

# Product Environmental Report

## Galaxy S24

2024.01.17



At Samsung, we work to embed eco-conscious technology and innovation in all of our products. By considering sustainability throughout the product life cycle, we aim to inspire our customers to join us in our journey of building a better tomorrow.

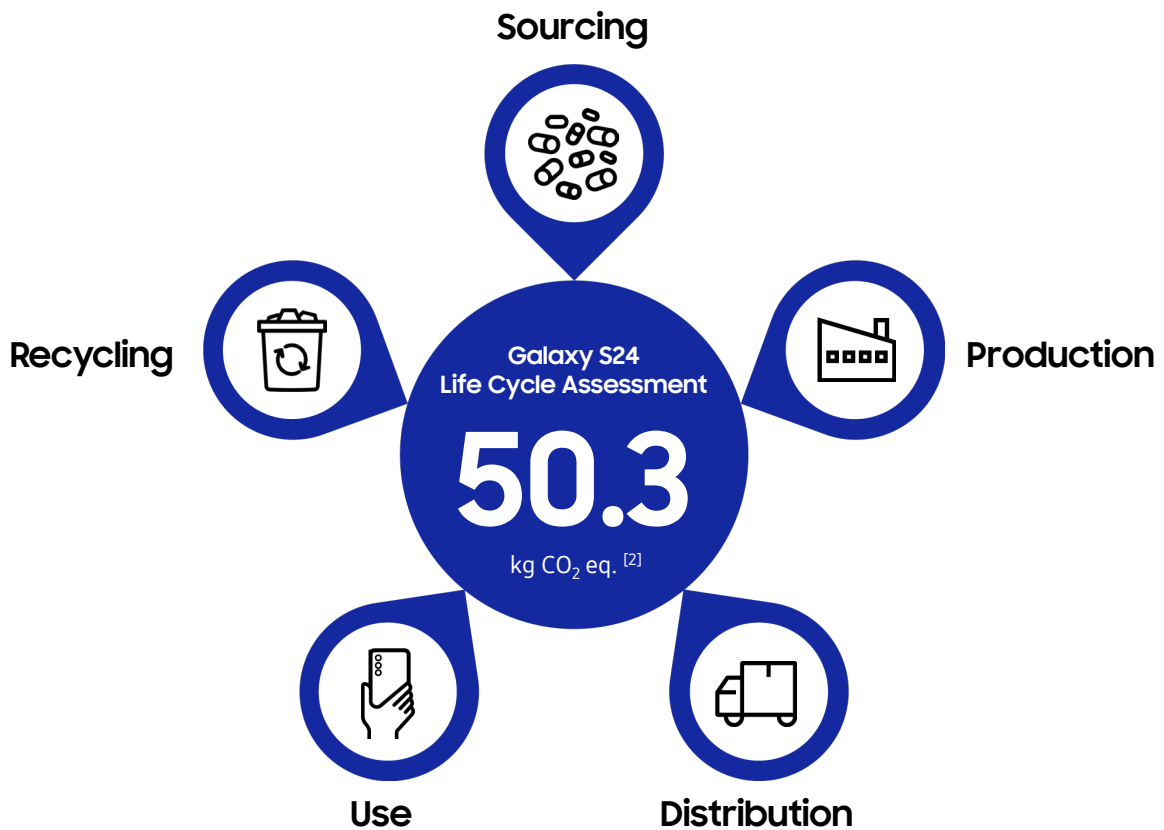


\* UL certified only for the US configuration. <sup>[1]</sup>

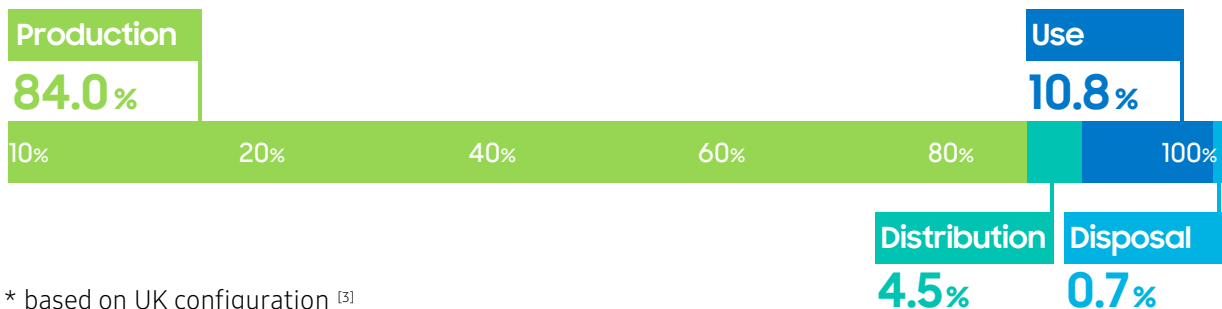
# Product Carbon Footprint

To understand the environmental impacts of our products, at Samsung Electronics, we assess a product’s entire life cycle, including the sourcing, production, distribution, product use and recycling phases.

