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**Editorial**

So what is actually happening about RoHS Enforcement??? Is it all as quiet as it seems? Apparently not. We have an article from Rob Spiegel after interviewing Steve Andrews of the DTI in the UK, detailing enforcement actions to date in the UK.

Closer to home we have one company (name withheld) who has had 2 shipments returned for non RoHS compliance. These were built as RoHS compliant product. This particular company has a good RoHS infrastructure, has enjoyed a well funded and well supported project and good corporate support. The assemblies were supplied to 2 different major corporates who undertook their own RoHS testing at inwards goods, presumably with XRF. This testing identified a non RoHS compliant component within the assembly and the goods were returned for rework. This company has now undertaken sample XRF testing of all their raw material stock.

A third story comes from the Manufacturing Technology InFocus Trade Show in Melbourne (formerly Austronics). A manufacturer of temperature control equipment lost their major contract in Sweden due their equipment not being RoHS compliant. As the Managing Director pointed out, he is category 9, (monitoring and control equipment) and hence out of scope until 2012. However his unit was being fitted into a commercial oven, which was in scope. Hence it became a component of a product that is in scope, no different to a humble resistor or capacitor and therefore needed to be RoHS Compliant.

So RoHS enforcement is happening, first and foremost through companies up the supply chain who are doing what the law requires - performing due diligence on their lower level supply chain. And you will see from the next article "EU Not busting for RoHS Violations Yet" that things are happening with the Enforcement Agencies as well.

Given the way things are moving, and in keeping with our mission statement to "Support SMEs with all aspects of RoHS Compliance", RoHS and WEEE Specialists have put together a suite of low cost materials testing packages. These are designed to assist local companies in ensuring that they are producing RoHS compliant product. Details can be found at <http://www.raws.co.nz/material-composition-testing/>

In the same vein we have the go-ahead from New Zealand Trade and Enterprise to provide a series of free 1 hour seminars with question and answer sessions. These will be limited entry, constrained by the size of the venue and are for those SMEs who cannot afford to attend the full training courses. They will be held on the last Friday of each month starting in February. Details and registration will be posted shortly on [www.electronicssouth.com](http://www.electronicssouth.com) - RoHS and WEEE - upcoming events.

We also have an article in this issue from the Ministry for the Environment, outlining what is happening WEEE wise in NZ and detailing the services that they provide to support industry.

In September and October, government officials attended the RoHS training on both sides of the Tasman to up-skill on RoHS and how RoHS is being implemented in different countries. See the article later in this newsletter for more detail.

Roland Sommer  
Editor

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**EU Not Busting for RoHS Violations Yet**

Rob Spiegel -- Design News, November 1, 2006

So far, the European Union (EU) countries have not identified any products that are out of compliance with the RoHS directive that went into affect on July 1. That will likely change in coming months. This is part 1 of a two-part article

Many companies knew they were not going to be compliant until this fall. They were betting that the EU wouldn't immediately bust for RoHS violations following the July 1, 2006 deadline. Their bet was apparently right.

According to Steve Andrews from the UK's Office of Science & Innovation – the arm of the Department of Trade and Industry that is in charge of monitoring for RoHS compliance – no companies have yet been hit with RoHS violations in the UK. “A far as I'm aware, there have not been any court actions or any penalties across the EU in relation to the introduction of the RoHS directive yet,” says Andrews.

Just because the violations are not yet stacking up doesn't mean the EU isn't getting ready to start making RoHS inspections in preparation to identifying out-of-compliant products. “[The fact that no one has been charged with violations] does not mean that the various enforcement authorities have done nothing,” says Andrews. “The UK enforcement authority, NWML (National Weights and Measurements Laboratory), have been undertaking various market surveillance activities to assess overall levels of compliance. They have been testing some pieces of equipment selected at random to establish compliance.”

Andrews notes that the NWML have taken action to contact some manufacturers regarding the results of the testing. “They have also written a number of companies seeking documentary evidence of compliance,” says Andrews. “None of this action is near court proceedings, and we don't anticipate the initiation of that stage of action quite yet, but things are happening.”

Part two of this article looks at the progress EU countries are making as they prepare to test for RoHS compliance.

