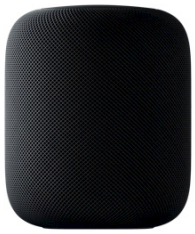
HomePod
Environmental Report



Models MQHV2, MQHW2

Date introduced
January 26, 2018

Environmental Status Report

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

- Brominated flame retardant–free
- PVC-free
- Beryllium-free
- 100 percent of packaging fibers are sourced from responsibly managed forests or recycled paper

Meets ENERGY STAR® for Audio/Video Version 3.0

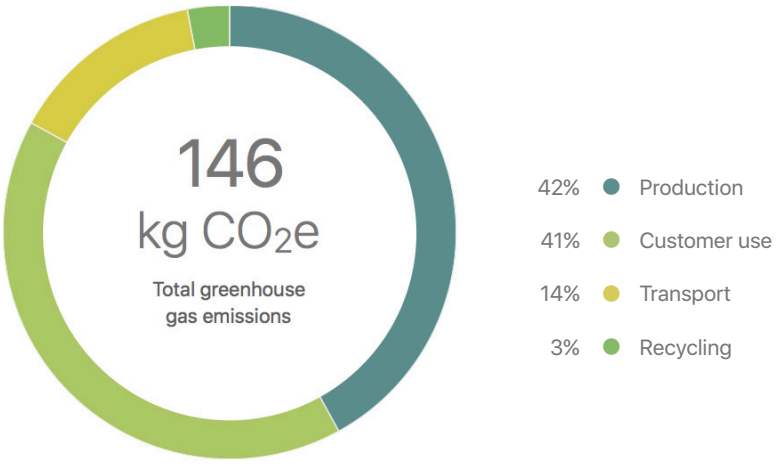
Apple and the Environment

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 HomePod as it relates to climate change, energy efficiency, material efficiency, and restricted substances.[1]

Climate Change

Greenhouse gas emissions have an impact on the planet's balance of land, ocean, and air temperatures. Most of Apple's greenhouse gas emissions come from the production, transport, use, and recycling of our products. Apple seeks to minimize product-related greenhouse gas emissions by designing products to be as energy efficient as possible, sourcing materials with lower-carbon emissions, and partnering with suppliers to procure clean energy to power their facilities. The chart below provides the estimated greenhouse gas emissions for HomePod over its life cycle.

Greenhouse Gas Emissions for HomePod



HomePod consumes less power than an average LED household light bulb during music playback.[2]

Energy Efficiency

A significant portion of product-related greenhouse gas emissions occurs during the customer use phase. Energy efficiency is therefore prioritized throughout the product's design. HomePod uses power-efficient components and software that can intelligently power them down during periods of inactivity. For example, through optimized power management features and a high-efficiency power supply, HomePod has been designed to be efficient in its low power mode, where the majority of time is spent. The result is that HomePod is energy efficient right out of the box.

HomePod outperforms the stringent requirements of the ENERGY STAR Program Requirements for Audio/Video Version 3.0, consuming 50 percent less than the allowable energy for low power mode. The following table details power consumption in different use modes.

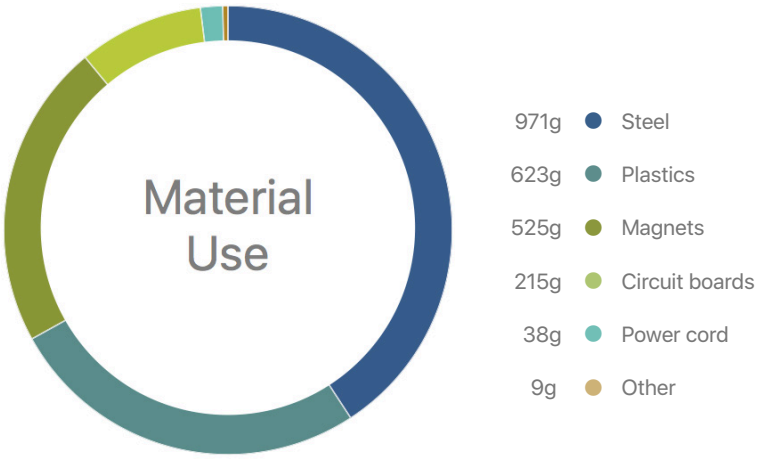
Power Consumption for HomePod

Mode	100V	115V	230V
Low power mode	1.71W	1.71W	1.76W
Music playback	8.69W	8.74W	9.25W
Power supply efficiency	89.9%	90.0%	89.7%

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. The chart below details the materials used in HomePod.

Material Use for HomePod



The retail packaging of HomePod is made from 35 percent recycled content.

Packaging

The packaging for HomePod is recyclable, and 100 percent of the fiber in its retail box is either recycled or sourced from responsibly managed forests. The following table details the materials used in HomePod packaging.

Packaging Breakdown for HomePod

Material	Retail box	Retail and shipping box
Fiber (corrugate, paperboard)	518g	1263g
High-impact polystyrene	49g	49g
Plastic film	23g	23g

Restricted Substances

Apple has long taken a leadership role in restricting harmful substances from our 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. HomePod goes even further than the requirements of the RoHS Directive by incorporating the following more aggressive restrictions:

- 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. In addition, Apple offers and participates in various product take-back and recycling programs in 99 percent of the countries where Apple sells products, including at all Apple Stores. For more information on how to recycle your products at end of life, 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 for the following life-cycle phases contributing to Global Warming Potential (GWP 100 years) in CO_2 equivalency factors (CO_2e):

- **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 the manufacturing site to regional distribution hubs. Transport of products from distribution hubs to end customer is modeled using average distances based on regional geography.
- **Customer use:** Apple conservatively assumes a four-year period for power use by first owners. Geographic differences in the power grid mix have been accounted for at a regional 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 in part on the ENERGY STAR Program Requirements for Audio/Video Version 3.0. For more information, visit www.energystar.gov.
All energy values assume a Wi-Fi connection.

- **Low power mode:** Low power state that is entered automatically after 8 minutes of inactivity (default).
- **Music playback:** Condition in which a typical music track is played on HomePod from iTunes at 50 percent volume. Power will vary depending on music track and volume.
- **Power supply efficiency:** Average of the power supply's measured efficiency when tested at 100 percent, 50 percent, and 20 percent of the power supply'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 is available at www.apple.com/environment/reports.

1. Product evaluations based on U.S. configuration of Model MQHV2.
2. Based on the average power consumed by A19 LED bulbs listed on the ENERGY STAR Certified Light Bulbs Version 2.0 registry as of January 10, 2018.