

A close-up, macro photograph of a green printed circuit board (PCB). The board features intricate yellow conductive traces and numerous small, blue, cylindrical components, likely capacitors or resistors, mounted on the surface. The lighting is dramatic, with a bright yellow glow in the upper left corner, creating a sense of depth and highlighting the textures of the board and components.

# Electronics Without Brominated Flame Retardants and PVC

– a Market Overview

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# EXECUTIVE SUMMARY

## ELECTRONIC WASTE IS TODAY THE FASTEST GROWING WASTE STREAM IN THE WORLD

The use of electronic products is multiplying in today's society, with technical performance and innovation ever-improving, and access to technology increasing in all parts of this world. Electronic products such as mobile phones, computers and televisions are upgraded more frequently than ever before.

This rapid turn-over of electronic products make electronic waste today the fastest growing waste stream in the world. In this waste-phase many of the high concern chemicals used in electronics are unintentionally released into the environment, with far-reaching consequences for human health as well as animal and plant life.

2 With growing awareness of the problems associated with the growing volumes of e-waste, a number of initiatives, by regulators as well as industry, have been taken to achieving production of electronics containing less hazardous chemicals.

The European Union RoHS Directive entered into force in 2006, restricting the use of a limited number of hazardous substances in electronics. RoHS has become a de facto global standard and has greatly improved chemicals management in the electronics sector. Today, many companies have moved beyond RoHS and have phased out, or are in the process of phasing out, other hazardous substances and materials such as brominated flame retardants and PVC.

## ELIMINATING THE USE OF BROMINATED FLAME RETARDANTS AND PVC

Brominated flame retardants and PVC have traditionally been widely used in electronic products. However, as scientific knowledge has increased, concern has arisen regarding the use of these. E.g., brominated flame retardants, or BFRs, tend to be particularly likely to bio-accumulate and be persistent. This means they stay in the environment for a long time and accumulate in animals and humans. Many brominated flame retardants are also toxic.

Furthermore both brominated flame retardants and PVC can potentially transform into dioxins and furans, which are some of the most toxic chemicals ever made by humans. Dioxins and furans cause severe health problems, for example cancer or birth defects.

This Market Overview demonstrates that it is technically and economically feasible to replace brominated flame retardants and PVC in a wide range of electronic products.

## THE MARKET OVERVIEW

The objective of this Market Overview is to demonstrate how large parts of the electronics industry is moving away from brominated flame retardants and PVC. It lists products on the market today free from brominated flame retardants (BFR) and PVC, as well as companies that have adopted strategies and policies to replace these by 2014.

In the EU RoHS Directive, electronic and electrical products are divided into ten categories. This market overview takes a closer look at six of these ten categories. Rather than aiming at a full overview of all the different products and producers in the market today, the Overview aims to give an insight into how far it is technically feasible to produce electronic products without brominated flame retardants and PVC in each of these six categories.

The Market Overview is based on a web-based research of official corporate information from a wide range of electronics companies, as stated on websites, in annual reports, press releases and product sheets publicly available during March and April 2010. Where further clarification of the information on websites was deemed necessary, the relevant companies were contacted directly, either via telephone or by e-mail.

The result is presented by model names, product types and companies, divided into the different RoHS categories.

Some products are listed as Free from brominated flame retardants or PVC, while other are listed as Almost Free. Almost free is used to indicate products free from brominated flame retardants or PVC with just some remaining brominated flame retardants/PVC components. For example, the Series 40 laptops from HP which are PVC-free except for the power-adaptor, or the Xbox360 Microphone from Microsoft free from brominated flame retardants but with brominated flame retardants still used in the printed circuit board.

## THE RESULTS

### SUMMARY CHART

	AVAILABLE ON THE MARKET TODAY		COMPANY PLANS 2014	
	BFR Free	PVC Free	BFR Free	PVC Free
<b>ROHS CATEGORY 1</b> LARGE HOUSEHOLD APPLIANCES	Grey	Green	Green	Green
<b>ROHS CATEGORY 2</b> SMALL HOUSEHOLD APPLIANCES	Light Green	Light Green	Green	Green
<b>ROHS CATEGORY 3</b> IT AND TELECOM EQUIPMENT	Green	Green	Green	Green
<b>ROHS CATEGORY 4</b> CONSUMER EQUIPMENT	Green	Green	Green	Green
<b>ROHS CATEGORY 5</b> LIGHTING EQUIPMENT	Green	Light Green	Green	Green
<b>ROHS CATEGORY 6</b> ELECTRICAL AND ELECTRONIC TOOLS	Grey	Grey	Grey	Grey
<b>ROHS CATEGORY 7</b> TOYS, LEISURE AND SPORTS EQUIPMENT	Light Green	Green	Green	Green
<b>ROHS CATEGORY 8</b> MEDICAL DEVICES	Grey	Grey	Grey	Grey
<b>ROHS CATEGORY 9</b> MONITORING AND CONTROL INSTRUMENTS	Grey	Grey	Grey	Grey
<b>ROHS CATEGORY 10</b> AUTOMATIC DISPENSERS	Grey	Grey	Grey	Grey

- Products free from brominated flame retardants (BFRs) or PVC as defined by industry.
- Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).
- No information found through this web-based research March/April 2010.
- Not covered by this web-based research March/April 2010.

The electronics companies in the IT and communications sector (RoHS categories 3 and 4) are at the forefront when it comes to eliminating the use of brominated flame retardants and PVC.

However, this Market Overview also demonstrates that it is technically feasible to remove brominated flame retardants and PVC from other product groups such as coffee machines, electrical toothbrushes and copy-machines.

The Market Overview covers 28 electronic companies; many of them market leaders in their sector.

- 23 of these have at least one product on the market free or almost free from brominated flame retardants.
- 25 of these have at least one product on the market free or almost free from PVC.
- Three out of four companies officially state that by 2014 they will have products totally free from brominated flame retardants and/or PVC on the market.

The Market Overview lists over 500 product-models free from brominated flame retardants and/or PVC.

- 63 of these are totally free from brominated flame retardants and PVC.
- The rest only have minor parts containing brominated flame retardants or PVC, e.g. in the external power cord or in the circuit board.

## THE WAY FORWARD

The examples provided by the companies and products listed in this Market Overview demonstrate the will, possibility and feasibility of greener electronic products.

If industry standard bodies as well as regulatory bodies demonstrate similar foresightedness and courage, and confirm and stimulate this direction, important steps are taken towards providing ever-more sustainable, greener, electronics.

# PRODUCT CATEGORIES: ALLOCATION AND FIGURES

*In the EU RoHS Directive, electrical and electronic products are divided into ten categories. This Market Overview takes a closer look at six of these ten categories, and here the result for each of these categories is summarised.*



ROHS CATEGORY 1:

## **LARGE HOUSEHOLD APPLIANCES**

There are 67 products free or almost free from PVC in this category. Examples of products free from PVC in this category are fridges, freezers, cookers, washing machines and dishwashers. One major company with many products in this category that are free from PVC, is Electrolux.

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ROHS CATEGORY 2:

## **SMALL HOUSEHOLD APPLIANCES**

Over 30 of the products found in this category are almost free from PVC. Examples of these are electrical toothbrushes, coffee machines and vacuum cleaners. Philips has all their coffee equipment products and oral care products almost free from both PVC and brominated flame retardants.



ROHS CATEGORY 3:

## **IT AND TELECOMMUNICATIONS EQUIPMENT**

155 products that are free or almost free from both brominated flame retardants and PVC is listed in this category. The category includes for example servers, PCs, hard disc drives, mobile phones, chargers, printers, laptops and LCD panels.





ROHS CATEGORY 4:  
**CONSUMER EQUIPMENT**

This category includes TVs, video cameras, projectors and digital cameras free or almost free from brominated flame retardants and PVC. Over 120 products in this category are free or almost free from both brominated flame retardants and PVC.



ROHS CATEGORY 5:  
**LIGHTING EQUIPMENT**

In this category 18 products free from brominated flame retardants have been found on today's market. One company has adopted a time-plan to have all its products free from brominated flame retardants and PVC by 2014.



ROHS CATEGORY 7:  
**LEISURE AND SPORTS EQUIPMENT**

There are two products in this category that are almost free from both brominated flame retardants and PVC. Three companies have adopted time-plans to replace all brominated flame retardants and PVC by 2014.

# COMPANY STATEMENTS REGARDING BROMINATED FLAME RETARDANTS AND PVC PHASE-OUT

RoHS has established a *de facto* global standard for the electronics industry. It has also improved chemicals management in the sector. Many companies have set ambitious targets and are working actively to phase out dangerous chemicals from their products according to the precautionary principle. In many cases the companies have specified their ambitions concerning the phase-out of brominated flame retardants and PVC. Below you will find the official statements regarding chemical management from all the companies listed in this Market Overview.

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## ACER

“Acer defines a “hazardous chemical substance” as one that is persistent, bio-accumulative, toxic, carcinogenic, or mutagenic, reproduces toxicity or causes environmental hormone disruption.”

“Acer’s prevention principles behoove us to assess any potentially hazardous or chemical substance that may have a negative impact on the environment. Thus, Acer is committed to

eliminating the use of hazardous chemical substances listed in OSPAR Plus. At the present stage, PVC and BFRs are priority hazardous chemical substances chosen for gradual elimination.”

Excerpted from [http://www.acer-group.com/public/Sustainability/sustainability\\_main04-2.htm](http://www.acer-group.com/public/Sustainability/sustainability_main04-2.htm)

“...Acer hopes that influential regulations can help to restrict PVC/BFRs; the EU directive RoHS might be the most important one. Regulations to prohibit halogen containing products are now critical. If such a regulation can be predicted, the supply chain and the market will go for non-halogen products before the effective date of regulation. This is the quick solution for widely accepted halogen-free products and for the problem that Acer encountered.”

Excerpted from [http://www.acer-group.com/public/Sustainability/sustainability\\_main04-3.htm](http://www.acer-group.com/public/Sustainability/sustainability_main04-3.htm)

## APPLE

“The greatest environmental challenge facing our industry today is the presence of arsenic, brominated flame retardants (BFRs), mercury, phthalates, and polyvinyl chloride (PVC) in products. In keeping with our philosophy over the last decade, Apple is not waiting for legislation to ban these substances.”