**Materials Testing Packages**



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See <http://www.raws.co.nz/material-composition-testing/> for more information

**Critical updates**

By Roland Sommer  
 There is now a firm date for Category 8 and 9 equipment - 2012. This is the date recommended by Dr Paul Goodman of ERA Technology in the official Review Report. Some equipment is out as far as 2018. To find out more download the report from <http://www.raws.co.nz/links/> or attend our next training course.

China RoHS has confirmed that they will not be moving their enactment date, this is firm at 1 March 2007. Other China recent and critical China news is that declaration can be

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at the subassembly level, it does not have to be at the component level. If you have EU RoHS compliant product you are 90% of the way there. If you don't, such as most Medical Device manufacturers you have a major business risk that should be keeping your CEO awake at night.

We have a feature article later in this newsletter on China RoHS.

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**Comparison of RoHS Legislations around the world**

By Roland Sommer

Managing Director RoHS and WEEE Specialists International

So far there have been no two RoHS legislations that have been identical. The major implementations to date have been the EU, China, Japan and California and Korea. There are numerous aspects of RoHS that can be legislated differently leading to non-harmonization These include:

1. Scope
2. The Restricted Substances
3. Restriction or disclosure only.
4. Maximum Concentration Values (allowable limits)
5. The level at which the restriction is applied (Component or Homogeneous material)
6. Exemptions

No doubt there are many more but these are the main ones which we will look at further.

**Scope:**

The EU RoHS provided a list of 10 categories listed in the WEEE Directive plus a number of exclusions, listed in both the

WEEE Directive and the RoHS Directive. This was a comprehensive approach but led to a number of "grey areas" that have caused much confusion and uncertainty for industry.

China have produced a 35 page, detailed list of products split into 11 broad categories. They have described the list as fully comprehensive, however at the end of each category is the catch-all "other". The notable exclusion from the China scope is the major category of Whiteware or White Goods such as Washing Machines, Clothes Dryers Refrigerators etc. The motivation for this is still unclear. They have included medical devices, which are out of scope of EU RoHS until 2012, and as a result have created a very difficult situation for many medical device manufacturers.

Japan have 7 categories that do not directly relate to either the EU or China categories, although the equipment would all be covered by the EU categories in some manner.

Korea have 10 products but intend to implement the EU's scope in the long term. They are beginning with only 10 items: TVs, refrigerators, air conditioners, laundry machines, personal computers, audio devices, cellular phones, printers, copy machines, fax machines.

California RoHS is restricted to covered electronic devices with a LCD, CRT or Plasma screen of greater than 4 inches measured diagonally. However they are proposing adopting EU ROHS in its entirety in 2010.

So as we can see, the scope of RoHS is not being implemented in a consistent manner globally.

**Restricted Substances**

The EU Restricted Lead, Cadmium, Mercury, Hexavalent Chromium, Polybrominated

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Biphenyl's (PBB) and Polybrominated Diphenyl Ethers (PBDE). All other countries have followed suit except California who have pre-existing legislation (AB302) which, without getting into technical detail, effectively performs the same function. The net effect is that banned substances are consistent across all implementations.

**Restriction or Disclosure only.**

The EU and California physically restrict the substances in the products. China, Japan and Korea are Disclosure only. "Disclosure only" means that companies still have to collect all the material composition data on their components, but instead of designing out non compliant components they have to declare, usually in the users manual where any of the restricted substances are. This is generally being used as a soft introduction for industry, with China certainly intending to physically restrict the substances in the future.

So, there is a pretty even split between the two approaches with the EU and California enacting physical restrictions and China, Japan and Korea enacting disclosure only.

**Maximum Concentration Values (Allowable limits).**

The EU set a limit of 0.1% for all substances except Cadmium which is set at 0.01%. This has been universally adopted, but with a couple of improvements. The major use of Hexavalent Chromium is in corrosion protection passivation (chromating) on metals. The way the limits are applied in the EU (weight/weight) makes it impossible to accurately measure the amount of Hexavalent Chromium. China RoHS bans all intentionally added Hexavalent Chromium in Metal treatment which very nicely gets around the issue and meets the original aim of the ban which was to prohibit the chromate treatment.

The other issue was with small parts which again are nigh on impossible to test. China RoHS, once again improved on the EU RoHS by introducing a category for components smaller than 4mm<sup>3</sup>. Components of this size and smaller, under certain conditions will be considered one Homogeneous Material (See next section) and will be tested as a whole. Subsequent to this the EU RoHS Enforcement Authorities Informal Network announced similar measures, no doubt for very pragmatic reasons.

