



### Criteria on Toxic Chemicals

Greenpeace wants to see electronics companies clean up their act.

Substituting harmful chemicals in the production of electronics will prevent worker exposure to these substances and contamination of communities that neighbour production facilities. Eliminating harmful substances will also prevent leaching/off-gassing of chemicals like brominated flame retardants (BFR) during use, and enable electronic scrap to be safely recycled. The presence of toxic substances in electronics perpetuates the toxic cycle – during reprocessing of electronic waste and by using contaminated secondary materials to make new products.

The issue of toxicity is overarching. Until the use of toxic substances is eliminated, it is impossible to secure 'safe' recycling. For this reason, the points awarded to corporate practice on chemicals are weighted more heavily than criteria on recycling.

Although there are five criteria on both chemicals and waste, the top score on chemicals is 18 points, as double points are awarded for vinyl plastic-free (PVC) and BFR-free models on the market, whereas the top score on e-waste is 15 points.

The criteria on Precautionary Principle and Chemicals Management remain the same. The criterion: BFR-free and PVC-free models on the market, also remains the same and continues to score double points.

The two former criteria: Commitment to eliminating PVC with timeline and Commitment to eliminating all BFRs with timeline, have been merged into one criterion, with the lower level of commitment to PVC or BFR elimination determining the score on this criterion.

A new criterion has been added, namely Phase out of additional substances with timeline(s). The additional substances, many of which have already been identified by the brands as suspect substances for potential future elimination are:

- (1) all phthalates,
- (2) beryllium, including alloys and compounds and
- (3) antimony/antimony compounds

### Criteria on e-waste

Greenpeace expects companies to take financial responsibility for dealing with the electronic waste (e-waste) generated by their products, to take back discarded products in all countries with sales of their products and to re-use or recycle them responsibly. Individual Producer Responsibility (IPR) provides a feedback loop to the product designers of the end-of-life costs of treating discarded electronic products and thus an incentive to design out those costs.

An additional e-waste criterion has been added and most of the existing criteria have been sharpened, with additional demands. The new e-waste criterion requires the brands to report on the use of recycled plastic content across all products and provide timelines for increasing content.

### Criteria on energy

The five new energy criteria address key expectations that Greenpeace has of responsible companies that are serious about tackling climate change. They are:

- (1) Support for global mandatory reduction of greenhouse gas (GHG) emissions;
- (2) Disclosure of the company's own GHG emissions plus emissions from two stages of the supply chain;
- (3) Commitment to reduce the company's own GHG emissions with timelines;
- (4) Amount of renewable energy used
- (5) Energy efficiency of new models (companies score double on this criterion)

**Click here to see more detailed information on the ranking**

### Ranking criteria explained

As of the 8th edition of the Guide to Greener Electronics, Greenpeace scores electronics brands on a tightened set of chemicals and e-waste criteria, (which include new criteria) and on new energy criteria.

The ranking criteria reflect the demands of the Toxic Tech campaign to electronics companies. Our two demands are that companies should:

- (1) clean up their products by eliminating hazardous substances; and
- (2) take-back and recycle their products responsibly once they become obsolete.

The two issues are connected: the use of harmful chemicals in electronic products prevents their safe recycling once the products are discarded.

Given the increasing evidence of climate change and the urgency of addressing this issue, Greenpeace has added new energy criteria to encourage electronics companies to:

- (3) improve their corporate policies and practices with respect to Climate and Energy

**Ranking regrading:** Companies have the opportunity to move towards a greener ranking as the guide will continue to be updated every quarter. However penalty points will be deducted from overall scores if Greenpeace finds a company lying, practicing double standards or other corporate misconduct.

**Disclaimer:** Greenpeace's 'Guide to Greener Electronics' aims to clean up the electronics sector and get manufacturers to take responsibility for the full life cycle of their products, including the electronic waste that their products generate and the energy used by their products and operations.

The guide does not rank companies on labour standards, social responsibility or any other issues, but recognises that these are important in the production and use of electronics products.

**Changes in ranking guide:** We first released our 'Guide to Greener Electronics' in August 2006, which ranked the 14 top manufacturers of personal computers and mobile phones according to their policies on toxic chemicals and recycling.

In the sixth issue of the Guide, we added the leading manufacturers of TVs – namely, Philips and Sharp – and the game console producers Nintendo and Microsoft. The other market leaders for TVs and game consoles are already included in the Guide.

