



Mechanical RCBO 1+N+PCB

Representative product	PKNM-16/1N/B/003-G/A-MW (Y7-182887) Product Category: Differential circuit-breakers
Description of the product	Eaton's mechanical RCBO - Residual-current circuit breaker with overcurrent protection is designed to provide circuit protection for low-voltage distribution systems. Eaton circuit breakers protect conductors against overloads and conductors and connected apparatus, such as motors and motor starters, against short circuits.
Homogeneous Environmental Families Covered	The PEP concerns following product offerings from Eaton residual-current circuit breaker with overcurrent protection as mentioned below: Series: PKNM, FRBMM, FRBM6, PXX Current Range (Ampere): 13, 16, 20, 25, 32, 40 No of Poles: 1N Tripping Curves: B, C, D Sensitivity: 30 mA, 100 mA, 300 mA Differential protection type: A, AC, F, Other
Functional unit	Protect the installation against overloads and short circuits and protect people and premises at risk of fire or explosion against insulation defects in a circuit with rated voltage 230V, rated current 16A, with 1P+N poles, a rated breaking capacity 10kA, the tripping curve B (MCB) / G/A (RCD), the sensitivity 30mA, and the differential protection type A, in the Household/Commercial application areas, according to the appropriate use scenario, and during the reference service life of the product of 20 years.
Company information	Eaton Electro Productie s.r.l, Independentei 8, Sarbi, Romania, 437157 Email: productstewardship-es@eaton.com

Constituent Materials			
Reference product mass	2.22E-01 kg (With packaging)		
Category PEP Material	Materials	Mass (kg)	Percentage (%)
Plastic	Polyamide 66	7.25E-02	32.7%
Metal	Steel	7.11E-02	32.1%
Other	Electronics Component	1.67E-02	7.5%
Metal	Copper	1.37E-02	6.2%
Metal	Stainless steel	1.28E-02	5.8%
Other	Cardboard	1.01E-02	4.5%
Other	Wood	5.83E-03	2.6%
Other	Label	2.87E-03	1.3%
Plastic	Polycarbonate	2.77E-03	1.3%
Metal	Nickel	2.53E-03	1.1%
Other	Paper	1.86E-03	0.8%
Plastic	PMMA	1.61E-03	0.7%
Metal	Ferronickel	1.35E-03	0.6%
Plastic	Polyamide 6	1.33E-03	0.6%
Plastic	Phenolic Resin	1.24E-03	0.6%
Other	Miscellaneous	3.46E-03	1.6%
Total		2.22E-01	100.0%

Substance Assessment

The representative product is compliant with the EU-RoHS Directive (2011/65/EU) with an exemption and the product contains Lead listed 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 Sarbi, Romania holding management system certifications according to ISO 14001 standards.
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 does not need any maintenance during Use phase.
End of life	The recyclability rate of the overall product is 82.14% if it is properly dismantled prior to shredding. The rate is calculated based on "ECO'DEEE recyclability and recoverability calculation method" (version V1, 20 Sep. 2008 presented to the French Agency for Environment and Energy Management: ADEME).

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 v6.1.3 with database version CODDE-2023-02. Indicators Set: PEF EF 3.0 (Compliance: PEP ed.4, EN15804+A2) v2.0	
Manufacturing Phase	The product is assembled as well as packed at Eaton facility Eaton Electro Productie s.r.l, Independentei 8, Sarbi, Romania plant. Energy model used: Romania, Europe, Global, France, Singapore, US, China
Distribution Phase	Distribution of the product in its packaging from the Eaton's last logistics platform to the installation place in Europe is considered as per PCR rules. Energy model used: Europe
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 Usage profile: Energy consumption is required by the product during its useful life. But product do not require any maintenance/replacement during useful life. Application: Commercial Use Rate: 30% Load Rate: 15% RLT Total Energy consumption in kWh: 4.25736 kWh Energy model used: Europe
End of life Phase	Product disposed with WEEE guidelines. Energy model used: Europe, Global
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. Energy model used: Europe, Global, US, France