So, apart from the issue of Hexavalent Chromium in Chromate conversion coatings, the Maximum Concentration Values are consistent across all legislations.

**The level at which the restriction is applied (Component or Homogeneous material)**

The EU took the original stance of applying the prohibitions at the Homogeneous Level. The EU also went to great pains to define "homogeneous material" which, in simple terms, is any material that cannot be mechanically disjointed in to sub- materials by unscrewing, cutting, grinding or abrasive actions. The rest of the world has followed this verbatim. The Chinese translation to English comes back with the same phraseology and examples. The original definition has now been tempered by the limitations of testing technology as outlined in the previous section with the emergence of the Chinese category of components of 4mm<sup>3</sup> or less under certain conditions.

**Exemptions:**

This is more difficult to assess as only the EU and California so far have enacted an actual restriction of the substances. Under SB20 California is adopting the EU exemptions. Reportedly they plan infrastructure to fast track exemptions locally, to combat the lengthy process that the EU exemptions need to follow. China is also

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expected to follow suit. They previously had a category of materials called EIP-D which was the list of EU Exemptions. This has been withdrawn but is expected to be re-introduced when they go ahead with phase 2, which involves the actual restriction of the substances rather than just disclosure. Interestingly China will continue to require disclosure of any substance above the limit irrespective of whether it is in an exempt application or not.

In conclusion, there are some aspects of RoHS which are not harmonizing well at a global level such as scope, but the fundamentals such as the banned substances, the limits applied and how they are applied are harmonized. Whether to start with a straight ban or to take a phased approach appears to be very much a country by country decision.

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## WEEE in New Zealand - an update

**By Helen Bolton, Ministry for the Environment.**

Want to know the latest developments and regulations on waste that might affect you and your business?

The Ministry for the Environment is the place to go.

With the current spotlight on the use of hazardous substances in electronics manufacturing, the Ministry for the Environment wants to update you on its work to support industry.

*The New Zealand Waste Strategy* sets out the proposed long-term approach to reducing waste, improving recycling and reuse of waste materials, and better management of residual waste. Released in

2002 in partnership with Local Government New Zealand, the strategy sets the overarching strategic direction of solid, liquid, gaseous and hazardous wastes in New Zealand.

The Waste Strategy signalled the Ministry for the Environment's preference for product stewardship solutions for the country's waste problems. For some wastes, a product stewardship regime can be an extremely effective solution. The volume or toxicity of certain wastes can be cut significantly by steps taken throughout the product's life cycle, from manufacture through to disposal. Waste electrical and electronic equipment (WEEE) is considered a priority special waste stream for the Ministry for the Environment.

Our approach to product stewardship is set out in the discussion document *Product Stewardship and Water Efficiency Labelling* released last year. It outlines product stewardship options to deal with wastes that are particularly hard to manage or dispose of, such as electronic waste, end-of-life vehicles, used oil. The preferred option is voluntary agreements by industry, with legislation as a backstop only if required. The discussion document can be found on the Ministry for the Environment's website

<http://www.mfe.govt.nz/publications/waste/product-stewardship-water-labelling-jul05/>.

A summary of the submissions on it are available from

<http://www.mfe.govt.nz/publications/waste/product-stewardship-water-labelling-aug06/>

The Ministry for the Environment has many roles and work areas that are of importance to the New Zealand electronics sector such as climate change, design for environment and the Resource Management Act. The Ministry's Sustainable Industry group helps industry think+plan+operate sustainably. We support and encourage sustainable industry

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initiatives, provide tools and resources to help change practice and performance and can help industry understand the impacts of government policy.

**Services we offer**

Advice:

- Supporting and encouraging [sustainable industry initiatives](#)
  - Help industry understand the impacts of government policy
  - Provide practical advice and support on major industry projects
  - Fund transition paths (eg eco-efficiency audits and improvements, and demonstration projects)

Information:

- [Simply Sustainable: tools and resources](#) - to help change practice and performance
  - Help industry to translate sustainable industry concepts into practical strategies and actions
  - Provide tools to help industry make performance improvements (eg eco-efficiency, waste management, triple bottom line reporting, and product design)
  - Resources that demonstrate sustainable industry concepts, benefits and best practice

Government:

- [Helping government to be a sustainable sector](#)
  - Work with existing central and local government programmes aimed at increasing economic growth
  - Leverage whole of government approaches to sustainable industry services

- Help government to be a sustainable sector

Some electronics manufacturers have expressed interest in the Waste Minimisation (Solids) Bill, a Members Bill introduced by the Green party, currently being considered by Parliament. Up to date information on the Bill can be found at <http://www.mfe.govt.nz/issues/waste/current-issues/index.html> . For the electronics sector, the following section of the Bill could be of interest.