In the eighth edition, we sharpened some of the existing ranking criteria on toxic chemicals and e-waste and added a criterion on each issue. We also added five new energy criteria.

From this version of the Guide, Fujitsu Siemens Computers will no longer be scored. Fujitsu will acquire the Siemens share in Fujitsu Siemens Computers (FSC). The new company will operate under the brand Fujitsu from April 1, 2009. Fujitsu will be evaluated in the next Guide due in June 2009.

For the latest version [greenpeace.org/greenelectronics](http://greenpeace.org/greenelectronics)

In this version of the Guide, PC manufacturers HP, Lenovo and Dell have been served a penalty point for backtracking on their commitment to eliminate vinyl plastic (PVC) and brominated flame retardants (BFRs) from their products by the end of 2009.

## SAMSUNG Ranking = 6.9/10

Samsung leaps to 2nd place, up from 4th in v.10 and increases its score from 5.9 to 6.9, scoring relatively well on all criteria.

Since November 2007, all new models of LCD panels are PVC-free, important in driving the market to phase out PVC, with Samsung being the #1 supplier globally. The company has launched partially BFR-free models of mobile phone and developed halogen-free memory chips and semiconductors for certain applications. It gains an extra point for committing to eliminate phthalates and beryllium and compounds by the end of 2012 from all its products, not just from PCs, TVs and mobile phones.

Samsung scores well on e-waste; it reports recycling rates of 137% for TVs (based on past sales 10 years ago, the average life span, since when Samsung's TV sales have increased 10-fold), 12% for PCs (based on 7 year lifespan) and 9% for mobile phones (based on 2 year lifespan). However to score top marks, Samsung needs to put a reality check on the EU figures of e-waste recycled. It also scores top marks on its use of recycled plastic, which is 16.1%, though only 0.2% is post-consumer plastic, with a goal to increase to 25% by 2008 and use a majority of post-consumer plastic.

Samsung boosts its score on energy, by supporting the levels of cuts required globally and by industrialised countries to keep dangerous climate change in check and for providing a certificate of verification of its GHG emissions in Korea. Samsung scores double points on the energy efficiency of its battery chargers, all of which meet and 94% of which exceed the latest Energy Star standard.

### SAMSUNG Overall Score

	BAD (0)	PARTIALLY BAD (1+)	PARTIALLY GOOD (2+)	GOOD (3+)
Precautionary Principle				
Chemicals Management				
Timeline for PVC & BFR phaseout				
Timeline for additional substances phaseout				
PVC-free and/or BFR-free models <small>(companies score double on this criterion)</small>				
Individual producer responsibility				
Voluntary take-back				
Information to individual customers				
Amounts recycled				
Use of recycled plastic content				
Global GHG emissions reduction support				
Carbon Footprint disclosure				
Own GHG emissions reduction commitment				
Amounts of renewable energy used				
Energy efficiency of new models				

# SAMSUNG Detailed Scoring

## Chemicals

Precautionary Principle	Chemicals Management	Timeline for PVC & BFR phaseout	Timeline for additional substances phaseout	PVC-free and/or BFR-free models (double points)
<b>GOOD (3+)</b>	<b>GOOD (3+)</b>	<b>GOOD (3+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>PARTIALLY BAD (1+)</b>
Samsung scores top marks on its support for and understanding of the Precautionary Principle. <b>More information.</b>	Samsung scores full marks on this criterion, by also identifying future chemicals to be targeted for elimination. <b>More information.</b> <b>SEC Standard (version 11.1).</b> <b>Eco-Partner Certification Program.</b>	Full marks for providing a timeline of end of 2010 for phasing out PVC. <b>More information.</b> Timeline for phasing out BFRs in all new models is January 2010. <b>More information.</b>	Samsung has set a timeline for the phase out of phthalates and beryllium and compounds from new models of all products of 31st December 2012. Antimony trioxide is to be phased out from new models of PCs, TVs and mobile phones only, by 31st December 2012, but with 2 exemptions. For full marks, Samsung needs a similar restriction on all uses of antimony in all new product. <b>More information.</b>	Since 1st November 2007, all new models of LCD panels are PVC-free. Samsung has developed halogen-free memory chips and semiconductors for certain applications. Since 1st July 2007 all new models of mobile phones use BFR-free materials in most if not all circuit boards. The housings of all mobile handsets and peripherals are BFR-free. In June 08, Samsung released the SGH-F268 model of mobile phone which is totally free of BFRs and PVC in both the phone and its accessories. <b>More information.</b>