Environmental Impact Indicators: Mandatory

Mandatory environmental impact indicators	Units	Sum	Manufacturing	Distribution	Installation	Use	End of life	Module-D
Resource use, minerals and metals- (ADPe)	kg SB eq.	2.16E-04	2.13E-04	2.08E-09	4.43E-10	1.26E-07	2.73E-06	-4.65E-05
Resource use, fossils – (ADPff)	MJ	1.21E+02	5.74E+01	7.38E-01	1.60E-01	4.45E+01	1.86E+01	-2.42E+01
Acidification – (AP)	mole of H+ eq.	3.06E-02	1.85E-02	3.35E-04	4.88E-05	9.96E-03	1.73E-03	-7.50E-03
Eutrophication, freshwater – (Epff)	kg P eq.	1.35E-04	4.46E-05	1.98E-08	2.47E-07	4.78E-06	8.57E-05	-2.97E-06
Eutrophication marine – (Epm)	kg N eq.	3.59E-03	2.02E-03	1.57E-04	2.33E-05	1.13E-03	2.58E-04	-9.43E-04
Eutrophication, terrestrial – (Ept)	mol N eq.	3.96E-02	1.79E-02	1.72E-03	1.50E-04	1.70E-02	2.90E-03	-6.24E-03
Climate change – (GWP)	kg CO ₂ eq.	4.66E+00	2.50E+00	5.29E-02	2.20E-02	1.74E+00	3.38E-01	-9.37E-01
Climate change-Biogenic – (GWPb)	kg CO ₂ eq.	2.97E-02	2.40E-02	0.00E+00	7.51E-04	2.33E-03	2.68E-03	-5.28E-03
Climate change-Fossil – (GWPff)	kg CO ₂ eq.	4.63E+00	2.48E+00	5.29E-02	2.13E-02	1.74E+00	3.35E-01	-9.32E-01
Climate change-Land use and land use change – (GWPlu)	kg CO ₂ eq.	7.24E-08	2.69E-08	0.00E+00	-1.37E-10	0.00E+00	4.57E-08	0.00E+00

Mandatory environmental impact indicators	Units	Sum	Manufacturing	Distribution	Installation	Use	End of life	Module-D
Ozone depletion – (ODP)	kg CFC-11 eq.	4.84E-06	4.81E-06	8.10E-11	2.24E-10	7.46E-09	2.35E-08	-3.10E-08
Photochemical ozone formation - human health – (POCP)	kg NMVOC eq.	1.11E-02	6.03E-03	4.34E-04	3.62E-05	3.63E-03	9.51E-04	-2.15E-03
Water use – (WU)	m ³ eq	1.55E+00	1.30E+00	2.01E-04	1.80E-03	6.17E-02	1.85E-01	-6.17E-01