Excerpted from <http://www.apple.com/environment/complete-lifecycle/>

## ASUS

“ASUS defines a hazardous chemical substance as a material characterized by persistent, bio-accumulative, toxic, carcinogenic, or mutagenic features, as well as possible reproductive toxicity or environmental hormone disruption.” “ASUS has defined many halogenated compounds such as BFR, CFR, TBBP-A and PVC as hazardous substances.”

“...Acer hopes that influential regulations can help to restrict PVC/BFRs; the EU directive RoHS might be the most important one.”

*“..if BFRs or CFRs contained end of life products are not properly treated and recycled, they will release dioxin and furan during the incineration process. Dioxin compounds are stored in biological fat, are hard to be metabolized, and will be cumulated through the food chain, thus they will lead to bio-genetic lesions.”*

Excerpted from <http://csr.asus.com/english/index.aspx#35>

## CISCO

*“Material selection and chemical use in products is a growing concern of Cisco’s stakeholders and a key aspect of the global challenge of electronic waste. Cisco recognizes that hazardous substances pose a risk to the environment and our collective health and safety. Through Cisco’s Product Materials Management program, we seek to minimize the use of potentially hazardous substances in our products and operations, and ban certain substances as necessary.”*

*“Cisco is investigating substitutions for BFRs and PVC in our products.”*

Excerpted from <http://www.cisco.com/web/about/ac227/csr2009/the-environment/product-materials-content/index.html>

## DELL

*“Dell believes that if reasonable scientific grounds indicate that a substance or group of substances could pose significant environmental or human health risks, it is a substance of concern. Dell will avoid using these substances of concern and will take precautionary measures...”*

*“If alternatives are not yet viable, Dell works with its industry partners to promote industry standards and the develop-*

*“Dell’s goal is to eliminate the use of all brominated flame retardant (BFR) chemicals and polyvinyl chloride (PVC) plastics in our products worldwide.”*

*ment of reliable, environmentally sound and economically scalable technical solutions.”*

*“In line with Dell’s Chemical Use Policy, the Precautionary Principle and with consideration for Chemicals for Priority Action identified by the Convention for the Protection of the Marine Environment of the NE Atlantic (OSPAR), Dell’s goal is to eliminate the use of all brominated flame retardant (BFR) chemicals and polyvinyl chloride (PVC) plastics in our products worldwide.”*

Excerpted from <http://content.dell.com/us/en/corp/d/corp-comm/earth-greener-products-materials.aspx>

## ELECTROLUX

*“Legislation is an increasingly applied mechanism to reduce the use of hazardous substances, primarily in the EU, Japan, China and California. Electrolux is concerned about potentially hazardous substances[...] chemicals may have a negative impact on health and the environment. Consumers demand products that are safe to use. Our objective is to deliver safe products and manage production safely, while protecting the environment.”*

Excerpted from <http://www.electrolux.com/node281.aspx>

*“The Electrolux Restricted Materials List specifies the chemicals that we classify as “banned”, “restricted” and “substances of concern”. Through the Restricted Materials List (RML), Electrolux stipulates its group-wide position on chemicals in products. The RML is designed to facilitate compliance*

*“Brominated flame retardants (BFRs) and PVC[...] Over the last ten years, HP has proactively eliminated most uses of these materials from our products, with limited exceptions.”*

*to legislation such as restrictions on hazardous substances (RoHS), and registration of chemicals (such as REACH) and upcoming stricter chemicals regulations in China and California. The purpose of the list goes beyond compliance -by monitoring the presence of chemicals that may potentially constitute a risk, the Group is equipped to respond to new scientific findings.”*

Brominated flame retardants and PVC are listed on the Restricted Materials List.

Excerpted from <http://www.electrolux.com/node214.aspx>

#### **FUJITSU**

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*“Fujitsu group are committed to eliminating the use of harmful and potentially harmful substances in its products and production processes in order to minimize risk to end users and to the environment.” “Fujitsu group sets the criteria of “Fujitsu Group Specified Control Substances” and tries to avoid the use of substances that may be harmful even when their harmfulness has not yet been fully demonstrated.”*

Brominated flame retardants and PVC are listed on the Fujitsu list of controlled substances.

Excerpted from <http://www.fujitsu.com/global/about/environment/products/chemical/>

#### **HCL INFOSYSTEMS LTD.**

*“HCL believes that if reasonable scientific grounds indicate a substance (or group of substances) could pose significant environmental or human health risks, even if the full extent of harm has not yet been definitively established, precautionary measures should be taken to avoid use of the substance(s) in products unless there is convincing evidence that the risks are small and are outweighed by the benefits.*

*HCL considers these to be substances of concern that need to be eliminated in the long term and substituted or gradually phased out in the short term. HCL is strongly in favour of government legislation such as the Electronic Products Standard law which restricts/bans use of certain identified chemicals in Electronic Products. HCL identifies these substances with consideration for legal requirements as mandated by the Ministry of Environment and Forest, Government of India, international treaties and conventions, RoHS legislation etc...”*

Excerpted from [http://www.hclinfosystems.in/chemical\\_policy\\_precautionary\\_principles.html](http://www.hclinfosystems.in/chemical_policy_precautionary_principles.html)

#### **HITACHI**

*“Hitachi will “investigate and examine the effect of its business operations on the environment and seek to introduce new technologies and materials with superior functionality regarding environmental safety, energy conservation and resource conservation.” As part of Hitachi’s efforts to reduce the usage of chemicals with an impact on the environment, the company is voluntarily controlling the use of key chemical substances.”*

Excerpted from <http://www.hitachigst.com/portal/site/en/menuitem.gdfc09befd639d1d92b86b31bac4foao/>

#### **HP**

*“HP has taken a proactive approach to evaluating materials and eliminating those that pose an environmental, health or safety risk. We may restrict or eliminate substances because of customer or legal requirements or because we believe it is appropriate based on a precautionary approach. We strive to replace legally permitted materials when scientific data has established a potential health or environmental risk and*

when less risky, commercially viable alternatives are available.”

“Brominated flame retardants (BFRs) and PVC [...] Over the last ten years, HP has proactively eliminated most uses of these materials from our products, with limited exceptions.”

“HP supports the restriction of the substances proposed for the EU RoHS revision.”

Excerpted from <http://www.hp.com/hpinfo/global-citizenship/environment/productdesign/materialuse.html#BFR&PVC>

## JVC

“...we have initiated use of lead-free solder, discontinued use of PVC, and incorporated halogen-free circuit boards in order to reduce toxic chemical substances. And through our “Green Procurement” program, we have encouraged our many suppliers to also do their part in developing systems and materials that will reduce environmental impact.”

Excerpted from <http://www.jvc-victor.co.jp/english/company/envirom/index.html>

## LENOVO

“Lenovo is committed to minimizing the environmental impact of its products. In order to implement this commitment, Lenovo’s chemical and substance management policy supports a precautionary approach, ensuring Lenovo will take appropriate action even if some cause and effect relationships are not fully scientifically established. Lenovo supports the goal to phase-out 1 brominated flame retardants (BFRs) and PVC and is committed to driving its supply chain towards this goal.”

*“Lenovo supports the goal to phase-out brominated flame retardants (BFRs) and PVC and is committed to driving its supply chain towards this goal.”*

Lenovo supports the definition of “BFR/PVC free” as defined in the “iNEMI Position Statement on the ‘Definition of Low-Halogen’ Electronics (BFR/CFR/PVC-Free).”

Excerpted from [http://www.lenovo.com/social\\_responsibility/us/en/ThinkGreen\\_products.html#environment](http://www.lenovo.com/social_responsibility/us/en/ThinkGreen_products.html#environment)

## LG ELECTRONICS

“LG Electronics recognizes that existing legal requirements are not always enough to protect human health and the environment.[...] If the impact on the environment and human health is not scientifically proven, but there is enough doubt that there might be an adverse effect, LG Electronics will follow the Precautionary Principle as referred to in the 1992 Rio Declaration (UN Earth Summit).”

“...substances that must be monitored or reduced. They are PVC, BFR, Phthalates, beryllium, antimony, selenium, VOC and so on.”

Excerpted from <http://www.lg.com/global/sustainability/environment/management-of-hazardous-substances.jsp>

## MICROSOFT

“Microsoft is committed to phasing out the use of substances in its consumer hardware electronic products that pose a risk or threatened risk to human health or the environment. We try to restrict the use of such substances and that is why

*our starting point is the precautionary principle. The precautionary principle was defined in the UN Rio declaration as “Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.” We believe acting preventatively to reach a sustainable use of natural resources and a sound environment creates better products.”*

Excerpted from [http://download.microsoft.com/download/1/9/9/199b2229-c731-47b2-b420-a6806027d5d5/Restricted\\_Substances\\_for\\_Hardware\\_Products.docx](http://download.microsoft.com/download/1/9/9/199b2229-c731-47b2-b420-a6806027d5d5/Restricted_Substances_for_Hardware_Products.docx)

## **MOTOROLA**

*“Motorola is working to reduce the amount of hazardous substances in our products and to find environmentally sound alternatives, while maintaining performance and quality.”*

*“We conduct research to identify alternative materials with reduced environmental impact.”*

*“Our management of substances of concern is based principally on independent expert scientific reviews and regulatory requirements. Motorola’s experts are continually reviewing the evidence regarding chemicals and physical agents used in manufacturing. When scientific evidence about a chemical or physical agent is limited or conflicting, our experts and engineers assess potential adverse impacts, risks of substitutes, needs for precautionary measures, and technical and economic feasibility. This multi-disciplinary process may lead Motorola to take voluntary measures to reduce, phase out or eliminate substances that are not currently banned or controlled by regulatory agencies.”*

Excerpted from <http://responsibility.motorola.com/index.php/environment/products/materials/>

## **NEC**

*“NEC carefully examines environmental impact and safety in handling chemical substance, from receipt and use to disposal. NEC takes all possible measures to reduce consumption of chemical substances and to replace harmful substances with safer ones.”*

Excerpted from <http://www.nec.co.jp/eco/en/issue/chemical/index.html>

## **NINTENDO**

*“Nintendo is currently working towards eliminating the use of Polyvinyl Chloride, which has been designated as a “Substance Subject to Early Withdrawal...”*

