

Product Carbon Footprint Report

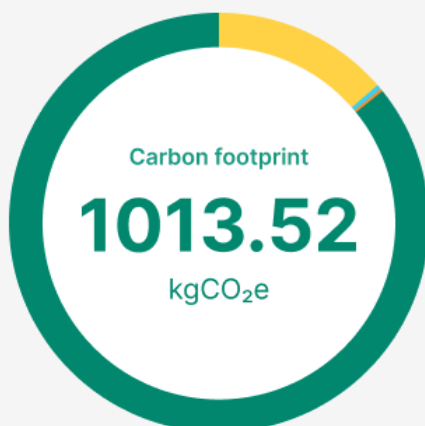
RackStation RS2423RP+II

From design to end-of-life, Synology is dedicated to improving the environmental impact of our products. As part of this commitment, we meticulously assess carbon impacts throughout each product's complete life cycle and provide lifetime carbon footprint estimates for our storage solutions, allowing customers to better understand their environmental impact.



Estimated carbon footprint and impact by life cycle stage

This evaluation encompasses factors such as material sourcing, manufacturing processes, transportation logistics, and end-of-life product management.



● Materials	138.11 kgCO₂e / 13.63%
Power supply	77.16 kgCO ₂ e / 7.61%
Mainboard	10.52 kgCO ₂ e / 3.49%
Components	14.27 kgCO ₂ e / 1.41%
Enclosure	7.76 kgCO ₂ e / 0.77%
Packaging	0.31 kgCO ₂ e / 0.03%
● Manufacturing	3.75 kgCO₂e / 0.37%
● Transportation	2.13 kgCO₂e / 0.21%
● Product use	869.53 kgCO₂e / 85.79%

We provide approximate equivalencies to convert these figures into more relatable terms. Please note that these estimations are solely for illustrative purposes and should not be used for formal emissions inventories or official carbon footprint assessments.



This product's carbon footprint is comparable to driving **2,581 miles** in a passenger car.



This product's carbon footprint is comparable to charging **81,940 smartphones**.

Calculations based on [US EPA](#) estimates.

Assumptions used for calculating carbon footprint

Country of origin	Taiwan
Usage life	3 years
Memory capacity	8 GB
HDD/SSD quantity	3.5" HDD x 12
Product weight	20.54 kg
Yearly total energy consumption	583 kWh

About the data

Synology’s life cycle assessment methodology adheres to ISO 14040/14044 standards. Data from SimaPro and the Ecoinvent database is used to estimate emissions throughout the product life cycle. Greenhouse gas emissions are quantified as CO2-equivalent (GtCO2-eq) emissions using weightings based on GWP100-AR6 from the 2022 IPCC Sixth Assessment Report.

Uncertainty

Calculating a product’s carbon footprint requires a comprehensive assessment of its entire life cycle. This involves estimating and quantifying the impacts of greenhouse gas emissions at each stage, including raw material production, transportation, product manufacturing, consumer use, and product disposal. The process utilizes actual audit data from first-tier suppliers and assembly plants, as well as information on the raw materials used by suppliers. However, the life cycle coefficients for the raw materials are primarily derived from the life cycle analysis database SimaPro, rather than from primary data.

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