Inventory Flow Indicators: Mandatory

Inventory flow indicators	Units	Sum	Manufacturing	Distribution	Installation	Use	End of life	Module-D
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	1.04E+01	1.66E+00	9.84E-04	4.67E-02	8.54E+00	1.39E-01	-3.00E-02
Use of renewable primary energy resources used as raw material	MJ	3.75E-01	3.75E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.07E-01
Total use of renewable primary energy resources	MJ	1.08E+01	2.04E+00	9.84E-04	4.67E-02	8.54E+00	1.39E-01	-2.37E-01
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1.19E+02	5.49E+01	7.38E-01	1.60E-01	4.45E+01	1.86E+01	-2.20E+01
Use of non renewable primary energy resources used as raw material	MJ	2.50E+00	2.50E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.17E+00
Total use of non-renewable primary energy resources	MJ	1.21E+02	5.74E+01	7.38E-01	1.60E-01	4.45E+01	1.86E+01	-2.42E+01
Use of secondary material	kg	2.53E-06	2.53E-06	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 freshwater	m ³	3.61E-02	3.03E-02	4.67E-06	4.18E-05	1.44E-03	4.31E-03	-1.44E-02
Components for reuse	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	2.22E-01	5.19E-02	0.00E+00	1.97E-03	0.00E+00	1.68E-01	0.00E+00
Materials for energy recovery	kg	4.49E-03	3.58E-04	0.00E+00	3.29E-03	0.00E+00	8.47E-04	0.00E+00
Exported Energy	MJ	1.93E-03	3.06E-06	0.00E+00	1.93E-03	0.00E+00	0.00E+00	0.00E+00
Hazardous waste disposed	kg	5.98E+00	5.73E+00	0.00E+00	3.97E-04	3.26E-02	2.18E-01	-2.37E+00
Non hazardous waste disposed	kg	1.85E+00	1.37E+00	1.86E-03	1.12E-02	2.51E-01	2.12E-01	-1.89E-01
Radioactive waste disposed	kg	1.57E-03	1.36E-03	1.32E-06	9.12E-07	5.25E-05	1.59E-04	-1.77E-05
Biogenic carbon content of the product	kg 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 C	6.63E-03	6.63E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Environmental Impact Indicators: Optional

Optional Environmental impact indicators	Units	Sum	Manufacturing	Distribution	Installation	Use	End of life	Module-D
Ecotoxicity, freshwater	CTUe	6.56E+01	3.86E+01	3.56E-02	2.06E-01	1.88E+01	8.06E+00	-1.84E+01
Human toxicity, cancer	CTUh-c	5.97E-07	4.95E-07	9.29E-13	1.80E-09	2.03E-10	9.94E-08	-2.85E-07
Human toxicity, non-cancer	CTUh-nc	1.65E-07	1.44E-07	1.01E-10	7.99E-11	8.07E-09	1.25E-08	-4.90E-08
Ionising radiation, human health	kBq U ²³⁵ eq.	1.68E+01	1.42E+01	1.29E-04	2.49E-03	2.59E+00	2.33E-02	-3.78E+00
Land use	--	4.77E-01	1.88E-01	0.00E+00	1.83E-03	3.47E-02	2.52E-01	-1.03E-04
EF-particulate Matter	Disease occurrence	2.62E-07	1.71E-07	2.72E-09	2.93E-10	7.73E-08	1.09E-08	-5.49E-08
Total Primary Energy	MJ	1.32E+02	5.94E+01	7.39E-01	2.07E-01	5.30E+01	1.87E+01	-2.44E+01

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

Part Number	Description	Extrapolation factor for All Phases and All impacts
Y7-182887 (Reference)	PKNM-16/1N/B/003-G/A-MW (Reference)	1.00
Y7-193543	PXK-B16/1N/03-F	
Y7-193546	PXK-C16/1N/03-F	
Y7-193558	PXK-B16/1N/01-F	
Y7-193561	PXK-C16/1N/01-F	
Y7-170582	FRBMM-C16/1N/03-G	
Y7-193588	PKNM-16/1N/B/03-F-MW	
Y7-193594	PKNM-16/1N/D/03-F-MW	
Y7-193602	PKNM-13/1N/B/01-F-MW	
Y7-193603	PKNM-16/1N/B/01-F-MW	
Y7-193605	PKNM-13/1N/C/01-F-MW	
Y7-193606	PKNM-16/1N/C/01-F-MW	
Y7-193604	PKNM-20/1N/B/01-F-MW	
Y7-193607	PKNM-20/1N/C/01-F-MW	
Y7-177824	FRBM6-C16/1N/003-G	
Y7-177845	FRBM6-D16/1N/03-G	
Y7-193498	FRBmM-C16/1N/03-F	
Y7-193528	PXK-B16/1N/003-F	
Y7-193531	PXK-C16/1N/003-F	
Y7-193532	PXK-C20/1N/003-F	
Y7-193534	PXK-D16/1N/003-F	
Y7-193578	PKNM-13/1N/D/003-F-MW	
Y7-193579	PKNM-16/1N/D/003-F-MW	
Y7-182886	PKNM-13/1N/B/003-G/A-MW	
Y7-182888	PKNM-20/1N/B/003-G/A-MW	
Y7-182891	PKNM-13/1N/C/003-G/A-MW	
Y7-182892	PKNM-16/1N/C/003-G/A-MW	
Y7-182893	PKNM-20/1N/C/003-G/A-MW	
Y7-193527	PXK-B13/1N/003-F	
Y7-193572	PKNM-13/1N/B/003-F-MW	
Y7-193573	PKNM-16/1N/B/003-F-MW	