*“Substances Subject to Early Withdrawal: Substances expected to be classified as banned substance due to the enactment of future legislation. As part of our risk management and environmental protection efforts, Nintendo plans to switch over to alternative substances and remove these substances from our products as soon as possible: PVC”*

*“Substances under Application Control: Substance that with prolonged exposure pose a potential health risk and in Nintendo’s view, require continual monitoring for their content levels:[...]BFRs”*

Excerpted from [http://www.nintendo.co.jp/corporate/en/csr/pdf/nintendo\\_csr2009e.pdf](http://www.nintendo.co.jp/corporate/en/csr/pdf/nintendo_csr2009e.pdf)

*“Nintendo is currently working towards eliminating the use of Polyvinyl Chloride.”*

**NOKIA**

*“Nokia follow the precautionary principle. Where we have reasonable grounds for concern over the possibility of severe or irreversible damage to health or the environment, we believe that lack of full scientific certainty should not be an obstacle to triggering actions to gather and assess additional data. That may lead us to voluntarily take steps, e.g. to substitute substances of concern with safer alternatives, where feasible alternatives are available.”*

Excerpted from <http://www.nokia.com/environment/our-responsibility/substance-and-material-management>

**PANASONIC**

*“With regard to polyvinyl chloride (PVC) resin, there are concerns about the generation of hazardous substances through the inappropriate disposal of waste resin and the harmful effects of an additive (phthalate ester) used to soften the resin.”*

Excerpted from [http://panasonic.net/eco/products/chemical\\_substance/case\\_study.html](http://panasonic.net/eco/products/chemical_substance/case_study.html)

*“Panasonic has been manufacturing products in line with its basic policy, which is to minimize the use of chemical substances that might adversely affect human health and the environment throughout their life cycles.”*

Excerpted from [http://panasonic.net/eco/products/chemical\\_substance/index.html](http://panasonic.net/eco/products/chemical_substance/index.html)

*“Also, although halogenated flame retardants are currently essential to protect consumers and to minimize the risk of flammability in some electronic products, we are investigating ways to replace them wherever possible.”*

*“In environmental impact assessment, impacts of hazardous substances which are emitted from components containing highly-concentrated brominated flame retardants in inap-*

*propriate treatment for collecting rare metals from disposed products such as burning off the field are concerned.”*

Excerpted from [http://panasonic.net/eco/products/chemical\\_substance/action\\_plan.html](http://panasonic.net/eco/products/chemical_substance/action_plan.html)

**PHILIPS**

*“Philips has decided to phase out the use of certain substances from a precautionary point of view, despite the fact that there is no regulation which requires us to do so.”*

*“Examples of voluntary phase-out (based on the precautionary principle)” “Polyvinyl Chloride[...]” “there are stakeholders that focus on potential environmental side effects for instance unsafe recycling, outside well equipped recycling systems.”*

*“In 2008 we have started a pilot to replace BFR in certain consumer products aiming to have BFR free consumer product models on the market year in by year-end 2008.”*

Excerpted from <http://www.philips.com/about/sustainability/environmentalresponsibility/chemicalmanagement.page>

**RICOH**

*“Major Ideas in the Ricoh Group Mid- and Long-Term Environmental Impact Reduction Goals[...] Pollution Prevention: Reduce the impact of chemical substances on the environment [...] from the fiscal 2000 level. [...] Concept: Implement risk management that covers not only impact on the environment but also impact on human health. Carry out risk management taking information on consumption, emissions, hazards, and exposure of chemical substances into consideration. Give priority to the high-risk chemical substances in reduction and replacement in order to prevent possible pollution.”*

Excerpted from <http://www.ricoh.com/environment/management/vision.html>

*“Substance group whose use for equipment is restricted by the Ricoh Group: PVC”*

Excerpted from [http://www.ricoh.com/environment/report/pdf2009/27\\_30.pdf](http://www.ricoh.com/environment/report/pdf2009/27_30.pdf)

## **SAMSUNG**

*“By acting above and beyond legal requirements, and considering cases where the scientific evidence is conflicting or not yet absolute, Samsung Electronics incorporates the Precautionary Principle into our approach for managing target substances.”*

*“Samsung Electronics believes that the enactment of legislation such as updated EU RoHS Directives will play an important role in addressing problems relating to the elimination of PVC and BFRs use. Through this legislation, the industry-wide replacement of PVC and BFRs could be expedited. Samsung Electronics will comply if the EU decides to include PVC and BFRs as restricted substances in the RoHS 2.0 amendment.”*

Excerpted from <http://www.samsung.com/us/aboutsamsung/sustainability/environment/chemicalmanagement/policyontargetsubstances.html>

## **SHARP**

*“Sharp develops products in the spirit of the 1992 Rio Declaration’s Precautionary Principle.” “Sharp will proactively support revised EU’s RoHS directive for the ban of Polychlorinated biphenyls, Polychlorinated naphthalene (Only polychlorinated naphthalene with three chlorines and more), Short chain chlorinated paraffin, Polychlorinated Terphenyls, and Hexabromocyclododecane. In addition to substances whose harmful effects have been scientifically proven, Sharp gathers data on other hazardous substances that*

*are suspected of having harmful environmental and health effects and, where necessary, bans or sets goals for the reduction of these.”*

*“Sharp makes its utmost efforts to reduce the use of PVC and phthalates [...]*

*Sharp is committed to eliminating BFRs from all products[...]”*

*“It has been suggested that improper treatment of polyvinyl chloride (PVC) and phthalates after disposal can have harmful environmental and health effects.[...] Sharp makes its utmost efforts to reduce the use of PVC and phthalates according to the Precautionary Principle.”*

*“It has been suggested that improper treatment of brominated flame retardants (BFRs) and antimony compounds after disposal can have harmful environmental and health effects. [...] Sharp is committed to eliminating BFRs from all products[...] according to the Precautionary Principle.”*

Excerpted from [http://www.sharp-world.com/corporate/eco/data\\_list/chem.html](http://www.sharp-world.com/corporate/eco/data_list/chem.html)

## **SONY**

*“Sony defines “Environment-related Substances to be Controlled” (called “Controlled Substances” hereafter) as certain chemicals that Sony has determined to have significant environmental impact on both humans and the global environment, including substances that may not be*



controlled by laws. Sony prohibits the use of these substances in products or phases them out wherever a viable substitute which meets all product quality and technical requirements is available.”

“PVC may pose a risk to the environment if disposed of improperly. Another concern is that PVC might contain various other chemical substances, including plasticizers and stabilizers, which could pose risks to the environment and human health. While PVC currently is not regulated by any laws that apply to chemical substances used in electronics products, Sony has been promoting the use of its alternatives.”

“Sony is promoting the use of alternatives to BFRs, which can generate harmful substances if treated improperly after disposal.”

Excerpted from <http://www.sony.net/SonyInfo/csr/environment/chemical/products/index.html>

## SONY ERICSSON

“At Sony Ericsson[...] we decided to use alternatives for fire protection, mainly because of the risk that BFRs form dioxins in uncontrolled incineration. It is also important to note that 99% of the use of BFRs was in cables, casings and boards.”

“At Sony Ericsson we have taken actions to remove Polyvinyl Chloride (PVC) from our products.”

“Sony Ericsson is concerned about PVC because it releases hydrochloric acid and dioxins when it is burned. Dioxins are highly toxic and accumulate in the fatty tissues of animals, especially oily fish such as salmon. Dioxins are known mutagens and carcinogens and also cause serious skin diseases.”

Excerpted from <http://www.sonyericsson.com/cws/companyandpress/sustainability/consciousdesign?cc=se&lc>

*“At Sony Ericsson[...] we decided to use alternatives for fire protection, mainly because of the risk that BFRs form dioxins in uncontrolled incineration...”*

## TOSHIBA

“Toshiba PC’s basic policy regarding the reduction and / or elimination of hazardous substances is based on the “precautionary principle” and the “substitution principle”. “We will replace hazardous substances with alternatives, whether those hazardous substances are restricted by the law or not.” “We will endeavor to replace the hazardous substances with alternatives, although the hazardous property has not yet been proved.”

Excerpted from [http://www.toshiba.co.jp/pc\\_env/eco/lca.html#comm5](http://www.toshiba.co.jp/pc_env/eco/lca.html#comm5)

## VERY PC

“VeryPC know that environmentally friendly computing doesn’t have to mean compromising on performance. [...] Our energy efficient range of home and business computers are built with smaller, cleaner components to reduce the embedded carbon footprint...”

Excerpted from <http://www.very-pc.co.uk/>

## WIPRO

*“The core mission of Wipro Green Computing is to provide to our customers, products that are safe for the environment. Preserving the environment for future generations is our foremost duty[...] Wipro vision is to avoid the use of substances in its products that could seriously harm the environment or human health.”*

*“Wipro further believes that if reasonable scientific grounds indicate a substance (or group of substances) could pose significant environmental or human health risks, even if the full extent of harm has not yet been definitively established, precautionary measures should be taken to avoid use of the substance(s) in products unless there is convincing evidence that the risks are small and are outweighed by the benefits. Wipro considers these to be substances of concern that need*

*to be eliminated in the long term and substituted or gradually phased out in the short term. Wipro identifies substances for elimination after studying the harmful substances recommended by the Ministry of Environment and Forest, Government of India, international treaties and conventions, RoHS legislation etc. as applicable to its area of operations.”*

Excerpted from [http://www.wiprogreentech.com/chemicals\\_policy\\_and\\_management.html](http://www.wiprogreentech.com/chemicals_policy_and_management.html)

*“Wipro’s Chemical Precautionary Policy is focused on continually identifying the chemicals in components based on OSPAR list of chemicals.”*

Excerpted from [http://www.wiprogreentech.com/chemical\\_management.html](http://www.wiprogreentech.com/chemical_management.html)

# MARKET OVERVIEW LIST

This Market Overview lists products free from brominated flame retardants (BFRs) and PVC on the market today, as well as companies that have adopted time-plans to replace these by 2014.

The result is presented by model names, product types and companies, divided into six of the categories within the EU RoHS Directive.

Products are listed as either free from brominated flame retardants or PVC, or as almost free with only minor parts containing brominated flame retardants or PVC, e.g. in the external power cord or in the circuit board.



