



**NZM2 Molded Case Circuit Breaker (IEC)
with or without Box Terminal (BT),
Electronic Trip Unit and STD Technology**

Representative product	NZMN2-4-VE250-BT (Y7-147398) Product Category: Circuit Breakers
Description of the product	Eaton Moeller series NZM molded case circuit breaker with electronic trip unit is designed to protect the installation from overload and short circuits. It is used in unearthed supply systems up to 690 V. It comes with Box Terminal.
Homogeneous Environmental Families Covered	The PEP concerns following product offerings from Eaton Moeller series NZM molded case circuit breaker with electronic trip unit as mentioned below: • Series: NZM Circuit Breaker • Switching Capacity: H (High), L (Limiter), N (Normal), S (Strong) • Rated Current - Classic Full Electronic (VE): 100 A, 160 A, 250 A - Classic Motor Electronic (ME): 90 A, 140 A, 220 A • No. of Poles: 3, 4 • Terminal Type: with or without BT (Box Terminal) • Device Voltage Type: S1 (1000 V AC Version)
Functional unit	“Protect the installation from overloads and short circuits in a circuit with rated voltage 690V, rated current 250A, with 4 poles, a rated breaking capacity 20 kA, and IP20 Rating, in the Industrial application area, 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	3.54E+00 Kg (With packaging)		
Category PEP Material	Material constituent	Mass (kg)	% Contribution
Metals	Steel	6.86E-01	19.3%
Metals	Stainless steel	6.82E-01	19.2%
Plastics	Polycarbonate	6.03E-01	17.0%
Metals	Copper	5.65E-01	15.9%
Plastics	Unsaturated polyester resin	3.61E-01	10.2%
Plastics	Polyamide	2.84E-01	8.0%
Other	Cardboard	9.23E-02	2.6%
Other	Electronic Components	8.53E-02	2.4%
Other	Wood	7.00E-02	2.0%
Plastics	Polyurethane	4.10E-02	1.2%
Plastics	Polybutylene terephthalate	1.95E-02	0.5%
Other	Paper	1.90E-02	0.5%
Metals	Silver	1.52E-02	0.4%
Other	Glass Fiber	7.49E-03	0.2%
Metals	Bronze	6.20E-03	0.2%
Other	Miscellaneous	8.40E-03	0.2%
Total		3.54E+00	100.0%

Substance Assessment

The representative product is compliant with the EU-RoHS Directive (2011/65/EU) with exemption and the product does contain lead and Perfluoro butane sulfonic acid (PFBS) and its salts as substance 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 requires energy consumption during operation.
End of life	The recyclability rate of the overall product is 78.93% 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 v6.2.2 with database version CODDE-2024-04. 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 facility Eaton Electro Productie s.r.l, Independentei 8, Sarbi, Romania plant. Energy model used: Romania
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.
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: The product has power loss of 51.56 W at full load condition. For Industrial applications considering 50% of the loading rate and 30% of the use time rate, total losses are 677.498 kWh over the 20 years. Product do not require any maintenance/replacement during useful life. Industrial application is considered as per PSR-0005 section 3.2.2. Energy model used: Europe
End of life Phase	Product disposed 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.	2.64E+02	3.00E+01	8.44E-01	4.65E-01	2.28E+02	5.27E+00	-1.23E+01
Climate change - fossil fuels (GWP-f)	kg CO2 eq.	2.63E+02	3.00E+01	8.44E-01	1.83E-01	2.27E+02	5.16E+00	-1.22E+01
Climate change – biogenics (GWP-b)	kg CO2 eq.	8.71E-01	5.36E-02	0.00E+00	2.81E-01	4.19E-01	1.17E-01	-4.16E-02
Climate change - land use and land use transformation (GWP-lu)	kg CO2 eq.	8.38E-04	8.36E-04	0.00E+00	0.00E+00	0.00E+00	1.86E-06	-7.65E-04
Ozone depletion (ODP)	kg eq. CFC-11	4.86E-06	3.65E-06	1.30E-09	6.16E-09	1.10E-06	9.93E-08	-1.57E-06
Acidification (AP)	mole of H+ eq.	1.46E+00	2.57E-01	5.35E-03	5.74E-04	1.17E+00	3.16E-02	-1.34E-01
Freshwater eutrophication (EP-fw)	kg P eq.	5.63E-03	1.53E-03	3.17E-07	1.81E-06	5.99E-04	3.49E-03	-6.88E-05
Marine aquatic eutrophication (EP-m)	kg of N eq.	1.73E-01	2.22E-02	2.51E-03	1.85E-04	1.42E-01	6.11E-03	-8.73E-03