At the production stage, we are aiming to expand the development and application of recycled materials with a lower carbon footprint. At the distribution stage, we are working to minimize packaging volume and weight to reduce carbon emissions. Through initiatives like improving the energy efficiency of chargers, we are trying to improve the environmental impact at the use stage.

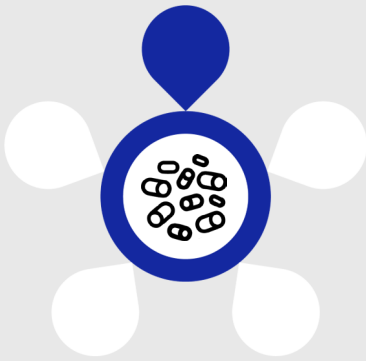


## Galaxy S24 life cycle carbon emissions



\* based on UK configuration <sup>[3]</sup>

# Sourcing <sup>[4]</sup>



Across the product lifecycle, from raw material sourcing to disposal and recycling, we are continuing our efforts to create a circular economy.

To build toward a circular system, we are using recycled materials and collecting e-waste to extract materials for reuse. By 2030, we aim for 50% of the plastic used in our DX products to incorporate recycled resin. By 2050, we anticipate this figure to increase to 100%.

The Galaxy S24 has newly introduced recycled cobalt, rare earth elements and steel. Furthermore, Samsung Galaxy S24 has a wider variety of recycled materials than any other Galaxy smartphone, including pre-consumer recycled aluminum and glass and post-consumer recycled plastics sourced from discarded fishing nets, PET bottles and water barrels.

## Plastic



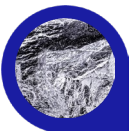
Recycled plastic is included in various components such as the speaker modules, front case, and deco film for the back glass. <sup>[5]</sup>

## Cobalt



Cobalt used in the S24 battery contains 10% recycled cobalt.

## Aluminum



Aluminum in the side key, volume key and SIM card tray contains 28% recycled aluminum, in the case of rear camera deco, 30%.

## Rare Earth Elements



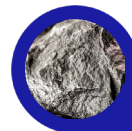
All magnets in the upper and lower speaker modules are made of 100% recycled rare earth elements.

## Glass



Glass in the front screen and back cover contains an average of 25% recycled glass.

## Steel



Steel in the upper and bottom speaker modules contains at least 40% recycled steel. <sup>[6]</sup>



Chemical Mgmt.

To prevent hazardous substances from entering our products, we inspect manufactured parts and raw materials rigorously through our chemical management system.

Our Standards for the Control of Substances Used in Products<sup>[7]</sup> are based on global regulations and standards, and we voluntarily established reduction plans for the use of potentially hazardous substances, such as polyvinyl chloride(PVC), brominated flame retardants(BFRs), beryllium, and antimony, as well as legally regulated substances.

# Production



We are expanding the use of renewable energy at our business sites around the world.

Energy infrastructure and regulations, which vary widely by jurisdiction, require region-specific transition plans.



Renewable Energy

Safety and health certification (ISO) at our production sites

**100%**

We plan to run all operations of the DX(Device eXperience) Division on renewable energy by 2027. <sup>[8]</sup>

All of our business sites where Galaxy S24 is produced have attained ISO14001(environmental management system) and ISO50001(energy management system) certifications. <sup>[9]</sup>

Company-wide, we plan to obtain a platinum-level Zero Waste to Landfill Certification, issued by safety certification organization Underwriters Laboratories(UL), for all global operations by 2025.



# Distribution



To reduce the environmental impact of our product packaging, we are replacing plastic packaging and protective films with paper and recycled materials to the extent possible.

We are also reducing the volume and weight of packaging to mitigate Greenhouse Gas emissions in the transportation and shipping process.



Our goal is to eliminate all single-use plastics in mobile product packaging by 2025. Since 2017, we have been exploring ways to eliminate single-use plastics in packaging by assessing every aspect of packaging design, down to the smallest details. <sup>[10]</sup>

Plastic In packaging **2.0%**

As a result, Galaxy S24 contains only 2.0% plastic in terms of total weight of the packaging. <sup>[11]</sup>

Reduced plastic in packaging **96.8%**

Compared to Galaxy S7, when we began our initiative to eliminate plastic packaging, we reduced the use of plastic in packaging for Galaxy S24 by 96.8%. <sup>[12]</sup>

Recycled paper **100%**

Paper used for the Galaxy S24 packaging box is 100% recycled paper. <sup>[13]</sup>



# Use



Environmental experts participate throughout product development at Samsung Electronics so that our customers can more sustainably use our devices.