# RoHS CATEGORY 1

## LARGE HOUSEHOLD APPLIANCES



COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Electrolux	Refrigerators	ERC32255W					
Electrolux	Refrigerators	ERC32253W					
Electrolux	Refrigerators	ERC37255W					
Electrolux	Refrigerators	ERC37255X					
Electrolux	Refrigerators	ERC37254W					
Electrolux	Refrigerator/Freezer	ERB34256W					
Electrolux	Refrigerator/Freezer	ERB35256W					
Electrolux	Refrigerator/Freezer	ERB34254W					
Electrolux	Refrigerator/Freezer	ERB34255W					
Electrolux	Refrigerator/Freezer	ERB35255W					
LG Electronics	Refrigerators						
Electrolux	Freezers	EUC31255X					
Electrolux	Freezers	EUC31255W					
Electrolux	Freezers	EUC31254W					
Electrolux	Freezers	EUC26250W					
Electrolux	Freezers	EUC26255W					
Electrolux	Freezers	EUC31250W					
Electrolux	Freezers	EUC31252X					
Electrolux	Freezers	EUC31255X					
Electrolux	Freezers	EUF29403W					
Electrolux	Washing Machines	EWF12440W					
Electrolux	Washing Machines	EWF14580W					
Electrolux	Washing Machines	EWF16580W					
Electrolux	Washing Machines	EWF147440W					
LG Electronics	Washing Machines	ALL					
Electrolux	Clothes Dryers	EDC77550W					
LG Electronics	Clothes Dryers	ALL					
Electrolux	Dish Washers	ESF66610W					
Electrolux	Cooker	EKC60010W					
Electrolux	Cooker	EKC60010X					



Products free from brominated flame retardants (BFRs) or PVC as defined by industry.



No information found through this web-based research March/April 2010.



All products within the category from this company are completely free from brominated flame retardants or PVC.



Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).



Not covered by this web-based research March/April 2010.

ALL

All new products put on the market, or that will be on the market by 2014, within the category from this company are free or almost free from brominated flame retardants or PVC.

# RoHS CATEGORY 1 LARGE HOUSEHOLD APPLIANCES

1

COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Electrolux	Cooker	EKC60011W	■	■		■	■
Electrolux	Cooker	EKC60014W	■	■		■	■
Electrolux	Cooker	EKC70010W	■	■		■	■
Electrolux	Cooker	EKC70010X	■	■		■	■
Electrolux	Cooker	EKC70011W	■	■		■	■
Electrolux	Cooker	EKC70014W	■	■		■	■
Electrolux	Cooker	EKE60010W	■	■		■	■
Electrolux	Cooker	EKE60012W	■	■		■	■
Electrolux	Cooker	EKE70010W	■	■		■	■
Electrolux	Cooker	EKE70012W	■	■		■	■
LG Electronics	Microwave	ALL	■	■		■	★
Panasonic	Ventilating fans	17C7 (+30 other models)	■	■		■	■
LG Electronics	Air Conditioners	ALL	■	■		■	★

■ Products free from brominated flame retardants (BFRs) or PVC as defined by industry.

■ No information found through this web-based research March/April 2010.

★ All products within the category from this company are completely free from brominated flame retardants or PVC.

■ Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).

■ Not covered by this web-based research March/April 2010.

ALL All new products put on the market, or that will be on the market by 2014, within the category from this company are free or almost free from brominated flame retardants or PVC.

# 2

## RoHS CATEGORY 2 SMALL HOUSEHOLD APPLIANCES



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COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
LG Electronics	Vacuum Cleaners	ALL	■	■		★	■
Philips	Coffee equipment	ALL	★	★		★	★
Philips	Oral care	ALL	★	★		★	★
Panasonic	Shaver	ES6500 (+3 other models)	■	■		■	■
Panasonic	Leg hair shaver	ES795	■	■		■	■
Panasonic	Nail Polisher	ES2401	■	■		■	■
Panasonic	Heel Buffer	ES2502	■	■		■	■
Panasonic	Toothbrushes	EW-SA10	■	■		■	■
Panasonic	Nose hair trimmer	ER413	■	■		■	■
Panasonic	Ear hair trimmer	ER402	■	■		■	■
Panasonic	Baby hair trimmer	ER3300	■	■		■	■
Panasonic	Pet hair trimmer	ER803	■	■		■	■
Panasonic	Eyelash curlers	EH2321 (+5 other models)	■	■		■	■
Panasonic	Ladies shavers	ES2235 (+1 other models)	■	■		■	■
Panasonic	Epilators	ES2011 (+2 other models)	■	■		■	■
Panasonic	Facial trimmers	ES2105 (+5 other models)	■	■		■	■
Panasonic	Household Body Com- position Balance Monitor	EW-FA30	■	■		■	■

■ Products free from brominated flame retardants (BFRs) or PVC as defined by industry.  
 ■ No information found through this web-based research March/April 2010.

★ All products within the category from this company are completely free from brominated flame retardants or PVC.

■ Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).  
 ■ Not covered by this web-based research March/April 2010.

ALL All new products put on the market, or that will be on the market by 2014, within the category from this company are free or almost free from brominated flame retardants or PVC.



# RoHS CATEGORY 3 IT AND TELECOMS EQUIPMENT

COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Apple	Servers	Xserve, MB449	■	■		★	★
Apple	Servers	Mac mini with Snow leopard server, MC408	■	■		■	■
Cisco	Servers	ALL	■	■		★	★
NEC	Servers	ALL	★	★		★	★
HP	Servers	ALL	★	★		★	★
HP	PCs	ALL	★	★		★	★
HP	PCs	Compaq 800of Elite	■	■		★	★
Very PC	PCs	ALL	★	★		★	★
Very PC	PCs	BroadLeaf BL32-B-E53	■	■		■	■
Very PC	PCs	BroadLeaf BL32-B-E84	■	■		■	■
Very PC	PCs	BroadLeaf BL32-H-E53	■	■		■	■
Wipro	PCs	Greenware	■	■		★	★
Lenovo	PCs	ALL	★	★		★	★
HCL Infosystems Ltd.	PCs	ALL	■	■		★	★
Fujitsu	PCs	ALL	★	★		★	★
Dell	PCs	ALL	★	★		★	★
Dell	PCs	Studio Hybrid	■	■		■	■
Dell	PCs	OptiPlex 760 USFF	■	■		■	■
Dell	PCs	OptiPlex 960	■	■		■	■
Acer	PCs	Veriton M490G	■	■		■	■
Acer	PCs	Veriton X490G	■	■		■	■
LG Electronics	PCs	ALL	■	■		★	★
Panasonic	Notebook/laptop	ALL	■	★		★	★
Toshiba	Notebook/laptop	ALL	★	★		★	★
Toshiba	Notebook/laptop	Portege R600/SS RX2	■	■		■	■
Toshiba	Notebook/laptop	Portege A600/ NX	■	■		■	■
Apple	Mac Book Pro	ALL	★	★		★	★
Apple	Mac Book Pro	MB990,991	■	■		■	■
Apple	Mac Book Pro	MC118	■	■		■	■
Apple	Mac Book Pro	MB985/986	■	■		■	■

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■ Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).

■ Not covered by this web-based research March/April 2010.

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# 3

## RoHS CATEGORY 3 IT AND TELECOMS EQUIPMENT

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COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Apple	Mac Book Pro	MC226	■	■		■	■
Apple	Mac Book Air	MC233,234	■	■		■	■
Apple	Notebook/laptop	MacBook MC207	★	■		★	★
Apple	iMac	iMac	■	■		★	★
Apple	iPad	MB292, MB293, MB294, MC349, MC496, MC497	★	★		★	★
HCL Infosystems Ltd.	Notebook/laptop	ME Series 40	■	■		★	★
HP	Notebook/laptop	ALL	★	★		★	★
HP	Notebook/laptop	ProBook 5310m	■	■		★	★
Acer	Notebook/laptop	Aspire Timeline 3811TZ	■	■		★	★
Acer	Notebook/laptop	Aspire Timeline 3811TZG	■	■		■	■
Acer	Notebook/laptop	Aspire Timeline 3811T	■	■		■	■
Acer	Notebook/laptop	Asprie Timeline 3811TG	■	■		■	■
Dell	Notebook/laptop	ALL	★	★		★	★
Dell	Notebook/laptop	Latitude Z Laptop	■	■		■	■
Dell	Notebook/laptop	Adamo XPS 13 laptop	■	■		■	■
Dell	Notebook/laptop	Latitude E4200	■	■		■	■
Nokia	Mini laptop	Booklet 3G	■	■		★	★
Asus	Notebook/laptop	Eee PC 900A	■	■		■	■
LG Electronics	Notebook/laptop	ALL	★	★		★	★
Lenovo	Notebooks	ALL	★	★		★	★
Samsung	Notebooks	ALL	■	■		★	★
Sony	Laptop	ALL (VAIO)	■	■		■	■
Sony	Laptop	VAIO L-series	■	■		■	■
Sony	Laptop	VAIO P-series	■	■		■	■
Sony	Laptop	VAIO X-series	■	■		■	■
Sony	Laptop	VAIO T-series	■	■		■	■
Sony	Laptop	VAIO SR-series	■	■		■	■
Sony	Laptop	VAIO A-series	■	■		■	■
Sony	Laptop	VAIO F-series	■	■		■	■
Sony	Laptop	VAIO S-series	■	■		■	■

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 ■ No information found through this web-based research March/April 2010.

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■ Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).  
 ■ Not covered by this web-based research March/April 2010.