## E-Waste

Support for Individual Producer Responsibility	Provides voluntary take-back where no EPR laws exist	Provides info for individual customers on take-back in all countries where products are sold	Reports on amount of e-waste collected and recycled	Use of recycled plastic content in products - and timelines for increasing content
<b>PARTIALLY GOOD (2+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>GOOD (3+)</b>
Samsung supports and lobbies for IPR. <b>More information.</b> Samsung is advocating a stronger role for IPR in the EU. <b>More information.</b> To gain top marks, Samsung will need to explore options for operationalising IPR and to continue to lobby for IPR, inter alia to ensure the revised WEEE legislation sets clearer requirements (enforcement criteria) for the implementation of IPR and prevents the indefinite use of the Visible Fee. But to stay on 2 points it will first have to be more positive on how to make IPR feasible, rather than questioning it.	Samsung now provides voluntary take-back for its consumer electronics (except home appliances) in the US. In other countries voluntary take-back is provided for mobile phones and printer cartridges, a small part of Samsung's product portfolio. For more points Samsung needs to extend its voluntary take-back for all products to non-OECD countries. <b>Voluntary initiatives.</b> <b>Global mobile phone recycling.</b>	Samsung provides accessible information to consumers on what to do with their discarded products, especially for mobile phones and for the Recycling Direct programme in the US. <b>More information here, here and here.</b> <b>Mobile phone take-back.</b>	Samsung estimates its 2007 recycling rates, based on sales and recycled amounts from Korea, Japan, Europe and North America: TVs – 137% (based on average life-span of 10 years, since when Samsung's TV sales have increased 10-fold). Computers – 12% (7 years) Mobile phones – 9% (2 years). For top marks, Samsung needs to provide EU figures from own brand sampling of return rate, undertaken in at least one Northern EU country, one Southern EU country and one new Member State – and provide indications of how it intends to expand this sampling in the future. <b>More information.</b>	Samsung's current use of recycled plastics across all products is some 15.9% post-industrial plastic and only 0.2% post-consumer plastic. Samsung has set a target of 25% recycled plastic content out of total plastics used by 2025 and will maximise the use of post consumer recycled plastics over post industrial plastics. <b>More information.</b>

## Energy

Support for global mandatory reduction of GHG emissions	Company carbon footprint disclosure	Commitment to reduce own direct GHG emissions	Amount of renewable energy used	Energy efficiency of New Models (double points)
<b>GOOD (3+)</b>	<b>PARTIALLY GOOD (2+)</b>	<b>BAD (0)</b>	<b>BAD (0)</b>	<b>GOOD (3+)</b>
Samsung Electronics supports global mandatory cuts of Greenhouse Gas emissions of at least 50% by 2050 (from 1990 levels) and cuts by industrialised countries of at least 30% as a group by 2020. <b>More information.</b>	Samsung reports on total GHG emissions from its operations in Korea (the majority of its operations) of 8,21 million tonnes/year. There is no reporting of product supply chain emissions. The Korea GHG Certification Office has verified the measurements. <b>More information.</b>	Samsung has revised its GHG reduction target. The previous target was to cut GHGs by 30% from 2001 levels by 2010 (per unit revenue basis). The revised target is to cut GHGs by 45% from 2001 levels by 2010 (per unit production basis). However, the basis of the target is still relative reductions in energy intensity. There is no target for absolute reduction of GHG emissions. <b>More information.</b>	Samsung reports that in the US, Samsung Austin Semiconductor purchases 6% of its electricity from renewable sources. In Europe, several subsidiaries use renewable energy, comprising approximately 15% of their annual electricity consumption. However, no figures for use of renewable energy as a percentage of the total fuel mix are given. Samsung also states that it is seeking to increase its use of renewable energy by investing in fuel and solar cells; however no target or timeline is given. <b>More information.</b>	Since November 2008 100% of Samsung models of mobile phone External Power Supplies (EPS) globally have met the latest Energy Star requirements, and 94% of these exceed the Energy Star requirements by 50% or more in no-load mode. All EPS (chargers) already comply with California's Amended Appliance Efficiency Regulations effective from July 1st, 2008. 100% of all flat TV models globally have met the latest Energy Star requirements and 43% exceed them for standby mode by 50% or more. 87% of PCs meet the latest Energy Star standard; 8% exceed the standby requirements by 50% or more and 8% exceed sleep mode requirements by 50% or more. <b>More information.</b>