Part Number	Description	Extrapolation factor for All Phases and All impacts
Y7-193575	PKNM-13/1N/C/003-F-MW	
Y7-193576	PKNM-16/1N/C/003-F-MW	
Y7-170528	FRBMM-B20/1N/003-G/A	
Y7-170624	FRBMM-C13/1N/003-G	
Y7-170625	FRBMM-C16/1N/003-G	
Y7-170626	FRBMM-C20/1N/003-G	
Y7-170630	FRBMM-C13/1N/003-G/A	
Y7-170631	FRBMM-C16/1N/003-G/A	
Y7-170631	FRBMM-C16/1N/003-G/A	
Y7-170632	FRBMM-C20/1N/003-G/A	
Y7-170653	FRBMM-D13/1N/003-G/A	
Y7-170654	FRBMM-D16/1N/003-G/A	
Y7-170655	FRBMM-D20/1N/003-G/A	
Y7-170711	FRBMM-B16/1N/003-G	
Y7-170716	FRBMM-B13/1N/003-G/A	
Y7-170717	FRBMM-B16/1N/003-G/A	
Y7-177848	FRBM6-B16/1N/003-G/A	
Y7-177860	FRBM6-D16/1N/003-G/A	
Y7-193479	FRBmM-B13/1N/003-F	
Y7-193480	FRBmM-B16/1N/003-F	
Y7-193482	FRBmM-C13/1N/003-F	
Y7-193483	FRBmM-C16/1N/003-F	
Y7-236137	PKNM-13/1N/B/003-G-MW	
Y7-236149	PKNM-13/1N/C/003-G-MW	
Y7-236209	PKNM-16/1N/B/003-G-MW	
Y7-236221	PKNM-16/1N/C/003-G-MW	
Y7-236253	PKNM-20/1N/C/003-G-MW	
Y7-193544	PXK-B20/1N/03-F	
Y7-193547	PXK-C20/1N/03-F	
Y7-193562	PXK-C20/1N/01-F	

Part Number	Description	Phases	ADPe (kg Sb eq.)	ADPf (MJ)	AP (mol H+ eq.)	Ep _f (kg P eq.)	Epm (kg N eq.)	Ept (mol N eq.)	GWP (kg CO2 eq.)	GWPb (kg CO2 eq.)	GWPf (kg CO2 eq.)	GWPlu (kg CO2 eq.)	ODP (kg CFC-11 eq.)	POCP (kg NMVOC eq.)	WU (m3 eq.)
Y7-170584	FRBMM-C25/1N/03-G	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-193536	PXX-B25/1N/003-F	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-193551	PXX-B25/1N/03-F	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-193507	FRBmM-C32/1N/03-F	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-193555	PXX-C32/1N/03-F	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-170585	FRBMM-C32/1N/03-G	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-193568	PXX-B40/1N/01-F	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-182889	PKNM-25/1N/B/003-G/A-MW	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56

