



# Mac mini with Snow Leopard Server

## Environmental Report



Model MC408

### Date introduced

October 20, 2009

### Environmental Status Report



Mac mini with Snow Leopard Server is designed with the following features to reduce environmental impact:

- Brominated flame retardant-free
- PVC-free internal cables
- Highly recyclable aluminum and polycarbonate enclosure

Meets ENERGY STAR® Version 5.0 requirements.



Mac mini with Snow Leopard Server achieved a Gold rating from EPEAT.<sup>1</sup>



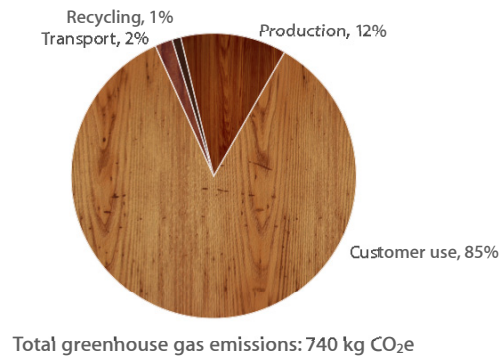
## Apple and the Environment

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 Mac mini with Snow Leopard Server 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 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 greenhouse gas emissions for Mac mini with Snow Leopard Server over its life cycle.

### Greenhouse Gas Emissions for Mac mini with Snow Leopard Server



## Energy Efficiency

Because the largest portion of product-related greenhouse gas emissions results from its use, energy efficiency is a key part of each product's design. Apple products use power-efficient components and software that can intelligently power them down during periods of inactivity.

Mac mini with Snow Leopard Server outperforms the stringent requirements of the ENERGY STAR Program Requirements for Computers Version 5.0. The following table details the power consumed in different use modes:

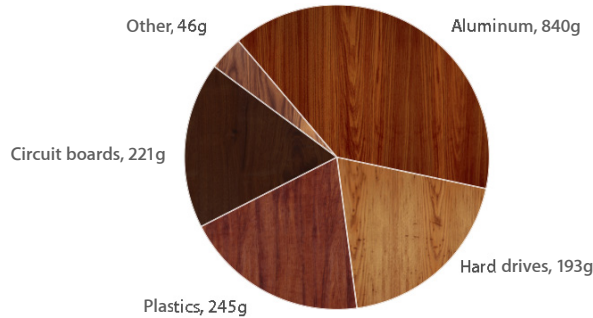
### Power Consumption for Mac mini with Snow Leopard Server

| Mode                     | 100V  | 115V  | 230V  |
|--------------------------|-------|-------|-------|
| Power adapter, no-load   | 0.18W | 0.20W | 0.38W |
| Off                      | 0.81W | 0.80W | 0.99W |
| Sleep                    | 1.39W | 1.39W | 1.63W |
| Idle                     | 14.5W | 14.4W | 15.2W |
| Power adapter efficiency | 87%   | 87%   | 87%   |

## 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 as well as material waste generated at the end of the product's life. The Mac mini with Snow Leopard Server enclosure is made of highly recyclable aluminum and polycarbonate. The chart below details the materials used in Mac mini with Snow Leopard Server.

### Material Use for Mac mini with Snow Leopard Server



Mac mini with Snow Leopard Server retail packaging uses 31 percent less volume than the Mac mini with Intel integrated graphics. In addition, the volume of the shipping box has decreased by 60 percent compared with the Mac mini with Intel integrated graphics. This allows Apple to send many more units per shipping container and to generate fewer transport-related greenhouse gas emissions.

## Packaging

The new packaging design of Mac mini with Snow Leopard Server uses corrugated cardboard made from a minimum of 25 percent post-consumer recycled content, and is free of expanded polystyrene (EPS). The following table details the materials used in Mac mini with Snow Leopard Server packaging.

### Packaging Breakdown for Mac mini with Snow Leopard Server (U.S. Configurations)

| Material                                    | Retail box | Retail and shipping box |
|---|------------|-------------------------|
| Paper (corrugate, paperboard, molded fiber) | 301g       | 609g                    |
| Other plastics                              | 7g         | 7g                      |

## Restricted Substances

Apple has long taken the lead 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). Mac mini with Snow Leopard Server goes even further than the requirements of the RoHS Directive by incorporating the following more aggressive restrictions:

- Brominated flame retardant (BFR)-free
- All internal cables free of polyvinyl chloride (PVC)



## Recycling

Through ultra-efficient design and the 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/](http://www.apple.com/environment/recycling/).

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## Definitions

**Electronic Product Environmental Assessment Tool (EPEAT):** A program that ranks computers and displays based on environmental attributes in accordance with IEEE 1680. For more information, visit [www.epeat.net](http://www.epeat.net).

**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 CO<sub>2</sub> equivalency factors (CO<sub>2</sub>e):

- **Production:** Includes the extraction, production, and transport of raw materials as well as the manufacture of the product and 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:** User power consumption assumes system is permanently on for a four-year period. Power draw is measured at a 50 percent load using the SPECpower benchmark tool.
- **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 values in this report are based on the ENERGY STAR Program Requirements for Computers Version 5.0 for Small-Scale Servers and 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](http://www.energystar.gov).

- **Off:** Lowest power mode of the system when it is shut down. Also referred to as Standby.
- **Idle:** System is on and has completed loading Mac OS X.
- **Sleep:** Low power state that can be enabled in System Preferences, or enabled by selecting Sleep from the Apple menu. By default, servers are not set to enter sleep mode automatically.
- **Power adapter, no-load:** Condition in which the power adapter is connected to AC power, but not connected to the system.
- **Power adapter efficiency:** Average of the power adapter's measured efficiency when tested at 100 percent, 75 percent, 50 percent, and 25 percent of the power adapter's rated 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.

1. Mac mini achieved a Gold rating from EPEAT in the United States and a Silver rating from EPEAT in Canada, France, Germany, and the UK.