



iPad Air 2 Environmental Report



Date introduced
October 16, 2014

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 types 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 Air 2 as it relates to climate change, energy efficiency, material efficiency, and restricted substances.¹

Environmental Status Report

iPad Air 2 is designed with the following features to reduce environmental impact:

- Arsenic-free display glass
- Mercury-free LED-backlit display
- Brominated flame retardant-free
- PVC-free
- Beryllium-free
- Recyclable aluminum enclosure
- Speaker enclosures made with 35 percent post-consumer recycled plastic



Meets ENERGY STAR®
Version 6.1 requirements

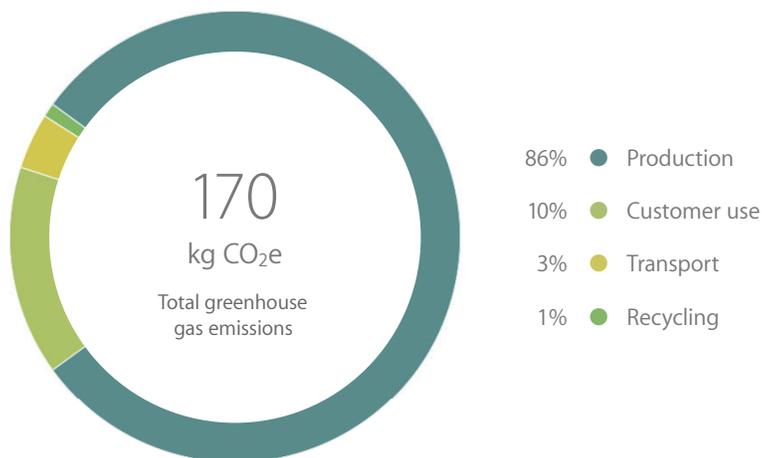


Achieves a Gold rating
from EPEAT²

Climate Change

Greenhouse gas emissions have an impact on the planet's balance of land, ocean, and air temperatures. 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 Air 2.

Greenhouse Gas Emissions for iPad Air 2 (Wi-Fi + Cellular)





Battery chemistry

- Lithium-ion polymer, 276 Whr
- Free of lead, cadmium, and mercury

Energy Efficiency

iPad Air 2 uses power-efficient components and software that intelligently manages power consumption. In addition, iPad Air 2 outperforms the stringent requirements of the ENERGY STAR Program Requirements for Computers Version 6.1. The following table details the power consumed by iPad Air 2 in different use modes.

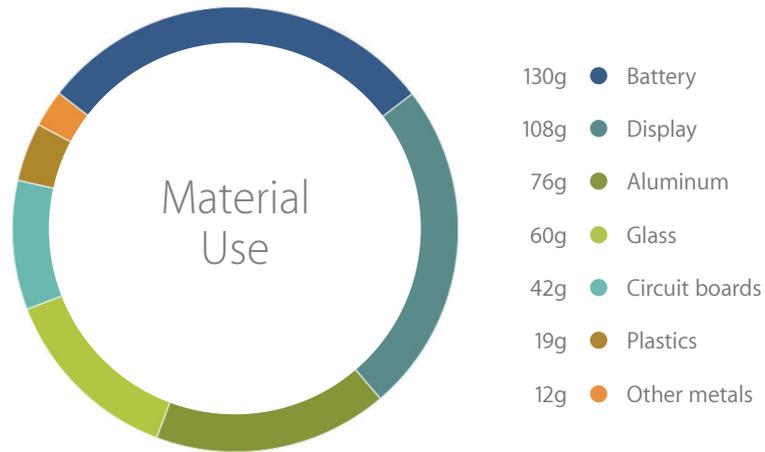
Power Consumption for iPad Air 2 (Wi-Fi + Cellular)

| Mode | 100V | 115V | 230V |
|--------------------------|--------|--------|--------|
| Sleep | 0.22W | 0.22W | 0.26W |
| Idle—Display on | 3.13W | 3.14W | 3.21W |
| Power adapter, no-load | 0.073W | 0.073W | 0.084W |
| Power adapter efficiency | 78.3% | 78.6% | 77.8% |

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 the energy consumed during production, and material waste generated at the end of the product's life. iPad Air 2 is made of aluminum and other materials highly desired by recyclers. The chart below details the materials used for iPad Air 2.

Material Use for iPad Air 2 (Wi-Fi + Cellular)





iPad Air 2 retail packaging uses a minimum of 38 percent post-consumer recycled content.

Packaging

The packaging for iPad Air 2 is highly recyclable. It uses corrugated cardboard made from a minimum of 38 percent post-consumer recycled content, and molded fiber made entirely from recycled content. The following table details the materials used in iPad Air 2 packaging.

Packaging Breakdown for iPad Air 2 (U.S. Configurations)

| Material | Retail box | Retail and shipping box |
|---------------------------------|------------|-------------------------|
| Paper (corrugate, molded fiber) | 170g | 392g |
| High-impact polystyrene | 61g | 61g |
| Other plastics | 6g | 6g |

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 the brominated flame retardants (BFRs) PBB and PBDE. iPad Air 2 goes even further than the requirements of the RoHS Directive by incorporating the following more aggressive restrictions:

- Arsenic-free display glass
- Mercury-free LED-backlit display
- BFR-free
- PVC-free
- Beryllium-free



Recycling

Through ultra-efficient design and the use of highly recyclable materials, Apple has minimized material waste at the product's end of life. Apple also operates or participates in recycling programs in 99 percent of the countries where we sell our products. For more information on how to take advantage of these programs, visit www.apple.com/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 transportation of raw materials, as well as the manufacture, transport, and assembly of all parts and product packaging.
- **Transport:** Includes air and sea transportation of the finished product and its associated packaging from manufacturing site to regional distribution hubs. Transport of products from distribution hubs to end customer is modeled using average distances based on regional geography.
- **Use:** User power consumption assumes a three-year period. Product use scenarios are based on historical customer use data. Geographic differences in the power grid mix have been accounted for at a regional level.
- **Recycling:** Includes transportation from collection hubs to recycling centers as well as the energy used in mechanical separation and shredding of parts.

Energy efficiency terms: iPad is tested with a fully charged battery and powered by the 10W USB Power Adapter with the Lightning to USB Cable (1m). The energy efficiency values in this report are based on the ENERGY STAR Program Requirements for Computers Version 6.1. For more information, visit www.energystar.gov.

- **Sleep:** Low power state that is entered automatically after 2 minutes of inactivity (default), or by pressing the Sleep/Wake button. Connected to Wi-Fi with Cellular Data off. All other settings were left in their default state.
- **Idle—Display on:** Display brightness was set as defined by ENERGY STAR Program Requirements for Computers Version 6.1, and Auto-Brightness was turned off. Connected to Wi-Fi with Cellular Data off. All other settings were left in their default state.
- **Power adapter, no-load:** Condition in which the 10W USB Power Adapter with the Lightning to USB Cable (1m) is connected to AC power, but not connected to iPad Air 2.
- **Power adapter efficiency:** Average of the 10W USB Power Adapter with the Lightning to USB Cable (1m) 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 of chlorine. Apple defines a material as beryllium-free if it contains less than 1000 parts per million (ppm) of beryllium. A complete list of Apple's restrictions on hazardous substances are available at www.apple.com/environment/toxins.

1. Product evaluations based on U.S. configurations of iPad Air 2 Wi-Fi + Cellular with 64GB capacity.

2. iPad Air 2 achieved a Gold rating from EPEAT in the United States and Canada.

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