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# RoHS CATEGORY 3 IT AND TELECOMS EQUIPMENT

# 3

COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Sony	Laptop	VAIO W-series	■	■		■	■
Sony	Laptop	VAIO Y-series	■	■		■	■
Sony	Laptop	VAIO Z-series	■	■		■	■
Sony	Laptop	VAIO N-series	■	■		■	■
Sony	Laptop	VAIO FW-series	■	■		■	■
Sony	Laptop	VAIO J-series	■	■		■	■
Sony	Laptop	VAIO G-series	■	■		■	■
Sony	Laptop	VAIO B-series	■	■		■	■
Lenovo	Displays	ALL	■*	■*		■*	■*
Lenovo	Displays	ThinkVision L2440x Wide	■	■		■	■
Lenovo	Displays	ThinkVision L2251x Wide	■	■		■	■
HCL Infosystems Ltd.	Displays	ALL	■	■		■*	■*
Samsung	LCD-panel	ALL	■	■*		■	■*
Acer	LCD Display	G24	■	■		■*	■*
Acer	LCD Display	V174	■	■		■	■
Acer	LCD Display	B174	■	■		■	■
Acer	LCD Display	V194HQ	■	■		■	■
Acer	LCD Display	V194HQ	■	■		■	■
Acer	LCD Display	B193	■	■		■	■
Acer	LCD Display	V194W	■	■		■	■
Acer	LCD Display	B194W	■	■		■	■
Acer	LCD Display	V204H	■	■		■	■
Acer	LCD Display	V224HQ	■	■		■	■
Acer	LCD Display	V224W	■	■		■	■
Acer	LCD Display	B224W	■	■		■	■
Acer	LCD Display	V234H	■	■		■	■
Acer	LCD Display	B234HU	■	■		■	■
Acer	LCD Display	B244W	■	■		■	■
Acer	LCD Display	V244W	■	■		■	■
Apple	Cinema display, MB 382	ALL	■	■		■*	■*
Dell	Flat Panel displays	ALL	■	■		■*	■*

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■ Products free from brominated flame retardants (BFRs) or PVC as defined by industry.

■ No information found through this web-based research March/April 2010.

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■ Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).

■ Not covered by this web-based research March/April 2010.

ALL All new products put on the market, or that will be on the market by 2014, within the category from this company are free or almost free from brominated flame retardants or PVC.

# 3

## RoHS CATEGORY 3 IT AND TELECOMS EQUIPMENT

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COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Dell	LED Flat Panel displays	G2210	■	■		■	■
Dell	LED Flat Panel displays	G2410	■	■		■	■
HP	LCD Display	Compaq LA22f	■	■		★	★
HP	LCD Display	Compaq LE19f	■	■		■	■
HP	LCD Display	2009m	■	■		■	■
Asus	LCD Display	VK 193T LCD Monitor	■	■		■	■
LG Electronics	Displays	ALL	■	■		★	★
HP	Mouse	Wireless Eco-Comfort Mouse	■	■		★	★
Lenovo	Keyboard	ALL	★	★		★	★
Lenovo	Mouse	ALL	★	★		★	★
Sharp	Colour Multifunctional Printer	AL-2020	■	■		★	★
Sharp	Multifunctional Copier and Print	AL-2035	■	■		■	■
Sharp	Copier	AL-2050	■	■		■	■
Sharp	Multifunctional Copier and Print	AL-2060	■	■		■	■
Sharp	Copier Printer	AR-203E	■	■		■	■
Sharp	Copier Printer	AR-208D	■	■		■	■
Sharp	Multifunctional Copier and Print	AR-208S	■	■		■	■
Sharp	Multifunctional Copier and Print	AR-A208	■	■		■	■
Sharp	Multifunctional Copier and Print	AR-A208F	■	■		■	■
Sharp	Multifunctional Copier and Print	AR-A208N	■	■		■	■
Sharp	Multifunctional Copier and Print	AR-A208X	■	■		■	■
Sharp	Multifunctional Copier and Print	AR-M200	■	■		■	■
Sharp	Multifunctional Copier and Print	AR-M201	■	■		■	■

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 ■ No information found through this web-based research March/April 2010.

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■ Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).  
 ■ Not covered by this web-based research March/April 2010.

ALL All new products put on the market, or that will be on the market by 2014, within the category from this company are free or almost free from brominated flame retardants or PVC.

# RoHS CATEGORY 3 IT AND TELECOMS EQUIPMENT

# 3

COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Sharp	Multifunctional Copier and Print	AL-1633					
Sharp	Digital Laser Printer Copier	AL-1644					
Sharp	Black and white printer	AR-M165					
Sharp	Black and white printer	AR-M207					
Sharp	Multifunctional Copier and Print	AR-5320D					
Sharp	Digital Copier Printer	AR-5316E					
Sharp	Digital Copier Printer	AR-5320E					
Sharp	Digital Copier Printer	AR-164G					
Sharp	Digital Copier Printer	AR-3020D					
Sharp	Digital Copier Printer	AR-3818N					
Sharp	Digital Copier Printer	AR-3818S					
Sharp	Digital Copier Printer	AR-3821D					
Sharp	Digital Copier Printer	AR-3821N					
Sharp	Black and white Multi-functional Copier and Print	AR-5516					
Sharp	Black and white Multi-functional Copier and Print	AR-5516D					
Sharp	Black and white Multi-functional Copier and Print	AR-5516N					
Sharp	Black and white Multi-functional Copier and Print	AR-5520					
Sharp	Black and white Multi-functional Copier and Print	AR-5520D					
Sharp	Black and white Multi-functional Copier and Print	AR-5520N					
Sharp	Printer	MX-M550N					
Sharp	Multifunctional Copier and Print	MX-M550UK					
Sharp	Multifunctional Copier and Print	MX-M620N					
Sharp	Multifunctional Copier and Print	MX-M620UK					

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Products free from brominated flame retardants (BFRs) or PVC as defined by industry.

No information found through this web-based research March/April 2010.

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Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).

Not covered by this web-based research March/April 2010.

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# 3

## RoHS CATEGORY 3 IT AND TELECOMS EQUIPMENT

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COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Sharp	Copier	MX-M700N					
Sharp	Multifunctional Copier and Print	MX-M700UK					
Sharp	Colour Multifunctional Printer	DX-C310					
Sharp	Colour Multifunctional Printer	DX-C311					
Sharp	Colour Multifunctional Printer	DX-C400					
Sharp	Colour Multifunctional Printer	DX-C401					
Sharp	Colour Multifunctional Printer	MX-C310					
Sharp	Colour Multifunctional Printer	MX-C311					
Sharp	Colour Multifunctional Printer	MX-C380					
Sharp	Colour Multifunctional Printer	MX-C381					
Sharp	Color Copier	MX-C400					
Sharp	Color Copier	MX-3600FN					
Sharp	Colour Multifunctional Printer	MX-4100FN					
Sharp	Colour Multifunctional Printer	MX-4100N					
Sharp	Colour Multifunctional Printer	MX-4101FN					
Sharp	Colour Multifunctional Printer	MX-4101N					
Sharp	Colour Multifunctional Printer	MX-5000FN					
Sharp	Colour Multifunctional Printer	MX-5000N					
Sharp	Colour Multifunctional Printer	MX-5001FN					

Products free from brominated flame retardants (BFRs) or PVC as defined by industry.

No information found through this web-based research March/April 2010.

All products within the category from this company are completely free from brominated flame retardants or PVC.

Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).

Not covered by this web-based research March/April 2010.

**ALL** All new products put on the market, or that will be on the market by 2014, within the category from this company are free or almost free from brominated flame retardants or PVC.

# RoHS CATEGORY 3 IT AND TELECOMS EQUIPMENT

# 3

COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Sharp	Colour Multifunctional Printer	MX-5001N	■	■		■	■
Sharp	Colour Multifunctional Printer	MX-2600FG	■	■		■	■
Sharp	Colour Multifunctional Printer	MX-2600FN	■	■		■	■
Sharp	Colour Multifunctional Printer	MX-2600G	■	■		■	■
Sharp	Colour Multifunctional Printer	MX-2600N	■	■		■	■
Sharp	Colour Multifunctional Printer	MX-3100FG	■	■		■	■
Sharp	Colour Multifunctional Printer	MX-3100FN	■	■		■	■
Sharp	Colour Multifunctional Printer	MX-3100G	■	■		■	■
Sharp	Colour Multifunctional Printer	MX-3100N	■	■		■	■
Toshiba	Multifunctional Printer	E-STUDIO 165	■	■		★	★
Ricoh	Digital duplicator	ALL	■	■		■	★
Ricoh	Digital duplicator	DX3240	■	■		■	■
Ricoh	Digital duplicator	DX3440	■	■		■	■
Ricoh	Digital duplicator	PriPort HQ9000	■	■		■	■
Ricoh	Digital duplicator	Aficio 3224C/3232C	■	■		■	■
Ricoh	Digital duplicator	PriPort DX 4242	■	■		■	■
Ricoh	Digital duplicator	PriPort DX 4640PD	■	■		■	■
Ricoh	Digital duplicator	PriPort HQ7000	■	■		■	■
Dell	Printers	ALL Blue Angel-certified	■	■		★	★
Dell	Printers	Color Laser 1320c	■	■		■	■
Sony	Photo printer	DPP-FP67/FP77/FP97	■	■		■	■
Panasonic	Mobile Phones	ALL	★	★		★	★
Panasonic	Mobile Phones	P906i (+6 other models)	■	■		■	■
LG Electronics	Mobile Phones	ALL	★	★		★	★

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■ Products free from brominated flame retardants (BFRs) or PVC as defined by industry.

■ No information found through this web-based research March/April 2010.

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■ Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).

■ Not covered by this web-based research March/April 2010.

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## RoHS CATEGORY 3 IT AND TELECOMS EQUIPMENT

COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
LG Electronics	Mobile Phones	GD510	■	■		★	★
Toshiba	Mobile Phones	T-01A	■	★		★	★
Toshiba	Mobile Phones	Biblio	■	■		■	■
Toshiba	Mobile Phones	T002	■	■		■	■
Toshiba	Mobile Phones	T001	■	■		■	■
Toshiba	Mobile Phones	W65T	■	■		■	■
Toshiba	Mobile Phones	W64T	■	■		■	■
Toshiba	Mobile Phones	Sportio W62T	■	■		■	■
Toshiba	Mobile Phones	832T	■	■		■	■
Toshiba	Mobile Phones	Fanfun Petit	■	■		■	■
Toshiba	Mobile Phones	Fanfun2 830T	■	■		■	■
Toshiba	Mobile Phones	824T	■	■		■	■
Toshiba	Mobile Phones	823T	■	■		■	■
Nokia	Mobile Phones	ALL	★	★		★	★
Nokia	Mobile Phones	1616	■	■		■	■
Nokia	Mobile Phones	7230	■	■		■	■
Nokia	Mobile Phones	2220 Slide	■	■		■	■
Nokia	Mobile Phones	2320 Classic	■	■		■	■
Nokia	Mobile Phones	2323 Classic	■	■		■	■
Nokia	Mobile Phones	2330 Classic	■	■		■	■
Nokia	Mobile Phones	2720 Fold	■	■		■	■
Nokia	Mobile Phones	3710 Fold	■	■		■	■
Nokia	Mobile Phones	3711 Fold	■	■		■	■
Nokia	Mobile Phones	3806	■	■		■	■
Nokia	Mobile Phones	5330 Mobile TV Edition	■	■		■	■
Nokia	Mobile Phones	5630 XpressMusic	■	■		■	■
Nokia	Mobile Phones	6260 Slide	■	■		■	■
Nokia	Mobile Phones	6303i Classic	■	■		■	■
Nokia	Mobile Phones	6350	■	■		■	■
Nokia	Mobile Phones	6700 Classic	■	■		■	■
Nokia	Mobile Phones	6700 slide	■	■		■	■
Nokia	Mobile Phones	6710 Navigator	■	■		■	■
Nokia	Mobile Phones	6720 Classic	■	■		■	■
Nokia	Mobile Phones	6730 Classic	■	■		■	■

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■ No information found through this web-based research March/April 2010.

