

Life Cycle Assessment: Western Digital CH SN560 (Calypso X2) NVMe Solid State Drive (SSD)

Product Description:

Model	SDCPTD-512G-1024
Product Type	Client SSD
Product Weight	3.03 gm
Packaging Weight	6.5 gm
Storage Capacity	0.512 Terabyte ¹
Technology	BiCS5
Form Factor	M.2; 2230
Application	Client (Gaming Consoles)



LCA Calculation Basis:

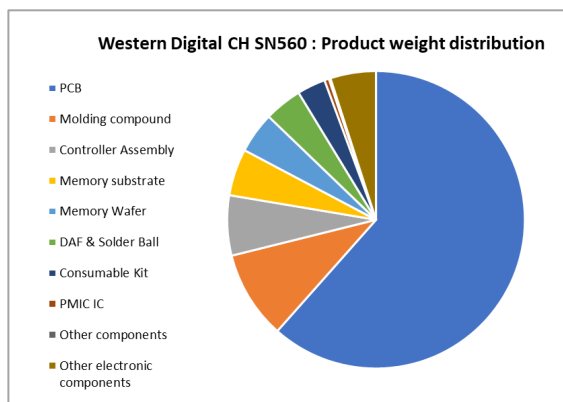
Standard	ISO 14040:2006 and 14044:2006
LCA Software	LCA for Experts (previously Gabi ts) [Version 10.6.2.9]
Impact Assessment Method	Life cycle impact assessment classification and characterization factors according to the Intergovernmental Panel on Climate Change (IPCC) 6th Assessment Report for Global Warming Potential (GWP), with 100 years of time horizon for kg CO ₂ equivalent (carbon footprint)
Database	LCA for Experts 2022 LCI and ecoinvent 3.7
System Boundary	The system boundaries include: <ul style="list-style-type: none"> • Manufacturing (extraction of raw materials, upstream material preparation, electronic component manufacturing, subassembly manufacturing and final assembly of product) • Distribution to customer located in China • Five years of product use • End-of-life treatment according to waste management statistics in the customer country
Validation of Study	Validated through 3rd party critical review (EarthShift Global)

i One terabyte (TB) is equal to one trillion bytes. Actual user capacity may be less due to operating environment.

ii *Absolute climate change impact values & contribution details for each phase will be available upon request

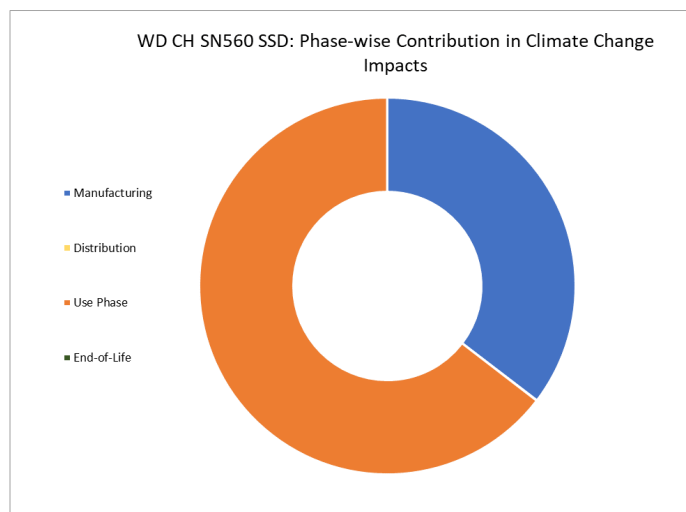
Components Used:

The pie chart shows weight contribution of various components of the WD CH SN560 SSD. Printed Circuit Board (PCB) [62%], followed by Molding Compound [10%], Controller Assembly [7%], Memory Substrate [5%], Memory Wafer [4%], DAF & Solder Ball [4%]. Other electronic and non-electronic components weight is less than 1%.



Breakdown of Carbon Footprint by Life Cycle Stagesⁱⁱ:

[65%] of the climate change impacts are from the Use phase, followed by the Manufacturing phase [35%], Distribution phase and End-of-Life phase have minimal impact [<1%]. Use phase impacts are primarily attributable to energy consumed by the product during its useful life. Manufacturing impacts are driven by resource consumption during the product assembly & sub-assembly processes, distribution phase impacts are focused on transportation of the product from the manufacturing location to the customer location.



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