Apple Watch Series 3 (GPS)
Environmental Report

Date introduced
September 12, 2017

Environmental Status Report

Apple Watch Series 3 (GPS) is designed with the following features to reduce environmental impact:

- Arsenic-free glass
- Mercury-free
- Brominated flame retardant–free
- PVC-free
- Beryllium-free
- Low-carbon aluminum case
- Complies with European REACH regulation on nickel
- 100 percent of packaging fibers are sourced from responsibly managed forests, bamboo, waste sugarcane, or recycled paper.

Apple and the Environment

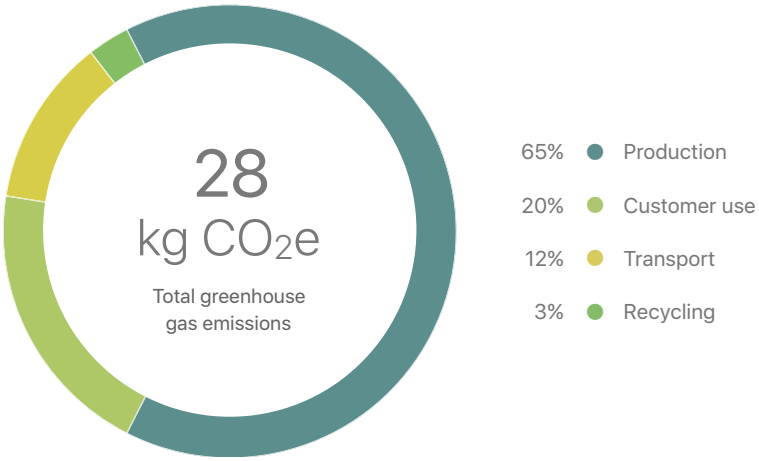
Apple believes that improving the environmental performance of our business starts with our products. The careful environmental management of our products throughout their life cycles includes controlling the quantity and types of materials used in their manufacture, improving their energy efficiency, and designing them for better recyclability. The information below details the environmental performance of Apple Watch Series 3 (GPS) 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 setting stringent design-related goals for material and energy efficiency, and by increasing use of renewable energy in our supply chain. For example, since we launched the first Apple Watch in 2015, Apple has minimized its carbon and materials footprints by sourcing aluminum that was smelted using hydroelectricity rather than fossil fuels, and reengineered the manufacturing process to reincorporate scrap aluminum. The chart below provides the estimated greenhouse gas emissions for Apple Watch Series 3 (GPS) over its life cycle.

Greenhouse Gas Emissions for Apple Watch Series 3 (GPS)

42mm Aluminum Case with Sport Band



Battery chemistry

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

Energy Efficiency

Apple Watch Series 3 (GPS) uses power-efficient components and software that intelligently manages power consumption. The following table details the energy efficiency of the Apple USB Power Adapter.

Power Consumption for Apple USB Power Adapter

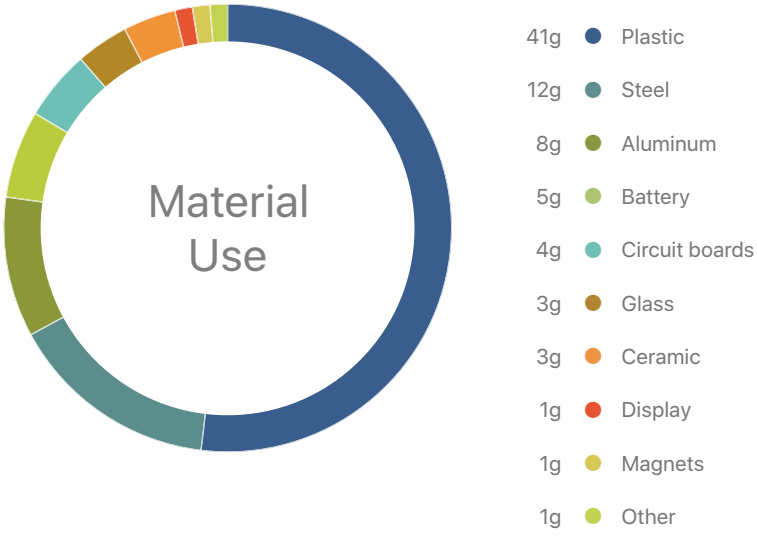
Mode	100V	115V	230V
Power adapter, no-load	0.014W	0.014W	0.012W
Power adapter efficiency	74.3%	74.3%	73.1%

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 and material waste generated at the end of the product's life. Apple Watch Series 3 (GPS) cases are made of aluminum—a material highly desired by recyclers. The chart below details the materials used in Apple Watch Series 3 (GPS).[2]

Material Use for Apple Watch Series 3 (GPS)

42mm Aluminum Case with Sport Band



Apple Watch Series 3 (GPS) retail packaging contains at least 39 percent recycled content.

Packaging

The retail packaging for Apple Watch Series 3 (GPS) is highly recyclable, and 100 percent of the fiber in its retail box is from either recycled content, bamboo, waste sugarcane, or responsibly managed forests. The following table details the complete set of materials used in the Apple Watch Series 3 (GPS) packaging.[1]

Packaging Breakdown for Apple Watch Series 3 (GPS)

Material	Retail box	Retail and shipping box
Fiber (corrugate, paperboard)	416g	579g
Plastic film	1g	7g

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, and the European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals, also known as the REACH regulation. Apple Watch Series 3 (GPS) goes further by incorporating more aggressive restrictions on mercury, brominated flame retardants (BFRs), 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 a list of restricted substances based on existing Apple policies, leading standards, international laws and directives, and recommendations from toxicologists and dermatologists.

Apple then tested and evaluated materials for the concentration of restricted substances, using both Apple and independent laboratories. Toxicologists reviewed the test results to evaluate safety. Finally, we took the added step of having toxicologists review the chemical formation of each material that may have prolonged contact with the skin.

Only materials that passed these reviews were acceptable for use in Apple Watch Series 3 (GPS).

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 products are sold, including at all Apple Stores. All products are processed in the country or region in which they are collected. 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 three-year period for power use by first owners. 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 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 for the Apple USB Power Adapter are based on the following conditions.

- **Power adapter, no-load:** Condition in which the Apple USB Power Adapter with the Apple Watch Magnetic Charging Cable (1m) is connected to AC power, but not connected to Apple Watch Series 3 (GPS).
- **Power adapter efficiency:** Average of the Apple USB Power Adapter with the Apple Watch Magnetic Charging 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 is available at www.apple.com/environment/reports.

1. Product evaluations based on U.S. configurations of 42mm Aluminum Case with Sport Band.

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