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■ Not covered by this web-based research March/April 2010.



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# RoHS CATEGORY 3 IT AND TELECOMS EQUIPMENT



COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Nokia	Mobile Phones	7100 Supernova	█	█		█	█
Nokia	Mobile Phones	7020	█	█		█	█
Nokia	Mobile Phones	E52	█	█		█	█
Nokia	Mobile Phones	E55	█	█		█	█
Nokia	Mobile Phones	E72	█	█		█	█
Nokia	Mobile Phones	N900	█	█		█	█
Nokia	Mobile Phones	X3	█	█		█	█
Nokia	Mobile Phones	C5	█	█		█	█
Sony Ericsson	Mobile Phones	ALL	█	█		█	█
Apple	Mobile Phones	ALL	█	█		█	█
Sharp	Mobile Phones	ALL	█	█		█	█
Motorola	Mobile Phones	ALL	█	█		█	█
Motorola	Mobile Phones	Motocubo A45 eco	█	█		█	█
Asus	Mobile Phones	P565 PDA Phone	█	█		█	█
Samsung	Cellular telephones	Tobi GT-S3030	█	█		█	█
Samsung	Mobile Phones	ALL	█	█		█	█
Samsung	Mobile Phones	SGH-F268	█	█		█	█
Samsung	Mobile Phones	Blue Earth GT-S7550	█	█		█	█
Samsung	Mobile Phones	Reclaim M560	█	█		█	█
Toshiba	5000 series digital business telephone	DP5130-SDL	█	█		█	█
Toshiba	5000 series digital business telephone	DP5132-SD, DP5032-SD (Non backlit)	█	█		█	█
Toshiba	5000 series digital business telephone	DP5122-SD, DP5022-SD (Non backlit)	█	█		█	█
Toshiba	5000 series digital business telephone	DP-5018-S	█	█		█	█
Toshiba	5000 series digital business telephone	DP5008	█	█		█	█
Toshiba	5000 series digital business telephone	LM5110	█	█		█	█
Toshiba	5000 series digital business telephone	KM5020	█	█		█	█
Toshiba	5000 series digital business telephone	IDM5060	█	█		█	█

 Products free from brominated flame retardants (BFRs) or PVC as defined by industry.  
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# 3

## RoHS CATEGORY 3 IT AND TELECOMS EQUIPMENT

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COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Dell	Telephones	Mini 3i	■	■		★	★
Motorola	Charger Mobile Phones	P680	■	■		★	★
Motorola	Charger Mobile Phones	P683	■	■		■	■
Motorola	Charger Mobile Phones	P390	■	■		■	■
Motorola	Charger Mobile Phones	P393	■	■		■	■
LG Electronics	Optical disc drive	RU1S-1	■	■		★	★
LG Electronics	Optical disc drive	R1S-1	■	■		■	■
LG Electronics	Optical disc drive	JR11-1	■	■		■	■
LG Electronics	Optical disc drive	R5	■	■		■	■
LG Electronics	Optical disc drive	RU2	■	■		■	■
LG Electronics	Optical disc drive	JD11	■	■		■	■
Lenovo	Optical Drive	ALL	★	★		★	★
Hitachi	Disk Drives	Deskstar 7K2000	■	■		■	■
Hitachi	Disk Drives	Deskstar 7K1000.C	■	■		■	■
Hitachi	Disk Drives	Ultrastar A7K2000	■	■		■	■
Hitachi	Disk Drives	Travelstar 7K500	■	■		■	■
Hitachi	Disk Drives	Travelstar 5K500.B	■	■		■	■
Hitachi	Disk Drives	Cinemastar 7K1000.C	■	■		■	■
Hitachi	Disk Drives	Cinemastar 5K1000	■	■		■	■
Toshiba	Hard Disk Drive	MK8003MTD	■	■		★	★
Toshiba	Hard Disk Drive	MK4085GSX	■	■		■	■
Toshiba	Hard Disk Drive	MK5056GSY	■	■		■	■
Fujitsu	Hard Disk Drive	MBD2-RC	■	■		★	★
Fujitsu	Hard Disk Drive	MBE2-RC	■	■		★	★
Hitachi	Hard Disk Drive	CinemaStar C5K500	■	■		■	■
Samsung	Hard Disk Drive	Spinpoint M7	■	■		★	★
Sony	Navigator	NV-U3DV/NV-U75V /NV-U75/NV-U3C	■	■		■	■
Asus	Motherboard	P5Q Deluxe mother- board	■	■		■	■
Asus	Serverboard	Z8PE-D12X Server- board	■	■		■	■

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# RoHS CATEGORY 4 CONSUMER EQUIPMENT

# 4

COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Asus	Graphics card	EAH3650 silent Graphics card	■	■		■	■
Toshiba	LCD TV	CELL REGZA 55X1	■	■	★	★	
LG Electronics	LCD TV	ALL (Europe)	■	■	★	★	
Samsung	LCD TV	ALL	■	■	■	★	
Sharp	LCD TV	LC-13SX7A	■	■	★	★	
Sharp	LCD TV	LC-15SX7A	■	■	■	■	
Sharp	LCD TV	LC-65GX5	■	■	■	■	
Sharp	LCD TV	LC-52GX5	■	■	■	■	
Sharp	LCD TV	LC-46GX5	■	■	■	■	
Sharp	LCD TV	LC-42GX5/GX50	■	■	■	■	
Sharp	LCD TV	LC-37GX5/GX50	■	■	■	■	
Sharp	LCD TV	LC-32GX5	■	■	■	■	
Sharp	LCD TV	LC-32GH5/GH50	■	■	■	■	
Sharp	LCD TV	LC-26GH5	■	■	■	■	
Sharp	LCD TV	LC-65RX5-T/-B	■	■	■	■	
Sharp	LCD TV	LC-52RX5-T/-B	■	■	■	■	
Sharp	LCD TV	LC-46RX5-T/-B	■	■	■	■	
Sharp	LCD TV	LC-42DS5-B/-W/-R	■	■	■	■	
Sharp	LCD TV	LC-37DS5-B/-W/-R	■	■	■	■	
Sharp	LCD TV	LC-32DS5-B/-W/-R	■	■	■	■	
Sharp	LCD TV	LC-32E5-B	■	■	■	■	
Sharp	LCD TV	LC-26E5-B	■	■	■	■	
Sharp	LCD TV	LC-20E5-B	■	■	■	■	
Sharp	LCD TV	LC-16E5-B	■	■	■	■	
Sharp	LCD TV	LC-65XS1	■	■	■	■	
Sharp	LCD TV	LC-52XS1	■	■	■	■	
Sharp	LCD TV	LC-26DX1-B/-W/-R	■	■	■	■	
Sharp	LCD TV	LC-32DX1-B/-W/-R	■	■	■	■	
Sharp	LCD TV	LC-37DX1-B/-W/-R	■	■	■	■	
Sharp	LCD TV	LC-42DX1-B/-W/-R	■	■	■	■	
Sharp	LCD TV	LC-46DX1-B/-W	■	■	■	■	
Sharp	LCD TV	LC-52DX1-B/-W	■	■	■	■	
Sharp	LCD TV	LC-52ES50	■	■	■	■	

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 ■ Not covered by this web-based research March/April 2010.

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# 4

## RoHS CATEGORY 4 CONSUMER EQUIPMENT



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COMPANY	PRODUCT	MODEL	CURRENT MARKET		→	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Sharp	LCD TV	LC-46E550	■	■		■	■
Sharp	LCD TV	LC-42E550	■	■		■	■
Sharp	LCD TV	LC-37E550	■	■		■	■
Sharp	LCD TV	AQUOS LC-32DE5-B/-W/-R	■	■		■	■
Sharp	LCD TV	LC-26D50-B/-W/-R	■	■		■	■
Sharp	LCD TV	LC-20D50-B/-W/-R	■	■		■	■
Sharp	LCD TV	LC-19SB25U	■	■		■	■
Sharp	LCD TV	LC-19SB25U-W	■	■		■	■
Sharp	LCD TV	LC-19SK25U	■	■		■	■
Sharp	LCD TV	LC-19SB15U	■	■		■	■
Sharp	LCD TV	LC-19D45U	■	■		■	■
Sharp	LCD TV	LC-32DH77E/RU/S	■	■		■	■
Sharp	LCD TV	LC-42DH77E/RU/S	■	■		■	■
Sharp	LCD TV	LC-46DH77E/RU/S	■	■		■	■
Philips	Flat TV	ALL	★	★		★	★
Sony	Video camera	HDR-XR550	■	■		★	★
Sony	Video camera	HDR-XR500/XR520	■	■		■	■
Sony	Video camera	HDR-XR350	■	■		■	■
Sony	Video camera	HDR-XR150/XR155E	■	■		■	■
Sony	Video camera	HDR-XR100/XR200	■	■		■	■
Sony	Video camera	HDR-CX550	■	■		■	■
Sony	Video camera	HDR-CX300/CX350/-CX370	■	■		■	■
Sony	Video camera	HDR-CX110/CX115E/CX116E/CX150/-CX155E/CX170	■	■		■	■
Sony	Video camera	HDR-CX11/CX12	■	■		■	■
Sony	Video camera	HDR-CX100/CX120	■	■		■	■
Sony	Video camera	HDR-TG5/TG7	■	■		■	■
Sony	Video camera	HDR-HC9	■	■		■	■
Sony	Video camera	HDR-HC 91	■	■		■	■
Sony	Video camera	HDR-FX7	■	■		■	■
Sony	Video camera	HDR-FX1000	■	■		■	■
Sony	Video camera	DCR-SX73E/SX83	■	■		■	■

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 ■ Not covered by this web-based research March/April 2010.

