Product Environmental Profile

Eaton Bussmann Series High Speed Square Body Fuse 170M, Size 00, DIN 43653 IEC

Representative product	170M2620 (FUSE 350A 690V 00/80 AR UR) Product Category: Other Equipment (Passive Product – Non-Continuous Operation)
Description of the product	The Eaton 170M2620 is a high-performance fuse from the Bussmann series, designed for demanding industrial applications such as semiconductor protection, DC drives, and power converters. With a current rating of 350A and voltage ratings of 690V, it offers robust protection and reliability. This fuse features a square body with blade-end connections and a top-mounted fuse status indicator. Its breaking capacity of 200 kA ensures safe interruption of high fault currents, making it ideal for critical power systems.
Homogeneous Environmental Families Covered	The PEP concerns the following product offerings from Eaton Bussmann Series as mentioned below: • 170M2614 FUSE 100A 690V 00/80 AR UR • 170M2615 FUSE 125A 690V 00/80 AR UR • 170M2616 FUSE 160A 690V 00/80 AR UR • 170M2617 FUSE 200A 690V 00/80 AR UR • 170M2618 FUSE 250A 690V 00/80 AR UR • 170M2619 FUSE 315A 690V 00/80 AR UR • 170M2621 FUSE 400A 690V 00/80 AR UR
Functional unit	"To Protect the circuit for 20 Years of installation against the short circuit and 690 Vac rated voltage."
Company information	Eaton Power Quality Pvt Ltd ,2, EVR Street, Sedarpet Indl. Estate, Sedarapet, Puducherry 605111, India Email: productstewardship-es@eaton.com

Constituent materials			
Reference product mass	2.65E-01 kg (with packaging)		
Category pep material	**Material constituent**	**Mass (kg)**	**% contribution**
Metals	Aluminum	9.37E-02	35.4%
Metals	Copper	6.71E-02	25.3%
Other	Quartz Sand	4.05E-02	15.3%
Other	Corrugated Cardboard	2.56E-02	9.7%

Metals	Brass	1.73E-02	6.5%
Metals	Stainless Steel	8.17E-03	3.1%
Other	Wood	6.08E-03	2.3%
Metals	Steel	3.32E-03	1.3%
Plastics	Polycarbonate	9.30E-04	0.4%
Plastics	Polyethylene Low Density Granulate	8.91E-04	0.3%
Other	Paper	8.49E-04	0.3%
Metals	Silver	1.60E-04	0.1%
Other	Glue	1.04E-04	<0.1%
Plastics	Silicon	6.53E-05	<0.1%
Other	Sodium Oxide	5.10E-05	<0.1%
Other	Miscellaneous	2.45E-07	<0.1%
Total		2.65E-01	100.0%

Substance Assessment
The representative product is compliant with the EU-RoHS Directive (2011/65/EU) without exemption and the product does not contain substances as Substance-of-Very-High-Concern (SVHC) on the Candidate List of the EU-REACH Regulation (1907/2006/EC).

Additional Environmental Information	
Manufacturing	The reference product is assembled at an Eaton plant Puducherry, India holding management system certifications according to ISO 14001 standards.R
Distribution	Eaton is committed to minimizing weight and volume of product and packaging with focus to optimize transport efficiency.
Installation	The installation process does not require any energy consumption and there is no waste other than the obsolete product packaging generated during this step.
Use	The product requires energy consumption during operation.
End of life	The recyclability rate of the overall product is 31.7%. The rate is calculated based on the method described in Table 7 PCR-ed4-EN-2021 09 06 Guidelines for end-of-life information provided by manufacturers and recyclers and for recyclability rate calculation of electrical and electronic equipment.

Environmental Impacts	
The calculation of the environmental impacts is the result of the Product's Life Cycle Analysis in accordance with ISO 14040/44, covering the entire lifecycle, i.e., "Cradle-to-Grave" including the following life cycle phases: production, distribution, installation, use and end of life. System modelling was carried out using the commercial LCA software EIME v6.3.0.1 with database version CODDE-2025-04. Indicators Set: PEF EF 3.1 (Compliance: PEP ed.4, EN15804+A2) v2.0	
Manufacturing Phase	The product is assembled as well as packed at Eaton Puducherry, India and then shipped to its last logistics platform in Rheinbach, Germany. Energy model used: India
Distribution Phase	Distribution of the product in its packaging from Eaton's last logistics platform to the installation place in Europe is considered as per PCR rules.