During the product development phase, our stress tests help ensure the longevity and consistent performance of our products. This enables users to enjoy our products for longer periods of time.



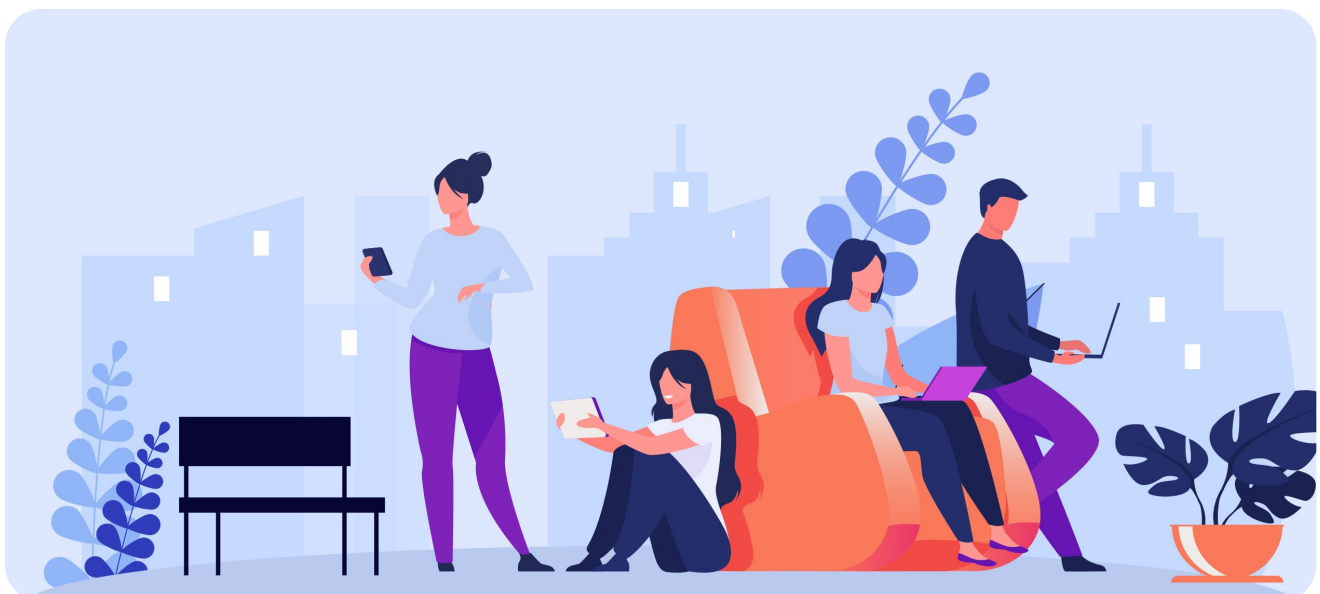
Repair & Reuse

Security Update & OS Upgrade <sup>[14]</sup>

**7 yrs & 7 gens**

Repairability is one of our main priorities in product development. In August 2022, we expanded the number of authorized and independent service providers, started a self-repair program in the US and will continue to expand this program.

Galaxy S24 has IP68 <sup>[15]</sup> water resistance and dust protection, and we provide seven generations of OS upgrades and seven years of security updates .





# Recycling



To promote the circular economy and a low-carbon society, we are expanding responsible recycling globally.

Samsung's local recycling programs provide collection services tailored to each region for customers disposing e-waste, and we take back all electrical and electronic waste regardless of product brand.



Collection

Samsung Electronics supports e-waste collection and recycling services in 75 countries around the world, including the US, Brazil, and Spain. We plan to expand the scope of our e-waste collection system to about 180 countries by 2030.

Collected electronic goods are sorted, pre-processed, and shredded to be recycled as materials. Some of the materials like plastic are used for new product manufacturing. We also internally operate Requirements for Recycling Service Partners that specify requirements such as compliance obligations related to EHS-related laws and regulations, supplier management, and prohibition of illegal waste exportation.



