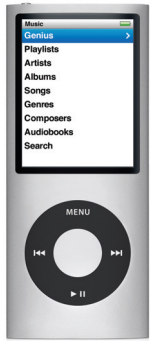




iPod nano

Environmental Report



Date introduced
September 9, 2008

Environmental Status Report



iPod nano is designed with the following features to reduce environmental impact:

- Arsenic-free glass
- Brominated flame retardant-free
- Mercury-free
- PVC-free
- Highly recyclable aluminum enclosure
- Power adapter (sold separately) outperforms strictest global energy efficiency standards

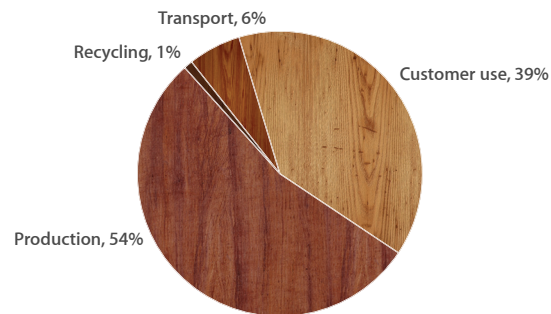
Apple and the Environment

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 manufacturing, improving their energy efficiency, and designing for better recyclability. The information below details the life cycle environmental performance of the iPod nano 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 the iPod nano.

Greenhouse Gas Emissions for iPod nano



Total greenhouse gas equivalent: 15 kg CO₂e

Energy Efficiency

iPod nano uses power efficient components and software that intelligently manages power consumption. In addition the Apple USB power adapter (sold separately) outperforms the stringent requirements of the Energy Star specification for external power supplies. The following table details the energy efficiency of the Apple USB power adapter.

Energy Efficiency of Apple USB Power Adapter (sold separately)

Mode	100V	115V	230V
Power adapter no-load	0.22 W	0.23 W	0.25 W
Power adapter efficiency	74%	75%	70%

Battery Chemistry

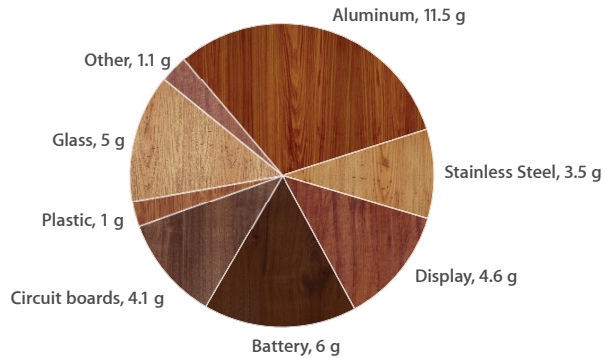
System battery: lithium-ion polymer

Free of lead, cadmium, and mercury in compliance with EU directive 98/101/EC

Material Efficiency

Apple's ultra-compact 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 end of life. iPod nano's enclosure is made of aluminum, a material highly desired by recyclers. The chart below details the materials used in the iPod nano.

Material Use for iPod nano



iPod nano packaging is 32% lighter and consumes 54% less volume than the first-generation iPod nano.

Packaging

iPod nano packaging is extremely material efficient, allowing more units to be transported in a single shipping container. The following table details the materials used in iPod nano packaging.

Packaging Breakdown for iPod nano

Material	Retail box	Retail and shipping box
Paper (corrugate, fiberboard)	7 g	119 g
Polycarbonate	51.2 g	51.2 g
Other plastics	1.1 g	1.1 g

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). iPod nano goes even further than the RoHS Directive by incorporating the following more aggressive restrictions:

- Mercury-free display
- Arsenic-free display glass
- Majority of PCB laminates, enclosure parts, are free of brominated flame retardants (BFRs) and all internal cables, headphones, and USB cables are free of polyvinyl chloride (PVC)



Recycling

Through ultra-efficient design and use of highly recyclable materials, Apple has minimized material waste at product end of life. In addition, Apple offers and participates in various product take-back and recycling programs in 95% 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 ISO14040 and ISO14044. Calculation includes emissions contributing to Global Warming Potential (GWP 100 years) in CO₂ equivalency factors (CO₂e).

- **Production:** Includes the extraction, production, and transportation of raw materials; the manufacture, transport, and assembly of all parts as well as product packaging.
- **Transport:** Includes air and sea transportation of finished product and its associated packaging from manufacturing site to continental distribution hub. Transport of products from distribution centers to end customer are not included.
- **Use:** End user power consumption assumes a 3-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: 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.

- **Power Adapter No-Load:** Condition in which the power adapter is connected to AC power, but not connected to iPod nano.
- **Power Adapter Efficiency:** Average of the power adapter's measured efficiency when tested at 100%, 75%, 50%, and 25% of the power adapter's rated output current.