

Life Cycle Assessment: SanDisk Ultra® MicroSD UHS-I Card SDSQUA46AN

Product Description:

Model	SDSQUA4-064G-GN6MN
Product Type	MicroSD Card
Product Weight	0.26 gm
Packaging Weight	15.28 gm
Storage Capacity	64 Gigabyte ⁱ
Technology	BiCS4
Accessory	No [Without Adapter]
Application	Smartphone



LCA Calculation Basis:

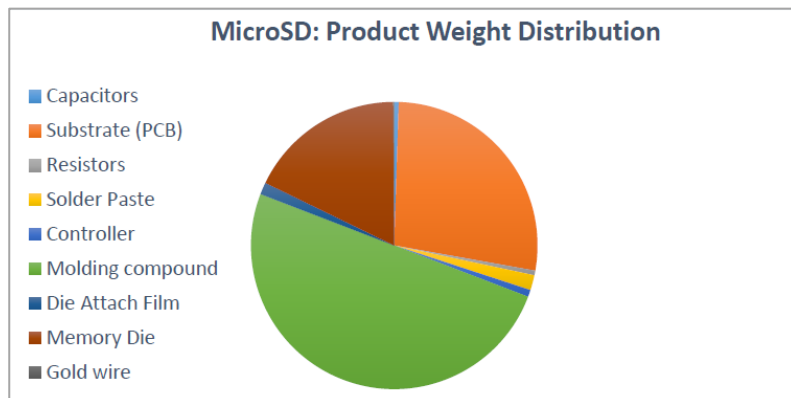
Standard	ISO 14040:2006 and 14044:2006
LCA Software	GaBi ts [Version 10.5.0.78]
Impact Assessment Method	Life cycle impact assessment classification and characterization factors according to the Intergovernmental Panel on Climate Change (IPCC) 5th Assessment Report for Global Warming Potential (GWP), with 100 years of time horizon for kg CO ₂ equivalent (carbon footprint)
Database	GaBi 2021 LCI and ecoinvent 3.7.1
System Boundary	<p>The system boundaries include:</p> <ul style="list-style-type: none"> • Manufacturing (extraction of raw materials, upstream material preparation, component manufacturing, subassembly manufacturing and final assembly of product) • Distribution to customer located in Germany • Ten 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 (SPIL Pvt. Ltd.)

ⁱ One gigabyte (GB) is equal to one billion 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

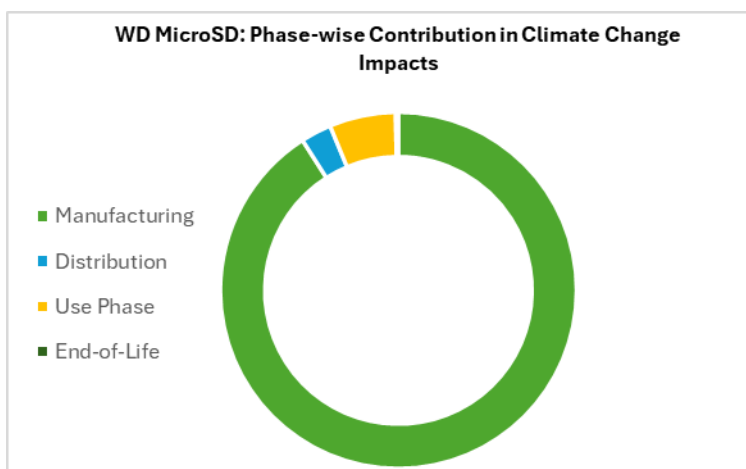
Components Used:

The pie chart shows weight contribution of various components of the MicroSD. Molding compound contributes 50% of the weight, followed by Substrate (PCB) [27%], Memory Die [18%]. Other parts contribute to remaining 5%.



Breakdown of Carbon Footprint by Life Cycle Stagesⁱⁱ:

Climate change impacts are dominated by the device manufacturing phase [91%], followed by use [6%], distribution [3%] and end-of-life [<1%]. Manufacturing impacts are primarily attributed to resource consumption during wafer fabrication processes. Use phase impacts are from energy consumed by the product during its useful life. Distribution phase impacts are focused on transportation of the product from the manufacturing location to the customer location.



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