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# RoHS CATEGORY 4 CONSUMER EQUIPMENT

# 4

COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Sony	Video camera	DCR-SX40/SX41	■	■		■	■
Sony	Video camera	DCR-SX33E/SX34E/SX43/SX44/-SX53E/SX63	■	■		■	■
Sony	Video camera	DCR-SR58E/SR68/SR78E/SR88	■	■		■	■
Sony	Video camera	DCR-SR37/SR47/SR67/SR87	■	■		■	■
Sony	Video camera	DCR-DVD150/DVD650/DVD850	■	■		■	■
Sony	Video camera	DCR-HC51/HC52/HC54/HC62	■	■		■	■
Sony	Video camera	DCR-VX2100	■	■		■	■
Sony	Video camera	DCR-VX2200E	■	■		■	■
Sony	Video camera	DSR-PD170/PD190	■	■		■	■
Sony	Video camera	DSR-PD175P/PD177P/PD198P	■	■		■	■
Sony	Video camera	HXR-NX5	■	■		■	■
Sony	Video camera	HXR-MC1	■	■		■	■
Sony	Video camera	HVR-Z7	■	■		■	■
Sony	Video camera	HVR-Z5	■	■		■	■
Sony	Video camera	HVR-Z1	■	■		■	■
Sony	Video camera	HVR-V1	■	■		■	■
Sony	Video camera	HVR-S270	■	■		■	■
Sony	Video camera	HVR-HD1000	■	■		■	■
Sony	Video camera	HVR-A1	■	■		■	■
Sony	Video camera	HDR-AX2000	■	■		■	■
Samsung	Camcorder/Camera	ALL	★	★		★	★
Sony	Digital still camera	DSC-WX1/W320/W330/W350/W360/W380/W390	■	■		■	■
Sony	Digital still camera	DSC-TX1/TX7	■	■		■	■
Sony	Digital still camera	DSC-H20/HX1	■	■		■	■
Sony	Digital still camera	DSC-HX5V	■	■		■	■
Sony	Digital still camera	DSC-W370/W310	■	■		■	■
Sony	Digital still camera	DSC-S2100/S2000	■	■		■	■

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# 4

## RoHS CATEGORY 4 CONSUMER EQUIPMENT

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COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Sony	Digital SLR camera	DSLR-A230/A230L/A230Y	■	■	➔	■	■
Sony	Digital SLR camera	DSLR-A330/A330L/A330Y	■	■	➔	■	■
Sony	Digital SLR camera	DSLR-A380/A380L/A380Y	■	■	➔	■	■
Sony	Digital SLR camera	DSLR-A450/A450H/A450L	■	■	➔	■	■
Sony	Digital SLR camera	DSLR-A500/A500H/A500L	■	■	➔	■	■
Sony	Digital SLR camera	DSLR-A550/A550H/A550L	■	■	➔	■	■
Sony	Digital SLR camera	DSLR-A850	■	■	➔	■	■
Sony	Digital SLR camera	DSLR-A900	■	■	➔	■	■
Sony	Mobile HD Snap camera	MHS-PM5	■	■	➔	■	■
Sony	Mobile HD Snap camera	MHS-CM5	■	■	➔	■	■
Panasonic	Digital video cameras	HDC-SD100 (+4 other models)	■	■	➔	■	■
Panasonic	Digital still cameras	Lumix DMC-FX37 (+2 other models)	■	■	➔	■	■
Panasonic	Memory card camera-recorders	AJ-HPX2700GY (+5 other models)	■	■	➔	■	■
Acer	Projector	X1130P	■	■	➔	★	★
Acer	Projector	X1230PK	■	■	➔	■	■
Acer	Projector	X1161	■	■	➔	■	■
Acer	Projector	X1261	■	■	➔	■	■
Sony	Video recorder	GV-HD700	■	■	➔	■	■
Sony	Video recorder	GV-D200/D800	■	■	➔	■	■
Sony	Video recorder	HXR-FMU128	■	■	➔	■	■
Sony	Video recorder	HVR-MRC1K	■	■	➔	■	■
Sony	Video recorder	HVR-DR60	■	■	➔	■	■
Sony	Video recorder	DSR-45A	■	■	➔	■	■
Sony	Video recorder	HVR-M15A/M25A	■	■	➔	■	■
Sony	Video recorder	HVR-M35	■	■	➔	■	■

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# RoHS CATEGORY 4 CONSUMER EQUIPMENT

# 4

COMPANY	PRODUCT	MODEL	CURRENT MARKET		→	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Sharp	Projector	PG-F212X	■	■		★	★
Sharp	Projector	PG-F312X	■	■		■	■
Sharp	Projector	PG-F262X	■	■		■	■
Sharp	Projector	XG-P560W	■	■		■	■
Sharp	Projector	XG-C455W	■	■		■	■
Sharp	Projector	XG-C355W	■	■		■	■
Sharp	Projector	XR-32S/X	■	■		■	■
Sharp	Projector	XG-F317X	■	■		■	■
Sharp	Projector	PG-F265X	■	■		■	■
Sharp	Projector	PGF255W	■	■		■	■
Sharp	Projector	XG-D3700X	■	■		■	■
Sharp	Projector	XG-3710X	■	■		■	■
Sharp	Projector	PG-D3550W	■	■		■	■
Sharp	Projector	XV-Z15000	■	■		■	■
Sharp	Projector	XV-Z16000	■	■		■	■
Lenovo	Projector	ALL	★	★		★	★
Apple	iPod	ALL	★	★		★	★
Sony	Walkman	NW-X1050/X1060	■	■		★	★
Sony	Walkman	NWZ-X1050/X1060	■	■		■	■
Sony	Walkman	NW-S644/S645/S646	■	■		■	■
Sony	Walkman	NW-S644K/S645K/S646K	■	■		■	■
Sony	Walkman	NWZ-S744/S745	■	■		■	■
Sony	Walkman	NW-S744/S745/S746	■	■		■	■
Sony	Walkman	NW-S744K/S745K/S746K	■	■		■	■
Sony	Walkman	NWZ-A845/A846/A847	■	■		■	■
Sony	Walkman	NW-A845/A846/A847	■	■		■	■
Sony	Walkman	NWZ-S543/S544/S545	■	■		■	■
Sony	Walkman	NWZ-E343/E344/E345	■	■		■	■
Sony	Walkman	NWZ-E443K/E444K	■	■		■	■
Sony	Walkman	NWZ-E443/E444/E445	■	■		■	■
Sony	Walkman	NWZ-B142F/B142FK/B143F/- B143FK/B142/B143	■	■		■	■

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■ Products free from brominated flame retardants (BFRs) or PVC as defined by industry.  
 ■ No information found through this web-based research March/April 2010.

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# 4

## RoHS CATEGORY 4 CONSUMER EQUIPMENT

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COMPANY	PRODUCT	MODEL	CURRENT MARKET		➔	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Sony	Walkman	NWZ-W202	■	■		■	■
Sony	Walkman	NWD-W202	■	■		■	■
Sony	Walkman	NW-E042/E043/E044	■	■		■	■
Sony	IC Recorder	ICD-UX71/UX71F/UX81/UX81F/UX91/ UX91F/UX200/UX300/UX300F/ UX400/UX400F	■	■		■	■
Sony	IC Recorder	ICD-AX70/BX700/PX720/AX80/ BX80/BX800/PX820	■	■		■	■
Sony	IC Recorder	ICD-B61	■	■		■	■
Samsung	Mp3 Player	ALL	★	★		★	★
Samsung	Mp3 Player	YP-R1	■	■		■	■
Samsung	Mp3 Player	M1	■	■		■	■
JVC	Speakers	SX-L33MK2	■	■		■	■
Sharp	Blue-ray disc player	BD-HD22	■	■		★	★
Sharp	Blue-ray disc player	BD-HDW30	■	■		■	■
Sharp	Blue-ray disc player	BD-HDW25	■	■		■	■
Sharp	Blue-ray disc player	BD-HDW22	■	■		■	■
Sharp	Blue-ray disc player	BD-HD22	■	■		■	■
Sharp	Blue-ray disc player	BD-HDV22	■	■		■	■
Sharp	Blue-ray disc player	BD-HP21U	■	■		■	■
Sharp	Blue-ray disc player	BD-HP21H/S/SB/RU	■	■		■	■
Sharp	Blue-ray disc player	BD-HP21X	■	■		■	■
Sharp	Blue-ray disc player	BD-HP21A	■	■		■	■
Sharp	Blue-ray disc player	BD-HP50U	■	■		■	■
Sharp	Blue-ray disc player	BD-HP50X	■	■		■	■
Panasonic	Blue-ray disc recorder	DMR-BW730 /(+5 other models)	■	■		■	■
LG Electronics	DVD rewriters	ALL	■	■		★	★
Sony	Memory stick	MS-HX32G/HX16G/HX8G	■	■		★	★
Sony	Memory stick	MS-MT32G/MT16G/ MT8G/MT4G/MT2G	■	■		■	■
Sony	Memory stick	MS-A8GDP/A4GDP	■	■		■	■
Sony	Memory stick	MSX-JX8G	■	■		■	■

■ Products free from brominated flame retardants (BFRs) or PVC as defined by industry.  
 ■ No information found through this web-based research March/April 2010.

★ All products within the category from this company are completely free from brominated flame retardants or PVC.

■ Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).  
 ■ Not covered by this web-based research March/April 2010.

ALL All new products put on the market, or that will be on the market by 2014, within the category from this company are free or almost free from brominated flame retardants or PVC.

# RoHS CATEGORY 4 CONSUMER EQUIPMENT



COMPANY	PRODUCT	MODEL	CURRENT MARKET		→	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Sony	SxS memory card	SBP-32/16					
Sony	SxS memory card	SBS-32G1					
Sony	Digital Photo Frames	DPF-X800/X1000					
Sony	Digital Photo Frames	DPF-X1000N/V1000N					
Sony	Digital Photo Frames	DPF-V800/V1000					
Sony	Digital Photo Frames	DPF-D82/D92					
Sony	Digital Photo Frames	DPF-D72N/E72N/A72N					

Products free from brominated flame retardants (BFRs) or PVC as defined by industry.