## Endnotes

1. Galaxy S24 series devices sold, distributed, and/or produced for the US market have received UL ECOLOGO Certification in accordance with UL110 Standard for Sustainability for Mobile Phones.  
<https://www.ul.com/el>
2. The Carbon Trust of the UK calculated greenhouse gases generated in the entire process from product production to disposal in accordance with the Carbon Footprint Evaluation Standard(PAS 2050) and obtained the 'CO<sub>2</sub> Measured' certification to evaluate product carbon emissions. Based on the certification results, Samsung Electronics continues to make efforts in the product development stage to improve the environmental characteristics of the product.
  - PAS 2050:2011 – Specification for the assessment of the life cycle greenhouse gas emissions of goods and services
  - Product Carbon Footprints : Requirements for Certification v2
  - Database : Footprint Expert v4.4, Ecoinvent 3.9.1
3. System boundary of Life Cycle Assessment
  - Production : Pre-manufacturing(Parts and materials constituting the products and its transportation) and Product assembly by Samsung Electronics / Distribution : From Vietnam to UK / Use : 3 years use / Disposal : Waste treatment of parts and material
4. The content of all recycled materials are figures that have undergone third-party verification based on ISO 14021, and the content was measured based on weight.
5. Recycled materials have undergone Environmental Claim Validation(ECV) by UL.  
Method : Environmental Claim Validation Procedure for Recycled content, UL 2809 – Fifth Edition
  - Contains minimum 80% PCM : Back Glass Deco Film
  - Contains minimum 20% PCM : Side Key, Volume Key, SIM Tray
  - Contains minimum 5% OBP + 15% PCM : Top & Bottom Speaker Module (Upper, Lower)
  - Contains minimum 10% PCM : Case Front
  - Contains minimum 10% pre-consumer recycled TPU : Side Key, Volume Key
  - \* OBP : Ocean Bound Plastic
  - \* PCM : Post Consumer Material
6. Recycled materials have undergone RECYCLED CONTENT CERTIFICATION by SCS Global Services.  
Method : SCS Recycled Content Standard V7.0
  - Contains minimum 40% Recycled Steel : Top & Bottom Speaker Module Upper
  - Contains minimum 70% Recycled Steel : Top & Bottom Speaker Module Lower
  - \* Recycled Steel content : A mix of post-consumer and pre-consumer recycled material
7. Standards for the Control of Substances Used in Products  
<https://www.samsung.com/us/sustainability/environment/environment-data/>
8. Samsung Electronics joined RE100, a global initiative to reduce indirect carbon emissions from power usage (Scope 2), and is pursuing the conversion of used electricity to renewable energy by 2050. First, Samsung Electronics aims to achieve its renewable energy target at all overseas operations by 2027. In the case of the US, China, and Europe, which have already reached this target, we plan to expand direct power purchase agreements (PPAs) centering on the regions equipped with active renewable energy policies and systems. The DX division aims to achieve its renewable energy target by 2027, both at home and abroad.



## Endnotes

**9.** Our factory sites are required to meet international standards for ISO14001(environmental management system) and ISO50001(energy management system) certifications. We also strive to ensure that our suppliers have robust occupational health and safety management systems in place by encouraging them to attain certification for international standards and reflect related outcomes in the comprehensive supplier evaluations. As of 2022, all business sites of Samsung Electronics have attained the certifications and 90% of suppliers subject to comprehensive partner evaluations have acquired the certification.

**10.** History of Galaxy S Eco-Conscious Packaging

<https://news.samsung.com/us/infographic-history-of-galaxy-s-eco-conscious-packaging/>

**11.** To meet the request of some clients, plastic shrink vinyl or PP sealing sticker is applied to certain packaging box variation. Percentage calculated based on total weight of plastic components used in packaging divided by total weight of packaging.

**12.** Calculation based on total weight of all plastic packaging components for any of the S24 series compared to total weight of all plastic packaging components for the S7.

**13.** 100% recycled paper was applied to the product package unit box, excluding PP sealing sticker and shrink vinyl at the request of some clients, and pulp tray inside packaging.

**14.** Availability and timing of Android OS upgrades and security updates may vary by device model and market.

**15.** Based on lab test conditions for submersion in up to 1.5 meters of freshwater for up to 30 minutes. Not advised for beach or pool use. Water and dust resistance of device is not permanent and may diminish over time because of normal wear and tear.

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## Recycling

Samsung established waste collection systems in each region as we work tirelessly to enhance the collection and recycling of waste products. We also offer product take-back and recycling services with local take-back legislation. We are always looking to expand to additional locations.

<https://www.samsung.com/us/sustainability/environment/environment-data/>

## Environmental Strategy

Samsung Electronics announced the New Environmental Strategy in September 2022 with the aim of addressing global environmental issues through our innovative technologies. This paradigm shift is essential for our sustainable growth and will create meaningful momentum to reinforce our competitiveness.

The New Environmental Strategy was developed based on our commitment to achieve net zero by 2050, joining the world's effort to combat climate change, maximize resource circularity to advance towards a circular economy, and continuously address environmental challenges with technological innovation. This effort is expected to bring positive change to the broader ecosystem of the ICT industry as we engage in the manufacturing and supply of an extensive range of products and services.

## Corporate Sustainability Management

Samsung is constantly striving to deliver innovative products and services across the value chain. This is rooted in our core values in economy, society and environment. Therefore, we monitor the financial and non-financial impacts that we exert on society in order to maximize our positive impacts while minimizing any negative ones.

<https://www.samsung.com/global/sustainability/main/>