



iPad

Environmental Report



Model

MB292, MB293, MB294 (Wi-Fi)
MC349, MC496, MC497 (Wi-Fi + 3G)

Date introduced

April 3, 2010

Environmental Status Report



iPad is designed with the following features to reduce environmental impact:

- Arsenic-free display glass
- Brominated flame retardant-free
- Mercury-free LED backlit display
- PVC-free
- Recyclable aluminum and glass enclosure
- Power adapter outperforms strictest global energy efficiency standards

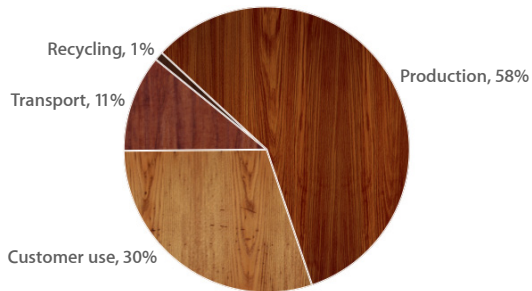
Apple and the Environment

Apple believes that improving the environmental performance of our business starts with our products. The careful environmental management of our products throughout their life cycles includes controlling the quantity and type of materials used in their manufacture, improving their energy efficiency, and designing them for better recyclability. The information below details the environmental performance of iPad as it relates to climate change, energy efficiency, restricted substances and material efficiency.

Climate Change

Greenhouse gas emissions have an impact on the planet's balance of land, ocean, and air temperature. Most of Apple's corporate greenhouse gas emissions come from the production, transport, use, and recycling of its products. Apple seeks to minimize greenhouse gas emissions by setting stringent design-related goals for material and energy efficiency. The chart below provides the estimated life-cycle greenhouse gas emissions for iPad.

Greenhouse Gas Emissions for iPad (Wi-Fi + 3G model)



Total greenhouse gas emissions: 130 kg CO₂e

Energy Efficiency

iPad uses power-efficient components and software that intelligently manages power consumption. In addition, the iPad 10W USB Power Adapter outperforms the stringent requirements of the ENERGY STAR specification for external power supplies. The following table details the power consumed by iPad in different use modes.

Power Consumption for iPad (Wi-Fi + 3G)

Mode	100V	115V	230V
Sleep	0.42W	0.43W	0.41W
Idle—Display on	2.97W	2.96W	3.04W
Power adapter, no-load	0.07W	0.07W	0.09W
Power adapter efficiency	80.9%	80.8%	79.9%

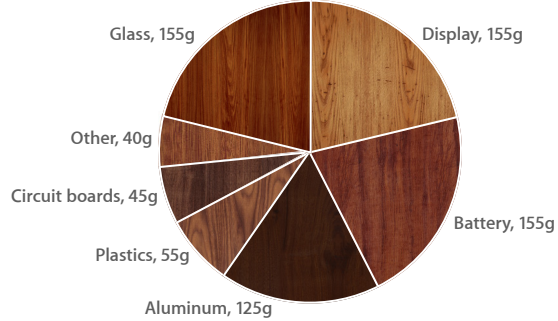
Battery chemistry

Lithium-ion polymer, 25 Whr
Free of lead, cadmium, and mercury

Material Efficiency

Apple’s ultracompact product and packaging designs lead the industry in material efficiency. Reducing the material footprint of a product helps maximize shipping efficiency. It also helps reduce energy consumed during production and material waste generated at the end of the product’s life. iPad is made of recyclable materials, such as aluminum and glass. The chart below details the materials used for iPad.

Material Use for iPad (Wi-Fi + 3G model)



iPad uses corrugate cardboard made from a minimum of 33 percent post-consumer recycled content and molded fiber made entirely from post-consumer recycled content.

Packaging

The packaging for iPad is almost entirely recyclable and uses corrugate cardboard made from a minimum of 33 percent post-consumer recycled content. In addition, its packaging is extremely material efficient, allowing more units to be transported in a single shipping container. The following table details the materials used in iPad packaging.

Packaging Breakdown for iPad (U.S. Configurations)

Material	Retail box	Retail and shipping box
Paper (corrugate, molded fiber)	246g	631g
High-impact polystyrene	79g	79g
Other plastics	10g	10g

Restricted Substances

Apple has long taken a leadership role in restricting harmful substances from its products and packaging. As part of this strategy, all Apple products comply with the strict European Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, also known as the RoHS Directive. Examples of materials restricted by RoHS include lead, mercury, cadmium, hexavalent chromium, and PBB and PBDE brominated flame retardants (BFRs). iPad goes even further than the requirements of the RoHS Directive by incorporating the following more aggressive restrictions:

- Mercury-free LED backlit display
- Arsenic-free display glass
- Free of BFRs and PVC



Recycling

Through ultra-efficient design and use of highly recyclable materials, Apple has minimized material waste at the product's end of life. In addition, Apple offers and participates in various product take-back and recycling programs in 95 percent of the regions where Apple products are sold. All products are processed in the country or region in which they are collected. For more information on how to take advantage of these programs, visit www.apple.com/environment/recycling/.

Definitions

Greenhouse gas emissions: Estimated emissions are calculated in accordance with guidelines and requirements as specified by ISO 14040 and ISO 14044. Calculation includes emissions from the following life-cycle phases contributing to Global Warming Potential (GWP 100 years) in CO₂ equivalency factors (CO₂e):

- **Production:** Includes the extraction, production, and transport of raw materials and the manufacture of the product, as well as product packaging.
- **Transport:** Includes air and sea transportation of the finished product and its associated packaging from the manufacturing site to continental distribution hubs. Transport of products from distribution hubs to the end customer is not included.
- **Use:** End-user power consumption assumes a three-year period. Product use scenarios are modeled on data that reflects intensive daily use of the product. Geographic differences in the power grid mix have been accounted for at a continental level.
- **Recycling:** Includes transportation from collection hubs to recycling centers, and the energy used in mechanical separation and shredding of parts.

Energy efficiency terms: The energy efficiency values in this report are based on the ENERGY STAR Program Requirements for Single Voltage External AC-DC and AC-AC Power Supplies Version 2.0. For more information, visit www.energystar.gov.

- **Sleep:** Low power state that's entered automatically after five minutes of inactivity (default), or by pressing the Sleep/wake button. Tested with a fully charged battery and powered by the iPad 10W USB Power Adapter. All settings were default except Wi-Fi was associated with a network.
- **Idle—Display on:** iPad is on and at the Home screen. Tested with a fully charged battery and powered by the iPad 10W USB Power Adapter. All settings were default except Auto-Brightness was turned off and Wi-Fi was associated with a network.
- **Power adapter, no-load:** Condition in which the iPad 10W USB Power Adapter is connected to AC power, but not connected to iPad.
- **Power adapter efficiency:** Average of the iPad 10W USB Power Adapter's measured efficiency when tested at 100 percent, 75 percent, 50 percent, and 25 percent of the power adapter's rated output current.

Restricted substances: Apple defines a material as BFR-free and PVC-free if it contains less than 900 parts per million (ppm) of bromine and chlorine.