No information found through this web-based research March/April 2010.

All products within the category from this company are completely free from brominated flame retardants or PVC.

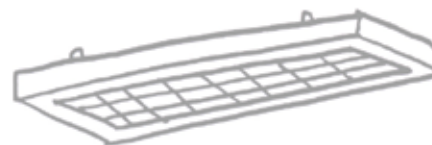
Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).

Not covered by this web-based research March/April 2010.

ALL All new products put on the market, or that will be on the market by 2014, within the category from this company are free or almost free from brominated flame retardants or PVC.

# 5

## RoHS CATEGORY 5 LIGHTING EQUIPMENT



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COMPANY	PRODUCT	MODEL	CURRENT MARKET		→	COMPANY PLANS 2014	
			BFR Free	PVC Free		BFR Free	PVC Free
Panasonic	Fluorescent Kitchen Lamps	HW4871C	■	■		■	■
Panasonic	Compact Fluorescent downlight	NFM21700ENM	■	■		■	■
Sharp	LED Downlight Lightings	DL-D001N	■	■		■	■
Sharp	LED Downlight Lightings	DL-D003L	■	■		■	■
Sharp	LED Lightings	DL-D007N	■	■		■	■
Sharp	LED Lightings	DL-D010L	■	■		■	■
Sharp	LED Lightings	DL-D011N	■	■		■	■
Sharp	LED Lightings	DL-D012N	■	■		■	■
Sharp	LED Lightings	DL-D013N	■	■		■	■
Sharp	LED Lightings	DL-D014N	■	■		■	■
Sharp	LED Lightings	DL-D015N	■	■		■	■
Sharp	LED Lightings	DL-D016N	■	■		■	■
Sharp	LED Lightings	DL-N002N	■	■		■	■
Sharp	LED Lightings	DL-N006N	■	■		■	■
Sharp	LED Lightings	DL-N021N	■	■		■	■
Sharp	LED Lightings	DL-N025N	■	■		■	■
Panasonic	Office/business lightning equipment, LED	LGBJ71000 (+2 other models)	■	■		■	■
Panasonic	Fluorescent Ceiling Lamps	HFA6364	■	■		■	■
Panasonic	Fluorescent Ceiling Lamps	HFA0710C	■	■		■	■
Panasonic	Fluorescent Ceiling Lamps	HFA6324K	■	■		■	■
Philips	Lighting	ALL	■	■		■	■

■ Products free from brominated flame retardants (BFRs) or PVC as defined by industry.  
 ■ No information found through this web-based research March/April 2010.



All products within the category from this company are completely free from brominated flame retardants or PVC.

■ Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).  
 ■ Not covered by this web-based research March/April 2010.

ALL

All new products put on the market, or that will be on the market by 2014, within the category from this company are free or almost free from brominated flame retardants or PVC.





# RoHS CATEGORY 7 TOYS, LEISURE AND SPORTS EQUIPMENT



COMPANY	PRODUCT	MODEL	CURRENT MARKET		COMPANY PLANS 2014	
			BFR Free	PVC Free	BFR Free	PVC Free
Nintendo	Hand-held Game Consoles	ALL				
Microsoft	Accessories, Microphone	Xbox 360 Lips				
Sony	Hand-held Game Consoles	PSP-3000 series				
Sony	Hand-held Game Consoles	PSP-N1000 series				
HCL Infosystems Ltd.	Hand-held Game Consoles	Gaming devices				

Products free from brominated flame retardants (BFRs) or PVC as defined by industry.

No information found through this web-based research March/April 2010.

All products within the category from this company are completely free from brominated flame retardants or PVC.

Products/product almost free from brominated flame retardants/PVC (with some remaining brominated flame retardants or PVC-containing components/parts).

Not covered by this web-based research March/April 2010.

ALL All new products put on the market, or that will be on the market by 2014, within the category from this company are free or almost free from brominated flame retardants or PVC.

# CONCLUSION

It is today possible to replace brominated flame retardant and PVC in a large number of electronic products.

In a world ever-more dependent on electronics, and ever-increasing volumes of electronic waste, the problems of high concern chemicals used in electronics unintentionally being released into the environment, will continue to grow.

This Market Overview demonstrates that it is technically and economically feasible to replace the use of brominated flame retardants and PVC in a wide range of electronic products. Numerous electronic products without brominated flame retardants and PVC are already sold on the market today. Many more companies officially state that they will phase-out these substances in the next few years.

The electronics companies in the IT and communications sector (RoHS categories 3 and 4) are at the forefront when it comes to eliminating the use of brominated flame retardants and PVC.

Furthermore, this Market Overview also establishes that it is technically feasible to remove brominated flame retardants and PVC from other product groups such as coffee machines, electrical toothbrushes and copy-machines.

The examples provided by the companies and products listed in this Market Overview demonstrate the will, possibility and feasibility of greener electronic products.

The companies going for BFR- and PVC-free have shown the way forward.

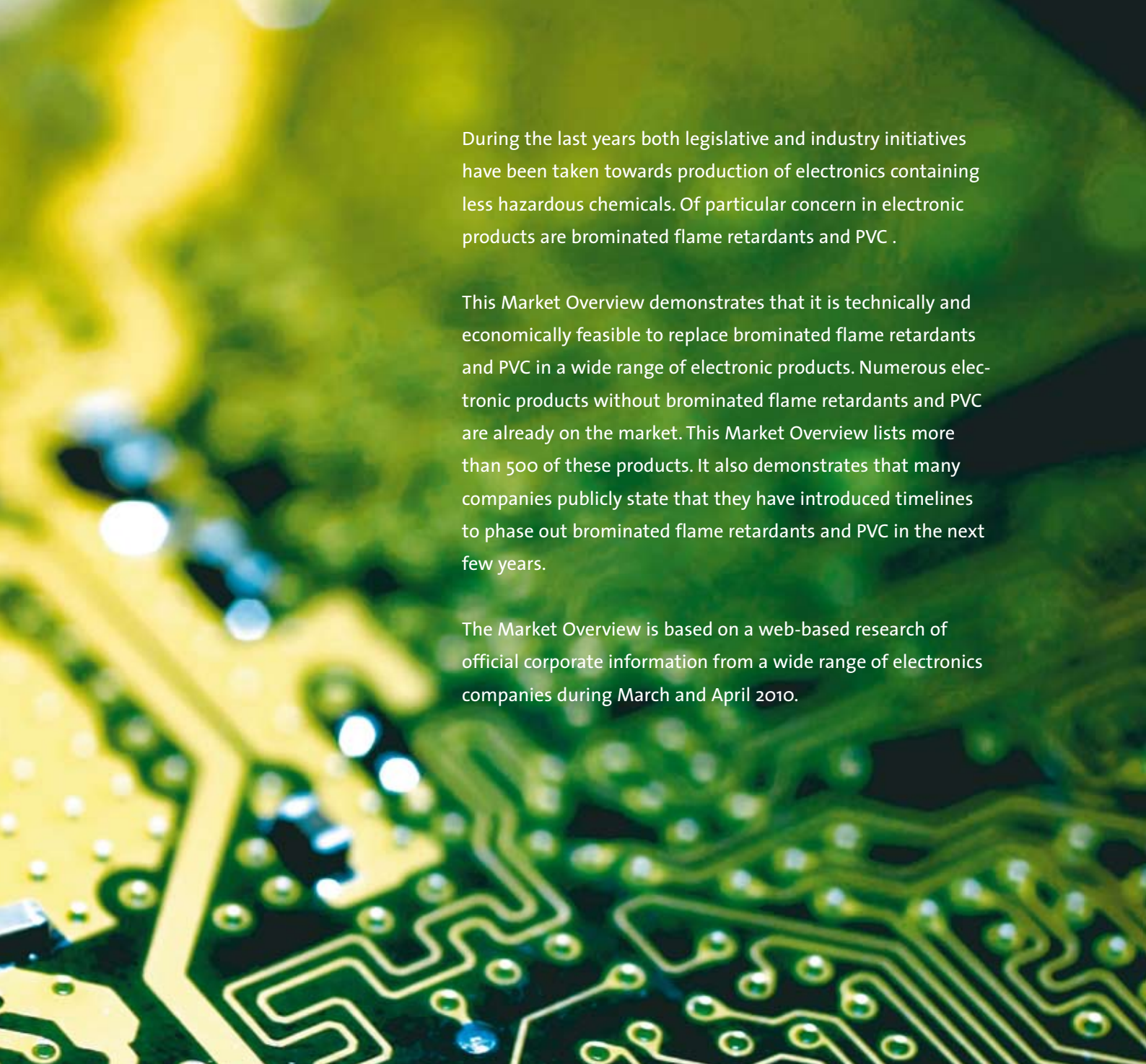
If industry standard bodies as well as regulatory bodies demonstrate similar foresightedness and courage, and confirm and stimulate this direction, important steps will be taken towards providing ever-more sustainable, greener, electronics.

## CHEMSEC – FOR A TOXIC-FREE WORLD

ChemSec (the International Chemical Secretariat) is a non-profit organisation working for a toxic-free environment. ChemSec strives to bridge the gap between decision-makers, science and industry, working with stakeholders from industry, public interest organisations and academia, offering expertise and guidance on chemical management policies. We collaborate with progressive multinational companies to show that substituting hazardous chemicals with safer alternatives is both scientifically and economically feasible. All of our work is geared to stimulating public debate and action on the necessary steps towards a toxic-free world.



- Print Billes, May 2010, on Munken Pure (170 and 120 g). Munken Pure is manufactured completely without chlorine (TCF) and without any additive of optical brightening agents (OBA).
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- Photo StockExpert
- Illustrator Christofer Ahde



During the last years both legislative and industry initiatives have been taken towards production of electronics containing less hazardous chemicals. Of particular concern in electronic products are brominated flame retardants and PVC .

This Market Overview demonstrates that it is technically and economically feasible to replace brominated flame retardants and PVC in a wide range of electronic products. Numerous electronic products without brominated flame retardants and PVC are already on the market. This Market Overview lists more than 500 of these products. It also demonstrates that many companies publicly state that they have introduced timelines to phase out brominated flame retardants and PVC in the next few years.

The Market Overview is based on a web-based research of official corporate information from a wide range of electronics companies during March and April 2010.

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