Installation Phase	Product is installed in Europe. Installation of product and treatment of packaging waste are considered in this phase. There is no energy consumption for reference product. Energy model used: Europe
Use Phase	Reference lifetime: 20 Years The load rate and use rate for use phase calculation have been referred from PSR-0005-ed3.1-EN-2023 12 08 for respective product category for Commercial Usage. The Total losses are 283.82 kWh over the 20 years. Productsdo not require any maintenance/replacement during useful life. Energy model used: Europe
End of life Phase	Product disposed of with WEEE guidelines. Energy model used: Europe
Module-D	Module D is calculated according to PCR-ed4-EN-2021 09 06 based on the materials recycled and the modelled end-of-life scenario. It expresses the net benefits and loads beyond the boundaries of the system and are not to be included in the life cycle totals.

Environmental Impact Indicators: Mandatory

Mandatory environmental impact indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B6 - Operational energy use	C1-C4 - End of life	D - Benefits and loads beyond the system boundaries
Climate change – total (GWP)	kg CO2 eq.	1.16E+02	8.04E-01	5.95E-02	9.01E-02	1.15E+02	2.22E-01	-1.55E-01
Climate change - fossil fuels (GWP-f)	kg CO2 eq.	1.14E+02	8.23E-01	5.95E-02	3.77E-02	1.12E+02	1.54E-01	-1.78E-01
Climate change – biogenics (GWP-b)	kg CO2 eq.	2.69E+00	-1.90E-02	2.43E-07	5.24E-02	2.59E+00	6.81E-02	2.30E-02
Climate change - land use and land use transformation (GWP-lu)	kg CO2 eq.	1.51E-06	1.39E-06	9.00E-08	4.85E-10	0.00E+00	3.37E-08	0.00E+00
Ozone depletion (ODP)	kg eq. CFC-11	6.27E-07	1.10E-07	7.22E-10	4.57E-10	5.09E-07	6.46E-09	-4.41E-08
Acidification (AP)	mole of H+ eq.	6.44E-01	2.50E-02	9.40E-05	9.57E-05	6.18E-01	6.95E-04	-8.17E-03
Freshwater eutrophication (EP-fw)	kg P eq.	2.94E-04	1.84E-06	2.22E-07	4.12E-07	2.87E-04	4.43E-06	-8.23E-07
Marine aquatic eutrophication (EP-m)	kg of N eq.	7.29E-02	9.19E-04	1.70E-05	4.23E-05	7.18E-02	1.32E-04	-1.93E-04
Terrestrial eutrophication (EP-t)	mole of N eq.	1.16E+00	1.03E-02	1.87E-04	2.91E-04	1.15E+00	1.55E-03	-2.10E-03
Photochemical ozone formation (POCP)	kg of NMVOC eq.	2.33E-01	4.43E-03	6.04E-05	6.88E-05	2.28E-01	3.86E-04	-1.10E-03
Depletion of abiotic resources – elements (ADPe)	kg eq. Sb	4.68E-04	4.30E-04	2.12E-08	1.72E-09	3.88E-05	2.14E-08	-1.69E-04
Depletion of abiotic resources - fossil fuels (ADP-f)	MJ	2.82E+03	1.42E+01	1.06E+00	3.14E-01	2.80E+03	2.19E+00	-2.95E+00
Water scarcity (WDP)	m3 of eq.. deprivation worldwide	1.01E+01	1.08E+00	2.14E-03	2.52E-03	8.99E+00	1.84E-02	-4.13E-01

*Only B6 (Energy Consumption) are taken into account, the other sub-modules of the use phase (B1, B2, B3-B5, B7) are zero.