*Part 10, Regulations,*

*(e) prohibiting materials from being used in the manufacture of, being part of, or being used in products sold, offered for sale or otherwise distributed in New Zealand:*

Want to know more about the Ministry for the Environment's work? Visit our website – [www.mfe.govt.nz](http://www.mfe.govt.nz) – it has comprehensive information, research, contact details and fact sheets that will help businesses.

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## RoHS Gun for Hire

Martyn de Liefde has recently completed contract work on RoHS & WEEE compliance for a large Christchurch (New Zealand) based electronics manufacturer. He is an experienced mechanical engineer who took a leading role in materials investigation & testing, specification revision, compliance documentation and systems development. Achieving RoHS compliance requires adjustments be made to many operational procedures. Most disciplines must engage with those processes, including design development, marketing, purchasing and manufacturing. Martyn is now available to assist manufacturers who intend achieving RoHS compliance and he can be contacted by email at [martyn@waka-ama.co.nz](mailto:martyn@waka-ama.co.nz).

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**But wait - there's more - see the next page for our feature article by Mike Kirschner of Design Chain Associates on China RoHS**

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**Feature Article** reprinted from Conformity magazine [www.conformity.com](http://www.conformity.com)

## **RoHS in China - An Introduction**

*Compliance with China's RoHS Implementation Will Require Patience and Persistence from Manufacturers*

**by Michael Kirschner**

*Michael Kirschner is president of Design Chain Associates, LLC, and can be reached at [mike@designchainassociates.com](mailto:mike@designchainassociates.com).*

At the end of February 2006, China promulgated a law entitled "Administration on the Control of Pollution Caused by Electronic Information Products." The purpose of this law is similar to that of the European Union's so-called RoHS Directive (2002/95/EC, "restriction of the use of certain hazardous substances in electrical and electronic equipment"). In fact, the Chinese law is simply called "China RoHS" in the industry. While there is some commonality between the RoHS requirements in the EU and those in China, there are also significant differences that must be recognized and dealt with, some in very short order.

The law was promulgated without much of the information and guidance necessary for government or industry to actually implement it. That shortcoming is being addressed by releases of secondary documents for the scope, as well as standards that define aspects missing in the text of the law.

In this article, we will describe China's new RoHS law, how it differs from what the electronics industry has been through already with the EU's RoHS Directive, and what steps your company must take in order to sell in to the domestic Chinese market.

### **Timetable for Implementation**

One of the key similarities between the EU's RoHS Directive and China's RoHS law is the list of substances targeted. But the similarities very nearly end there. In fact, as this is being written, China's law does not in fact restrict any of these materials in any products. This brings us to a key implementation difference. China's law is to be implemented in what are essentially two phases, with the first phase imposing only marking and disclosure requirements. As of March 1, 2007, products within the scope (see below) of the law must be appropriately marked, and written disclosure must be made of components within the product that contain any substances that can be considered to fall under any of the six RoHS substance classes.

[Table on next page.](#)

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Issue	EU	China
<b>Material Restrictions</b>	<b>Common</b>	
Date Law Passed	23-Feb-03	28-Feb-06
Effective Date	1-Jul-06	1-Mar-07
Marking	None	Three Marking/Disclosure Requirements: Toxic Materials, Environment-Friendly  Use Period, Packaging Materials
Scope	10 Categories, Very Broad	MII's Scope of "Electronic Information Products": Think of EU RoHS Scope + ELV, Medical, Radar, Components, Materials, certain consumables - Household Appliances, Toys, Tools...
Exemptions	Material Application Exemptions Defined; Can be petitioned	N/A - Catalog defines included products; may also define material application "exemptions" (removed from draft mark standard); no formal petition process yet
Packaging Materials	Out of Scope	Non-toxic/Recycleable, Disclosed in mark
Production Materials	Out of Scope	Restricted per material restrictions
Put On The Market	Confused and inconsistent definition across member states. Basically allows limited channel stuffing	No Channel Stuffing. Each step in the chain from dock to retail shelf must be compliant on the effective date
Testing/Certification	Not a prerequisite	Is a prerequisite (Chinese Lab test results only) for Catalog items

