



# Apple Watch

## Environmental Report



### Date introduced

April 24, 2015

### Environmental Status Report



Apple Watch is designed with the following features to reduce environmental impact:

- Mercury-free
- Brominated flame retardant-free
- PVC-free
- Beryllium-free
- Complies with European REACH regulation on nickel
- Carrying case exterior made from 50 percent post-consumer recycled plastic
- Power adapter that outperforms strictest global energy efficiency standards

## Apple and the Environment

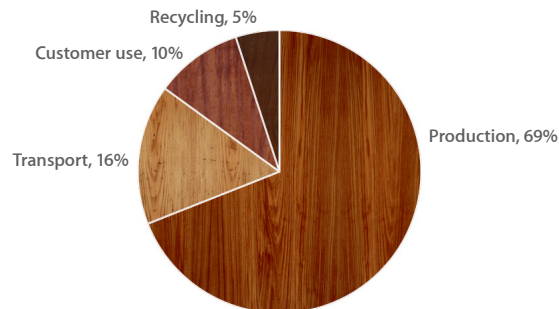
Apple believes that improving the environmental performance of our business starts with our products. The careful environmental management of our products throughout their life cycles includes controlling the quantity and type of materials used in their manufacture, improving their energy efficiency,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

## 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 Apple Watch over its life cycle.

### Greenhouse Gas Emissions for Apple Watch

42mm Stainless Steel Case with Leather Loop band<sup>1</sup>



Total greenhouse gas emissions: 50 kg CO<sub>2</sub>e

## Energy Efficiency

Apple Watch uses power-efficient components and software that intelligently manages power consumption. In addition, the Apple USB Power Adapter to charge your Apple Watch outperforms the strictest global energy efficiency standards. The following table details the energy efficiency of the Apple USB Power Adapter.

### Power Consumption for Apple USB Power Adapter

Mode	100V	115V	230V
Power adapter, no-load	0.011W	0.011W	0.011W
Power adapter efficiency	75%	75%	74%

### Battery chemistry

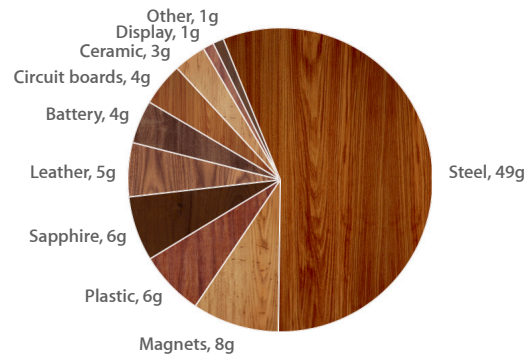
- Lithium-ion polymer
- Free of lead, cadmium, and mercury

## 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 the end of the product's life. Apple Watch cases are available in steel, aluminum, and gold—materials highly desired by recyclers. The chart below details the materials used in Apple Watch.

### Material Use for Apple Watch

42mm Stainless Steel Case with Apple Watch Leather Loop band<sup>2</sup>



### Packaging

The retail box for Apple Watch contains over 35 percent recycled content and the exterior of the carrying case for Apple Watch contains 50 percent post-consumer recycled content. The following table details the complete set of materials used in its packaging.

### Packaging Breakdown for Apple Watch

42mm Stainless Steel Case with Leather Loop band<sup>1</sup>

Material	Retail box	Retail and shipping box
Paper (corrugate, paperboard)	263g	475g
Post-consumer recycled polycarbonate	189g	189g
Polycarbonate/ABS plastic	143g	143g
Other plastics	18g	18g

The exterior of the Apple Watch carrying case is composed of 50 percent post-consumer recycled polycarbonate.

## 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, and the European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals, also known as the REACH regulation. Apple Watch goes further by incorporating more aggressive restrictions on mercury, brominated flame retardant (BFR), PVC, and beryllium.

In addition, we paid special attention to the materials that will be in prolonged skin contact and applied rigorous controls for them. We developed restrictions from leading standards and recommendations from toxicologists and dermatologists, international laws and directives, and Apple policies.

As part of our testing and evaluation process, both Apple and independent laboratories tested materials for the concentration of restricted chemicals. Toxicologists reviewed the test results to evaluate safety. Finally, we took the added step of using independent toxicologists to review the chemical formulation of each material that may come in prolonged contact with the skin.

Only materials that passed these reviews were acceptable for use in Apple Watch.



## 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/recycling](http://www.apple.com/recycling).

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## 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 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 regional distribution hubs. Transport of products from distribution hubs to the end customer is modeled using average distances based on regional geography.
- **Use:** User power consumption assumes a three-year period. Consumption patterns are modeled according to European Commission and U.S. Environmental Protection Agency computer eco-design studies. 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:** The energy efficiency values for the Apple USB Power Adapter are based on the following conditions:

- **Power adapter no-load:** Condition in which the Apple USB Power Adapter is connected to AC power, but not connected to Apple Watch.
- **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 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.

1. Product evaluation based on US configurations of 42mm Stainless Steel Case with Leather Loop band. Values will vary by configuration.

2. Excludes Apple Watch Magnetic Charging Cable and Apple USB Power Adapter. Mass will vary by configuration.