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Catalyst 9500 48-port x 1/10/25G + 4-port 40/100G Switch

Life Cycle Assessment Summary: C9500-48Y4C

Goal and Scope

This summary presents the GHG emissions associated with the production, transport, use phase and end-of-life (EOL) of Cisco's C9500-48Y4C switch. It is based on the *Life Cycle Assessment Report: Catalyst C9500-48Y4C Switch*, which is in alignment with the International Organization for Standardization (ISO) Standards 14040 and 14044 on LCA (ISO, 2006) and can be found in the Environmental Sustainability section of cisco.com. The underlying report and this summary have not been critically reviewed and are therefore not ISO-conformant.

Table 1: C9500-48Y4C Technical Specifications

Technical Data	C9500-48Y4C
Product weight	9.55 kilograms
Typical power consumption	230 Watts
Dimensions	1.73 x 17.5 x 18.0 inches

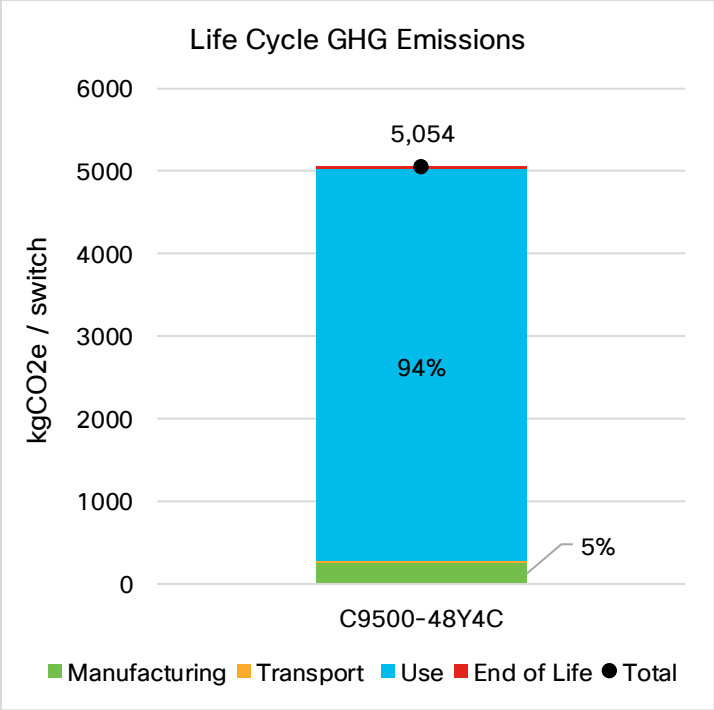
System Boundary

The model's system boundary was from cradle-to-grave for the life cycle inventory (LCI) and impact assessment and included raw material extraction and refinement, material transport, component manufacturing, assembly, testing, delivery, use phase and EOL. The product is disposed of at its EOL assuming a 5 year lifespan.

The study assumes most electronics production occurs in Asia and all material inputs were matched to datasets that are either global averages or Chinese datasets. Manufacturing was modeled specifically for China as the manufacturing country in terms of energy consumption. The use phase was assumed to take place in the United States and EOL was assumed as a global average.

Results

The GHG emissions (according to IPCC AR6 GWP 100, excluding biogenic carbon) per C9500-48Y4C switch were 5,054 kg CO2e. The GHG emissions were categorized into different life cycle stages covering manufacturing, transport, use phase and EOL. The use phase dominates the overall GHG emissions impact, contributing 94 percent of the total for the C9500-48Y4C switch. The manufacturing phase was the second-largest driver of GHG emissions, accounting for 5 percent of total GHG emissions per switch. Within manufacturing components, key electrical components accounted for 67 percent of impacts, followed by electro-mechanical components (17 percent) and mechanical components (13 percent).



Life Cycle Phase	GHG Emissions (kg CO2e)
Manufacturing	250
Transport	16
Use	4,761
End of Life	27
Total	5,054

Note: Figures may not total 100 percent due to rounding of underlying data.

Limitations

There are a few key data limitations associated with electrical components and the use of secondary data for assembly and testing. Within the BOM, electrical components were matched to the components available in the LCA for Experts (formerly GaBi) and ecoinvent databases, which were not always an exact match. Proxied components were scaled by length and width or mass to reflect the number and type of components in the product under study.

Manufacturing burdens of the assembly and testing of the product were proxied using secondary datasets from ecoinvent. A limitation of the proxies is that they do not track operation improvements or changes over time.

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Further information on Cisco's approach to Life Cycle Assessments (LCAs) is available at Cisco's Environmental, Social, and Governance (ESG) Reporting Hub, at https://www.cisco.com/c/m/en_us/about/csr/esg-hub.html