Part Number	Description	Phases	ADPe (kg Sb eq.)	ADPf (MJ)	AP (mol H+ eq.)	Ep _f (kg P eq.)	E _{pm} (kg N eq.)	E _{pt} (mol N eq.)	GWP (kg CO2 eq.)	GWP _b (kg CO2 eq.)	GWP _f (kg CO2 eq.)	GWPlu (kg CO2 eq.)	ODP (kg CFC-11 eq.)	POCP (kg NMVOC eq.)	WU (m3 eq.)
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-182894	PKNM-25/1N/C/003-G/A-MW	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-170529	FRBMM-B25/1N/003-G/A	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-170633	FRBMM-C25/1N/003-G/A	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-182890	PKNM-32/1N/B/003-G/A-MW	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-182895	PKNM-32/1N/C/003-G/A-MW	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-236283	PKNM-25/1N/C/003-G-MW	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-170531	FRBMM-B40/1N/003-G/A	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-170635	FRBMM-C40/1N/003-G/A	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												

Part Number	Description	Phases	ADPe (kg Sb eq.)	ADPf (MJ)	AP (mol H+ eq.)	Epf (kg P eq.)	Epm (kg N eq.)	Ept (mol N eq.)	GWP (kg CO2 eq.)	GWPb (kg CO2 eq.)	GWPf (kg CO2 eq.)	GWPlu (kg CO2 eq.)	ODP (kg CFC-11 eq.)	POCP (kg NMVOC eq.)	WU (m3 eq.)
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-177841	FRBM6-C25/1N/03-G	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-177842	FRBM6-C32/1N/03-G	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11
Y7-236313	PKNM-32/1N/C/003-G-MW	Manufacturing	1.30	0.98	1.31	2.37	1.07	1.08	1.11	1.37	1.11	2.25	1.60	1.12	1.23
		Distribution	1.07												
		Installation	1.00												
		End of Life	2.57	0.94	1.25	2.57	1.13	1.18	1.06	2.59	1.04	2.57	1.12	1.11	1.56
		Module D	1.44	0.95	1.19	1.04	1.03	1.04	1.01	1.31	1.01	1.00	1.27	1.07	1.11

Multiplying Factors and Use Phase Energy Consumption for homogenous products.

Part Number	Description	Extrapolation Factor Only B6 (Commercial Application)
Y7-182887	PKNM-16/1N/C/003-G/A-MW(Ref)	1.00
Y7-170624	FRBMM-C13/1N/003-G	0.94
Y7-170630	FRBMM-C13/1N/003-G/A	
Y7-170653	FRBMM-D13/1N/003-G/A	
Y7-170716	FRBMM-B13/1N/003-G/A	
Y7-182886	PKNM-13/1N/B/003-G/A-MW	
Y7-182891	PKNM-13/1N/C/003-G/A-MW	
Y7-193479	FRBmM-B13/1N/003-F	
Y7-193482	FRBmM-C13/1N/003-F	
Y7-193527	PXK-B13/1N/003-F	
Y7-193572	PKNM-13/1N/B/003-F-MW	
Y7-193575	PKNM-13/1N/C/003-F-MW	
Y7-193578	PKNM-13/1N/D/003-F-MW	
Y7-193602	PKNM-13/1N/B/01-F-MW	
Y7-193605	PKNM-13/1N/C/01-F-MW	