**Table 1: A Comparison of China RoHS and EU RoHS**

The second phase is the actual restriction of materials. The "catalogue" as described in article 18 of the law will define which products are restricted, the timeline of the restriction, and the substances to be restricted. That catalogue, which is expected to first be made available later this year, will also be subject to annual review and revision, meaning that products previously approved to incorporate RoHS substances may be subject to future restrictions. We do not yet know what types of products will be in the first, or subsequent, catalogue, or what the timeline for the restriction will be.

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Chinese officials gave industry only one year to comply with the law's marking requirements. But, as we write this, official marking standards are still not available. The release of the standard is now due on September 10, 2006, in Chinese only, and is expected to be essentially similar to the final draft of the standard released on April 18. Given the March 1, 2007 implementation date, the continued absence of official marking standards raises real concerns that any notice period of banned substances could be inadequate as well.

### Scope of China's RoHS Law

The scope of China's RoHS law has little in common with the scope of the EU's RoHS Directive. Although there is plenty of overlap between the two, China RoHS law covers many product classes that are not covered by the EU's RoHS Directive, such as semiconductor and other large scale manufacturing equipment, medical products, automotive electronics, production materials and consumables, components, and component materials.

A translation of the scope has been provided by the American Electronics Association (AeA—[www.aeanet.org](http://www.aeanet.org)) and is available on our website, [www.ChinaRoHS.com](http://www.ChinaRoHS.com). This breathtaking document of 35 pages was clearly developed with little reference or regard for the scope of the EU's RoHS Directive. And, while the scope of China's RoHS law is more detailed, it is certainly not 100% clear. For example, the scope includes washing machine motors and electronic toy circuits, but not washing machines or electronic toys. There are many other similar examples. In these cases, in fact, washing machines (and other 'white goods') and electronic toys themselves are not in scope. These components, when sold to end-users (for repair purposes, for instance), must follow the requirements of the law.

### Marking Requirements

There are three marking requirements, all of which come in to effect on March 1, 2007. They are described in the China RoHS law as follows:

1. Environment-Friendly Use Period (Article 11)
2. Hazardous Material and Contents (Article 13)
3. Packaging Materials (Article 14)

An "Industry Standard" has been issued (currently in "Final Draft" stage) that describes two of these three marking requirements in detail, and refers to another standard for the third. The Environment-Friendly Use Period and Hazardous Material and Contents marks are described in detail in the "Marking for the Control of Pollution Caused by Electronic Information Products". Figure 1 shows the choice of marks to use on your product (or in the product documentation if the product is too small to fit the mark, which must be no smaller than 5mm<sup>2</sup>).



**Figure 1: Environment-Friendly Use Period**

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The mark on the left is to be used if the product contains none of the six toxic substances; it is optional if the product meets this standard. The mark on the right is to be used if the component does contain one or more of the toxic substances. The color of the mark can be “any eye-catching color” as described in the final draft of the marking standard. The number in the middle is the “Environment-Friendly Use Period,” indicated in number of years from the date of manufacture. The definition (as translated in to English by the AeA) is considered to be:

*“the term during which toxic and hazardous substances or elements contained in electronic information products will not leak out or mutate, thus eliminating the possibility of serious environmental pollution resulting from the use by users of electronic information products or serious harm to their persons and properties resulting from such use.”*

What the Chinese government means by “Environment-Friendly Use Period” is not clear. The metals, in particular, are of course quite stable and seem to take quite a long time to “mutate.” (This writer has radios in excess of 60 years old assembled with lead-bearing solder that (with care) still function.) The expectation is that the Environment-Friendly Use Period is a very long time, longer than the useful functional life of a product. Article 12 of the law essentially asks for (Chinese) industry opinion on what this should mean. Chinese industry associations are expected to develop guidance for determining this timeframe.