Inventory Flow Indicators: Mandatory

Inventory flow indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B6 - Operational energy use	C1-C4 - End of life	D - Benefits and loads beyond the system boundaries
Use of renewable primary energy, excluding renewable primary energy resources used as raw materials	MJ	6.71E+02	8.83E-01	3.33E-03	6.91E-02	6.70E+02	1.78E-01	-1.89E-01
Use of renewable primary energy resources used as raw materials	MJ	5.76E-01	5.76E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.13E-01
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	6.71E+02	1.46E+00	3.33E-03	6.91E-02	6.70E+02	1.78E-01	-6.02E-01
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	MJ	2.82E+03	1.41E+01	1.06E+00	3.14E-01	2.80E+03	2.19E+00	-2.94E+00
Use of non-renewable primary energy resources used as raw materials	MJ	8.90E-02	8.90E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.57E-02
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2.82E+03	1.42E+01	1.06E+00	3.14E-01	2.80E+03	2.19E+00	-2.95E+00
Use of secondary materials	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m3	2.36E-01	2.51E-02	4.99E-05	1.89E-04	2.10E-01	5.25E-04	-9.62E-03
Hazardous waste disposed of	kg	2.01E+01	1.66E+01	2.49E-04	2.80E-03	3.29E+00	2.86E-01	-6.63E+00
Non-hazardous waste disposed of	kg	1.82E+01	2.45E-01	5.52E-03	1.33E-02	1.78E+01	1.20E-01	-6.95E-02
Radioactive waste disposed of	kg	4.02E-03	5.30E-05	4.37E-06	2.00E-06	3.96E-03	8.09E-06	-2.61E-05
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	8.31E-02	4.30E-08	0.00E+00	2.32E-02	0.00E+00	5.99E-02	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ by energy vector	2.15E-02	0.00E+00	0.00E+00	2.01E-03	0.00E+00	1.95E-02	0.00E+00
Biogenic carbon content of the product	kg of C.	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the associated packaging	kg of C.	1.37E-02	1.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*Only B6 (Energy Consumption) are taken into account, the other sub-modules of the use phase (B1, B2, B3-B5, B7) are zero.

Environmental Impact Indicators: Optional

Optional Environmental impact indicators	Units	Sum	A1-A3 - Manufacturing	A4 - Distribution	A5 - Installation	B6 - Operational energy use	C1-C4 - End of life	D - Benefits and loads beyond the system boundaries
Emission of fine particles	incidence of diseases	5.00E-06	1.63E-07	8.06E-10	5.68E-10	4.83E-06	4.55E-09	-6.18E-08
Ionizing radiation, human health	kBq of U235 eq.	1.59E+02	1.80E+00	2.11E-03	4.51E-03	1.57E+02	4.58E-02	-1.43E-01
Ecotoxicity, fresh water	CTUe	1.92E+02	9.05E+00	1.74E+00	4.60E-01	1.78E+02	2.11E+00	-2.69E+00
Human toxicity, cancer effects	CTUh	1.25E-07	1.08E-07	1.17E-11	3.07E-09	1.43E-08	2.70E-11	-9.16E-08
Human toxicity, non-cancer effects	CTUh	6.32E-07	2.79E-07	2.22E-10	1.02E-10	3.51E-07	1.24E-09	-1.07E-07
Impacts related to land use/soil quality	-	3.01E+00	6.06E-03	2.55E-04	1.17E-04	3.00E+00	2.28E-03	-1.63E-04
Total use of primary energy during the life cycle	MJ	3.49E+03	1.57E+01	1.06E+00	3.83E-01	3.47E+03	2.37E+00	-3.56E+00

*Only B6 (Energy Consumption) are taken into account, the other sub-modules of the use phase (B1, B2, B3-B5, B7) are zero.

To evaluate the environmental impact of other products covered by this PEP, multiply the impact figures by

Factors for Manufacturing, Distribution, Installation, End-of-Life, and Module-D Phase:

