



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-BF-23007E

Japan EPD Program by SuMPO

Sustainable Management Promotion Organization
14-8, Uchikanda 1-chome, Chiyoda-ku, Tokyo Japan
<https://ecoleaf-label.jp/>

Panasonic Connect Co., Ltd.

Toughbook FZ-40 Series



Functional unit

Per unit of product

System boundary

■ final products □ intermediate products

Raw material acquisition, Production, Distribution

Use & maintenance, End-of-Life

Main specifications of the product

Model name : Toughbook FZ-40 series

CPU : Intel® Core™ i5-1145G7 processor, 1.10GHz

or Intel® Core™ i7-1185G7 processor, 1.20GHz

Display : 14.0-inch Full HD (1920 x 1080 pixels)

Capacitive multi-touch panel

Weight : approx. 3.41kg

Expected usage life : 4 years

*This product is sold for overseas and is for business use.

Company Information

Panasonic Operational Excellence Co., Ltd.

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TEL:06-6908-1171

Registration#	JR-BF-23007E
PCR number	PA-520000-BF-04
PCR name	IT equipments
Publication date	9/29/2023
Verification date	9/11/2023
Verification method	Product-by-product
Verification#	JV-BF-23007
Expiration date	9/10/2028

PCR review was conducted by:

Approval date	8/15/2023
PCR review panel chair	Ken Yamagishi (Affiliation Sustainable Management Promotion Organization)

Third party verifier* Tetsuya Okuyama

The reviewer has 14 years of experience in the LCA field.

The reviewer has reviewed 61 LCAs has conducted 184 LCAs as of the date of verification.

Independent verification of data & declaration in accordance with ISO14025

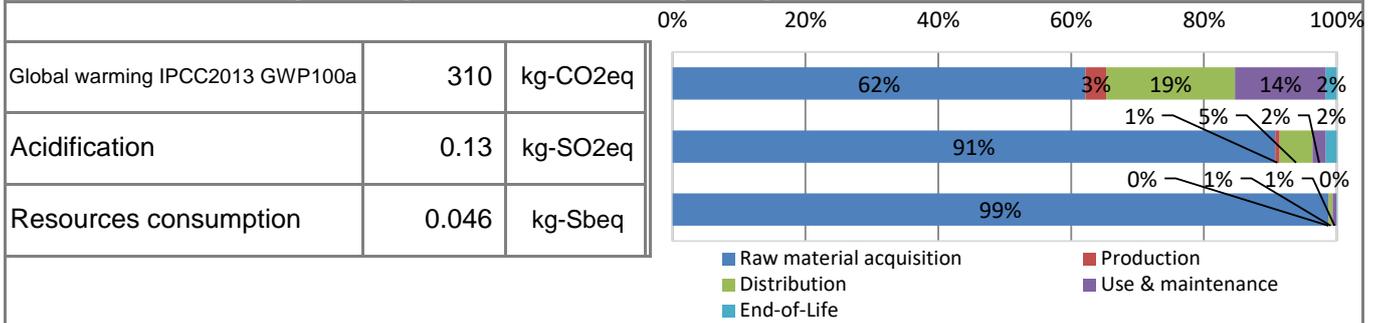
internal external

*Auditor's name is stated if system certification has been performed.

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1. Results of life cycle impact assessment (LCIA)



Parameter	stage	Unit	Total	Raw material acquisition	Production	Distribution	Use & maintenance	End-of-Life
Global warming IPCC2013 GWP100a		kg-CO ₂ eq	3.1E+02	1.9E+02	9.6E+00	6.0E+01	4.2E+01	5.1E+00
Ozone layer destruction		kg-CFC-11eq	3.0E-04	3.0E-04	8.0E-08	5.0E-10	2.6E-10	1.3E-08
Acidification		kg-SO ₂ eq	1.3E-01	1.2E-01	9.1E-04	6.7E-03	2.7E-03	2.3E-03
Urban area air pollution		kg-SO ₂ eq	9.0E-02	8.5E-02	3.6E-04	3.4E-03	8.0E-04	1.0E-03
Photochemical ozone		kg-C ₂ H ₄ eq	7.9E-03	2.0E-03	1.7E-05	5.7E-03	3.3E-05	1.1E-04
Toxic chemicals(cancer)		kg-C ₆ H ₆ eq	1.9E-02	1.9E-02	2.5E-06	2.0E-08	2.2E-06	2.6E-05
Toxic chemicals(chronic disease)		kg-C ₆ H ₆ eq	1.5E-04	1.5E-04	3.6E-07	2.9E-09	3.2E-07	3.9E-06
Aquatic toxicity		kg-C ₆ H ₆ eq	1.9E-01	1.9E-01	5.5E-04	4.5E-06	4.9E-04	6.0E-03
Biological toxicity		kg-C ₆ H ₆ eq	8.1E+00	7.9E+00	1.3E-02	1.1E-04	1.2E-02	1.4E-01
Eutrophication		kg-PO ₄ ³⁻ eq	5.0E-03	6.3E-04	4.4E-03	4.3E-13	3.7E-13	2.8E-05
Land use(Occupation)		m ² /year	2.2E+00	1.9E+00	7.0E-02	1.2E-01	8.5E-02	1.8E-02
Land use(Transformation)		m ²	4.9E-02	4.4E-02	1.4E-03	2.4E-03	1.7E-03	3.7E-04
Resources consumption		kg-Sbeq	4.6E-02	4.6E-02	5.5E-05	2.6E-04	2.8E-04	2.1E-05