Most electronic products will be required to carry the marking on the right of Figure 1, if for no other reason than the presence of these substances in (currently EU-) exempt applications (for example, lead in high-temperature solders such as those used for die attach purposes in power semiconductors). Products that contain such substances must document their presence (for example, in a table provided with the product, in a brochure or instruction manual). Table 2 illustrates the format and example contents for such a table. Note that the table must be in Chinese, not English.

Component Name	Hazardous Substances or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Chromium VI Compounds (Cr6+)	Poly-brominated Biphenyls (PBB)	Poly-brominated Diphenyl Ethers (PBDE)
2N2222A	X	O	O	O	O	O
Enclosure, Top	X	O	O	O	O	X
Main Chassis	O	O	O	X	O	O

**Table 2: Example of Hazardous Material and Contents Table**

Finally, packaging material must not contain any of the hazardous substances and must be marked on the packaging itself or, if smaller than 5x103mm<sup>2</sup> in size, in the product documentation. The Chinese marking standard to be used is GB 18455-2001.

**More on the Catalogue**

Products listed in the catalogue will be required to demonstrate tested compliance to the material restriction limits (which are common to the EU's) at the homogeneous level. At this point, only a

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limited number of Chinese labs are authorized to do the testing, and results from labs outside China will not be accepted for the time being.

China has defined, again via a final draft industry standard (entitled “Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products”), the meaning of “homogeneous” (effectively the same as the EU’s definition) and, perhaps more importantly, it’s application to electronic components and products that are in the scope of China’s RoHS law. In order to do so, the standard splits products in to three categories of Electronic Information Products (“EIP”): EIP-A, EIP-B, and EIP-C.

- EIP-A: The product consists of one or more homogenous materials
- EIP-B: Components with metal plating
- EIP-C: Small components that are difficult if not impossible to “disassemble” into constituent homogeneous materials. These are therefore considered homogeneous in and of themselves. It is reserved for components with a volume under 4mm<sup>3</sup>.

Table 3 is taken directly from our translation of the final draft of this standard (available on [www.ChinaRoHS.com](http://www.ChinaRoHS.com)) and describes maximum concentration values of the toxic substances allowed in order to determine which marking and disclosure is required as described above, as well as conformance to restrictions that will be defined in the catalogue.

Unit Category	Concentration Limits (When the requirement has a specified value, its unit is in weight percent – wt %.)
EIP-A	For a unit in this category, the concentration of Lead (Pb), Mercury (Hg), Chromium VI Compounds (Cr6+),
	Polybrominated Biphenyls (PBB), or Polybrominated Diphenyl Ethers (PBDE) (except Decabromodiphenyl Ether
	(Deca-BDE)) must not exceed 0.1%, and the concentration of Cadmium (Cd) must not exceed 0.01%.
EIP-B	A unit in this category is not allowed to have hazardous substances added intentionally, i.e any of these hazardous
	substances such as Lead (Pb), Mercury (Hg), Cadmium (Cd) and Chromium VI Compounds (Cr6+).
EIP-C	For a unit in this category, the concentration of Lead (Pb), Mercury (Hg), Chromium VI Compounds (Cr6+),
	Polybrominated Biphenyls (PBB), or Polybrominated Diphenyl Ethers (PBDE) (except Decabromodiphenyl Ether
	(Deca-BDE)) must not exceed 0.1%, and the concentration of Cadmium (Cd) must not exceed 0.01%.

**Table 3: Requirements for Concentration Limits for Hazardous Substances**

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The approach to exemptions taken in China's RoHS law is very different from that embodied in the EU's RoHS Directive, but we believe China's exemptions will ultimately end up being consistent with the EU's RoHS exemptions. Readers can expect them to be included in the catalogue and to be common with relevant EU exemptions to date. Since the catalogue is updated annually, any exemptions that have been granted by the EU can be incorporated in a timely manner.

### How to Comply

Compliance with China's RoHS law will be a greater challenge for companies with products that are outside of the scope of the EU's RoHS Directive, or for companies that do not already sell products in the EU. There are two major stages to compliance:

1. Establishing the compliance of current products
2. Ensuring continued compliance of current and future products

These require a tactical and strategic approach, respectively. In either case, the place to start is to read the law itself, and carefully review the scope.