Product Number	Description	Phases	GWP	GWP-f	GWP-b	GWP-lu	ODP	AP	Ep-fw	Ep-m	Ep-t	POCP	ADP-e	ADP-f	WDP
170M2620 (Reference)	FUSE 350A 690V 00/80 AR UR	All Phase Except Use Phase	1.00												
170M2619	FUSE 315A 690V 00/80 AR UR	All Phase Except Use Phase	1.00												
170M2621	FUSE 400A 690V 00/80 AR UR	All Phase Except Use Phase	1.00												
170M2617	FUSE 200A 690V 00/80 AR UR	Manufacturing	0.98	0.98	1.10	1.02	1.31	0.94	0.89	0.92	0.93	0.92	0.74	1.01	0.99
		Distribution	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
		Installation	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		End of Life	0.95	0.97	0.91	0.98	0.96	0.96	1.00	0.95	0.95	0.95	0.96	0.96	0.97
		Module-D	0.97	0.98	1.01	1.00	0.97	0.98	0.91	0.97	0.97	0.97	0.75	0.98	0.98
170M2614	FUSE 100A 690V 00/80 AR UR	Manufacturing	0.98	0.98	1.10	1.02	1.31	0.94	0.89	0.92	0.93	0.92	0.74	1.01	0.99
		Distribution	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
		Installation	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Product Number	Description	Phases	GWP	GWP-f	GWP-b	GWP-lu	ODP	AP	Ep-fw	Ep-m	Ep-t	POCP	ADP-e	ADP-f	WDP
		End of Life	0.95	0.97	0.91	0.98	0.96	0.96	1.00	0.95	0.95	0.95	0.96	0.96	0.97
		Module-D	0.97	0.98	1.01	1.00	0.97	0.98	0.91	0.97	0.97	0.97	0.75	0.98	0.98
170M2615	FUSE 125A 690V 00/80 AR UR	Manufacturing	0.98	0.98	1.10	1.02	1.31	0.94	0.89	0.92	0.93	0.92	0.74	1.01	0.99
		Distribution	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
		Installation	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		End of Life	0.95	0.97	0.91	0.98	0.96	0.96	1.00	0.95	0.95	0.95	0.96	0.96	0.97
		Module-D	0.97	0.98	1.01	1.00	0.97	0.98	0.91	0.97	0.97	0.97	0.75	0.98	0.98
170M2616	FUSE 160A 690V 00/80 AR UR	Manufacturing	0.98	0.98	1.10	1.02	1.31	0.94	0.89	0.92	0.93	0.92	0.74	1.01	0.99
		Distribution	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
		Installation	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		End of Life	0.95	0.97	0.91	0.98	0.96	0.96	1.00	0.95	0.95	0.95	0.96	0.96	0.97
		Module-D	0.97	0.98	1.01	1.00	0.97	0.98	0.91	0.97	0.97	0.97	0.75	0.98	0.98
170M2618	FUSE 250A 690V 00/80 AR UR	Manufacturing	0.98	0.98	1.10	1.02	1.31	0.94	0.89	0.92	0.93	0.92	0.74	1.01	0.99
		Distribution	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
		Installation	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		End of Life	0.95	0.97	0.91	0.98	0.96	0.96	1.00	0.95	0.95	0.95	0.96	0.96	0.97
		Module-D	0.97	0.98	1.01	1.00	0.97	0.98	0.91	0.97	0.97	0.97	0.75	0.98	0.98

Multiplying Factors for Use Phase for Homogeneous Products:

Part Number	Product Description	Heat Dissipation (W)	Use Phase Extrapolation Factors (kwh)
170M2620 (Reference)	FUSE 350A 690V 00/80 AR UR	60	1.00
170M2619	FUSE 315A 690V 00/80 AR UR	55	0.92
170M2621	FUSE 400A 690V 00/80 AR UR	70	1.17
170M2617	FUSE 200A 690V 00/80 AR UR	35	0.58
170M2614	FUSE 100A 690V 00/80 AR UR	20	0.33
170M2615	FUSE 125A 690V 00/80 AR UR	25	0.42
170M2616	FUSE 160A 690V 00/80 AR UR	30	0.50
170M2618	FUSE 250A 690V 00/80 AR UR	45	0.75

Disclaimer
This Product Environmental Profile and its content is based on information available to us. It refers to the product at the date of issue. We make no express or implied representations or warranties with respect to the information contained herein.

Registration Number	EATO-00446-V01.01-EN	*Drafting rules*	PCR-ed4-EN-2021 09 06
Verifier accreditation Number	VH56	Supplemented by	PSR-0005-ed3.1-EN-2023 12 08
Date of issue	10-2025	*Information and reference documents*	www.pep-ecopassport.org
		Validity period	5 years
Independent verification of the declaration and data, in compliance with ISO 14025: 2006			
Internal	X	External	
The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)			
PEPs are compliant with XP C08-100-1:2016 and EN 50693:2019 *The components of the present PEP may not be compared with components from any other program.*			
The document complies with ISO 14025: 2006 « Environmental labels and declarations. Type III environmental declarations »			