2. Life cycle inventory analysis (LCI)

Parameter	Unit
Non-renewable material resources	1.9E+01 kg
Non-renewable energy resources	9.9E+01 kg
Non-renewable energy resources	4.2E+03 MJ
Renewable material resources	1.8E+01 kg
Renewable primary energy	1.2E+02 MJ
Consumption of freshwater	3.5E-01 m ³
Emissions, carbon dioxide (fossil), air, unspecified	2.6E+02 kg
Resources, crude oil, 44.7MJ/kg, ground, Non-renewable energy resources	4.3E+01 kg
Emissions, volatile organic compound, air, unspecified	1.4E-05 kg

3. Material composition

Material	Unit
Magnesium	36 %
Resin	21 %
Glass	7.3 %
Aluminium	6.7 %
Copper	6.1 %
Nickel	6.1 %
Iron	4.6 %
Elastomere	2.9 %
Stainless steel	2.8 %
Other metals	2.6 %
Other	2.4 %
Electrolyte	1.0 %
Zinc	0.0 %



4. Waste to disposal		
Parameter		Unit
Hazardous waste	0.00E+00	kg
Non-hazardous waste.	5.1E+00	kg
Treated MSW for landfill	1.8E-02	kg
Treated industrial waste for landfill	5.1E+00	kg

*Data derived from LCA and not assigned to the impact categories of LCIA

5. Additional explanation

- Product name: FZ-40
- Product type of scenario used: Notebook personal computer, Tablet terminal
- Measurement conditions: Measurements were made according to the measurement method specified in the "Computers Specification Version 8.0".
- The estimated usage period was determined based on the statutory useful life for depreciation.

Main product specifications

- CPU type and clock frequency: Intel® Core™ i5-1145G7 processor, 1.10GHz or Intel® Core™ i7-1185G7 processor, 1.20GHz
- Main memory capacity: 16 GB
- Memory capacity: 512 GB (PCIe)
- Drive type: SSD

Display size and type: 14.0" Full HD (1920 x 1080 pixels) (16:9) Capacitive multi-touch panel (finger/pen/glove/water drop mode auto switching function) (AR processing), Minimum brightness approx. 1 cd/m2 (Average), Maximum brightness approx. 1200 cd/m2 (Average)

- Main unit weight: Approx. 3.41 kg
- Assumed users of the target: Business use
- Disposal scenario: Since this is a product for overseas market, it is difficult to set the amount of recycling. Therefore, the recycling rate was calculated as 0% in accordance with annex E: disposal and recycling scenarios of PCR.

6-1. Supplementary environmental information

The product complies with the EU's RoHS Directive.
 EU Declaration of Conformity, Document Number D21-MSBD-C010-05
<https://www.ptc.panasonic.eu/compliance-documents?category=Select+product+name&type=>
 This product and its main components are manufactured in an ISO 14001 certified factory.
 Certification ID, LRQA 10091194
https://holdings.panasonic.jp/corporate/sustainability/pdf/eco_isolist2021.pdf

7. Assumptions of secondary data used

IDEA v2.1.3 and program registration intensity v1.13.

8. Remarks

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- For data quantification, please refer to PCR and Rules on quantification and declaration.
- Comparative assertion is permitted only when Rules on quantification and declaration are satisfied.
(Reference URL : <https://ecoleaf-label.jp/regulation/>)