Tactically, for products that are within the scope of China's RoHS law, the existence of at least the six toxic substances identified must be ascertained. This requires obtaining this information from every supplier of every component used in the product, assessing it for validity and completeness, and, if acceptable, storing and managing it in a manner that will enable determination of the correct mark and development and production of a correct disclosure table, as in Table 2. Based on our own experience in working with clients seeking compliance with the EU's RoHS Directive, we can say without hesitation that you will find suppliers unable to provide this information, despite the fact that it is now a legal requirement for shipment in to China, and that whatever data you do receive will contain errors.

Strategically, like requirements for the EU's RoHS Directive, compliance with China's RoHS law will place additional demands on product design engineers, supply chain managers, and procurement during the supplier and component selection and approval process. While components (both standard off-the-shelf and custom) are selected based on material properties that give rise to particular functional, mechanical, electrical, and/or thermal attributes, the materials themselves must now be considered as well. Therefore, business processes related to supplier and component selection, approval, and management must all be modified, as must the software that underlies and supports these processes, in order to ensure that components meet substance compliance requirements, and that suppliers are capable of controlling and managing the substances their products are made from.

To ease this challenge, some consulting firms have developed and implemented gap assessment and audit services that not only can ensure compliance to these types of laws, but also ensures continued compliance to ISO 9001:2000 and nascent industry standards such as IECQ HSPM QC 080000.

### Enforcement

Enforcement is the wild card with China's RoHS law. While the law itself dwells on penalties that can be imposed on any violator anywhere in the supply chain or government, and further declares that any entity can report possible violators to authorities (see Chapter 3, articles 22 through 24 and Chapter 4, article 25), China is not yet known for effective or consistent enforcement of

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environmental or intellectual property laws. However, China has significant environmental problems, and seems intent on addressing them. Events like China's hosting of the Olympics in 2008 in Beijing, which is the talk of the town, will almost certainly provide additional incentive for the Chinese government to demonstrate to the world its concern for the environment.

## Upcoming Events

November 21<sup>st</sup> Christchurch, New Zealand. ESConnectivity - RoHS Update, Christchurch Convention Centre

February 23<sup>rd</sup> Christchurch, New Zealand. "RoHS Basics". SME Seminar and discussion group, 1 ½ hrs; Location TBA

February 26<sup>th</sup> Christchurch, New Zealand. EU RoHS "The Full Picture", Commodore Copthorne Hotel, Memorial Ave - one day training course.

February 27<sup>th</sup> Christchurch, New Zealand. China RoHS and the rest of the world. Commodore Copthorne Hotel, Memorial Ave. China RoHS plus overview of USA RoHS, Japan, South Korea. ½ day training course.

March 2<sup>nd</sup> Christchurch, New Zealand. EuP and Design for Environment Principles. Commodore Copthorne Hotel, Memorial Ave. ½ day training course.

March TBA Sydney, Australia. EU RoHS "The Full Picture", one day training course

March TBA Sydney, Australia. China RoHS and the rest of the world. ½ day training course.

March TBA Sydney, Australia. EuP and Design for Environment Principles. ½ day training course.

March 30<sup>th</sup> Christchurch, New Zealand. "Homogeneous materials". SME Seminar and discussion group, 1 ½ hrs; Location TBA.

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## The Commercial Page

### **The Goodbye Chain Group**

Cost-effective RoHS and WEEE service packages.

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- Full compliance to international standards following your changes including Europe, Asia, Middle East, Australasia and the USA.
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### **University of Canterbury**

- Material composition analysis
- Micro-sectioning

[milo.kral@canterbury.ac.nz](mailto:milo.kral@canterbury.ac.nz)



### **RoHS and WEEE Specialists (International) Ltd**

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## Websites

[www.electronicssouth.com](http://www.electronicssouth.com)

[www.raws.co.nz](http://www.raws.co.nz)

[www.dti.gov.uk/sustainability/weee/](http://www.dti.gov.uk/sustainability/weee/)

[www.greensupplyline.com](http://www.greensupplyline.com)

[www.buyusa.gov/europeanunion/weee](http://www.buyusa.gov/europeanunion/weee)

[www.rohs.gov.uk](http://www.rohs.gov.uk)

<http://uk.farnell.com/static/en/rohs/>

### **The Commercial page**

Do you have a commercial RoHS or WEEE support to offer? Please contact Roland Sommer at [rsommer@raws.co.nz](mailto:rsommer@raws.co.nz) to discuss advertising here.