Also known as catalogue phase. Banned substances applied only to products that are listed in the catalogue.
- Unlike EU, no exemption is anticipated.
- Testing and certification is required.
- Testing is most likely to be done by an approved Chinese labs only. Currently there are 11 approved labs in China.
- Certification is said to be done through CCC.
- Overall a costly exercise.

Similarities of EU and China RoHS

- Both are legally binding regulatory documents.
- The major purpose of both is to control hazardous/toxic substances in Electrical and Electronic Equipment.
- Both are related to trade activities (Trade of goods).
- Both restrict and prohibit the use of the same 6 hazardous substances.

Differences of EU and China RoHS

Issue	EU	China
Effective date	1-July-06	1-March-07
Scope	8 broad categories of finished products.	EU RoHS scope+medical, radar, components, certain consumables, household appliances, toys, tools, measuring equipment, etc.
Main requirements	6 toxic substances must not be present in homogeneous materials above the MCV unless allowed by exemption.	Two levels of requirements. Marking and certification.
Marking requirements	None- WEEE requires crossed wheelie bin symbol.	A few
Exemption	Almost 30 so far	None yet
Compliance method	Self declaration	Self declaration on phase I Certification on phase II

Differences of EU and China RoHS-Cont

Issue	EU	China
Packaging material	Out of Scope	Non-toxic/Recyclable Disclosed in mark
Non-electrical products	Excluded if the finished product does not depend on electricity for its function.	Included if listed as EIP. Includes CD and DVD's
Put on the market	When individual item is available for sale within EU and transferred to distribution	Applies to all products manufactured after 03/01/2007 intended to be sold in China.
Voltage	Up to 1000Vac or 1500Vdc	No voltage limitation
Standard	Does not require the use of standard	Is supported by standard for testing and certification

Some additional info

- Although EU RoHS Directive does not regulate batteries, since there is a specific battery Directive, but in China batteries belong to category of EIP and therefore it is subjected to regulation.
- Spare parts for maintenance if manufactured after 03/01/2007 are to comply.
- Test samples for labs, trade shows, R&D are exempt from regulation.
- Items requiring frequent replacement such as battery must have their own marking.

Regulatory environment-It is a business issue.

- Challenges

  Executive visibility and information
  Cross functional accountability
  Costs and financial risks
  Legal and customer liability

- Success Factors

  Executive sponsorship
  Good and accurate product selection
  Dedicated cross functional team
  Approved budget
  Integrated product road maps and accurate planning
  Accurate and organized documentation to meet the requirements