Part Number	Description	Extrapolation Factor Only B6 (Commercial Application)
Y7-236137	PKNM-13/1N/B/003-G-MW	0.86
Y7-236149	PKNM-13/1N/C/003-G-MW	
Y7-170582	FRBMM-C16/1N/03-G	1.00
Y7-170625	FRBMM-C16/1N/003-G	
Y7-170631	FRBMM-C16/1N/003-G/A	
Y7-170631	FRBMM-C16/1N/003-G/A	
Y7-170654	FRBMM-D16/1N/003-G/A	
Y7-170711	FRBMM-B16/1N/003-G	
Y7-170717	FRBMM-B16/1N/003-G/A	
Y7-177824	FRBM6-C16/1N/003-G	
Y7-177845	FRBM6-D16/1N/03-G	
Y7-177848	FRBM6-B16/1N/003-G/A	
Y7-177860	FRBM6-D16/1N/003-G/A	
Y7-182887	PKNM-16/1N/B/003-G/A-MW	
Y7-193480	FRBmM-B16/1N/003-F	
Y7-193483	FRBmM-C16/1N/003-F	
Y7-193498	FRBmM-C16/1N/03-F	
Y7-193528	PXK-B16/1N/003-F	
Y7-193531	PXK-C16/1N/003-F	
Y7-193534	PXK-D16/1N/003-F	
Y7-193543	PXK-B16/1N/03-F	
Y7-193546	PXK-C16/1N/03-F	
Y7-193558	PXK-B16/1N/01-F	
Y7-193561	PXK-C16/1N/01-F	
Y7-193573	PKNM-16/1N/B/003-F-MW	
Y7-193576	PKNM-16/1N/C/003-F-MW	
Y7-193579	PKNM-16/1N/D/003-F-MW	
Y7-193588	PKNM-16/1N/B/03-F-MW	
Y7-193594	PKNM-16/1N/D/03-F-MW	
Y7-193603	PKNM-16/1N/B/01-F-MW	
Y7-193606	PKNM-16/1N/C/01-F-MW	
Y7-236209	PKNM-16/1N/B/003-G-MW	0.89
Y7-236221	PKNM-16/1N/C/003-G-MW	
Y7-170528	FRBMM-B20/1N/003-G/A	1.50
Y7-170626	FRBMM-C20/1N/003-G	
Y7-170632	FRBMM-C20/1N/003-G/A	
Y7-170655	FRBMM-D20/1N/003-G/A	
Y7-182888	PKNM-20/1N/B/003-G/A-MW	
Y7-182893	PKNM-20/1N/C/003-G/A-MW	

Part Number	Description	Extrapolation Factor Only B6 (Commercial Application)
Y7-193532	PXK-C20/1N/003-F	
Y7-193544	PXK-B20/1N/03-F	
Y7-193547	PXK-C20/1N/03-F	
Y7-193562	PXK-C20/1N/01-F	
Y7-193604	PKNM-20/1N/B/01-F-MW	
Y7-193607	PKNM-20/1N/C/01-F-MW	
Y7-236253	PKNM-20/1N/C/003-G-MW	1.31
Y7-170529	FRBMM-B25/1N/003-G/A	1.39
Y7-170584	FRBMM-C25/1N/03-G	
Y7-170633	FRBMM-C25/1N/003-G/A	
Y7-177841	FRBM6-C25/1N/03-G	
Y7-182889	PKNM-25/1N/B/003-G/A-MW	
Y7-182894	PKNM-25/1N/C/003-G/A-MW	
Y7-193536	PXK-B25/1N/003-F	
Y7-193551	PXK-B25/1N/03-F	1.33
Y7-236283	PKNM-25/1N/C/003-G-MW	
Y7-170585	FRBMM-C32/1N/03-G	1.69
Y7-177842	FRBM6-C32/1N/03-G	
Y7-182890	PKNM-32/1N/B/003-G/A-MW	
Y7-182895	PKNM-32/1N/C/003-G/A-MW	
Y7-193507	FRBmM-C32/1N/03-F	
Y7-193555	PXK-C32/1N/03-F	
Y7-236313	PKNM-32/1N/C/003-G-MW	1.83
Y7-170531	FRBMM-B40/1N/003-G/A	2.28
Y7-170635	FRBMM-C40/1N/003-G/A	
Y7-193568	PXK-B40/1N/01-F	

For part numbers intended for industrial application as well, the Use Phase (B6) impacts of commercial/residential application of specific part number should be multiplied by 11.11 to calculate impacts for Industrial application of that specific part number. The impact for other phases remains the same for all applications.

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-00112-V01.01-EN	Drafting rules	PCR-ed4-EN-2021 09 06
Verifier accreditation Number	VH54	Supplemented by	PSR-0005-ed3-EN-2023 06 06
Date of issue	05-2024	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.			
Document complies with ISO 14025: 2006 « Environmental labels and declarations. Type III environmental declarations »			