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
Terrestrial eutrophication (EP-t)	mole of N eq.	2.60E+00	2.38E-01	2.75E-02	1.58E-03	2.28E+00	4.91E-02	-8.74E-02
Photochemical ozone formation (POCP)	kg of NMVOC eq.	5.54E-01	8.44E-02	6.95E-03	3.94E-04	4.47E-01	1.49E-02	-3.47E-02
Depletion of abiotic resources – elements (ADPe)	kg eq. Sb	2.33E-02	2.31E-02	3.33E-08	1.28E-08	8.05E-05	1.13E-04	-9.13E-03
Depletion of abiotic resources - fossil fuels (ADP-f)	MJ	6.88E+03	8.26E+02	1.18E+01	1.60E+00	5.75E+03	3.00E+02	-2.66E+02
Water scarcity (WDP)	m3 of eq. deprivation worldwide	8.22E+01	2.22E+01	3.21E-03	4.05E-02	1.74E+01	4.25E+01	-1.15E+01

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	1.55E+03	2.86E+01	1.57E-02	6.23E-01	1.52E+03	4.70E+00	-8.64E+00
Use of renewable primary energy resources used as raw materials	MJ	4.06E+00	4.06E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.97E+00
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.56E+03	3.27E+01	1.57E-02	6.23E-01	1.52E+03	4.70E+00	-1.06E+01
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	MJ	6.85E+03	7.87E+02	1.18E+01	1.60E+00	5.75E+03	3.00E+02	-2.42E+02
Use of non-renewable primary energy resources used as raw materials	MJ	3.85E+01	3.85E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.42E+01
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	6.88E+03	8.26E+02	1.18E+01	1.60E+00	5.75E+03	3.00E+02	-2.66E+02
Use of secondary materials	kg	2.16E-05	2.16E-05	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	2.03E+00	5.16E-01	7.48E-05	1.41E-03	4.10E-01	1.10E+00	-2.67E-01
Hazardous waste disposed of	kg	1.90E+02	1.77E+02	0.00E+00	2.38E-02	9.98E+00	3.39E+00	-1.17E+02
Non-hazardous waste disposed of	kg	5.19E+01	1.25E+01	2.97E-02	7.50E-02	3.84E+01	8.91E-01	-5.34E+00
Radioactive waste disposed of	kg	3.09E-02	2.19E-02	2.11E-05	8.83E-06	8.82E-03	1.72E-04	-2.84E-03
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	3.80E+00	1.01E+00	0.00E+00	8.81E-02	0.00E+00	2.71E+00	-2.05E-07
Materials for energy recovery	kg	9.59E-02	2.54E-03	0.00E+00	5.69E-02	0.00E+00	3.64E-02	0.00E+00

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
Exported energy	MJ by energy vector	2.89E-02	4.49E-05	0.00E+00	2.89E-02	0.00E+00	0.00E+00	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.	7.49E-02	7.49E-02	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	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	1.18E-05	2.25E-06	4.35E-08	3.41E-09	9.39E-06	1.62E-07	-1.57E-06
Ionizing radiation, human health	kBq of U235 eq.	5.76E+02	2.30E+02	2.06E-03	1.81E+01	3.27E+02	7.73E-01	-1.52E+02
Ecotoxicity, fresh water	CTUe	2.41E+03	1.87E+03	5.54E-01	1.86E+00	4.30E+02	1.06E+02	-1.60E+03
Human toxicity, cancer effects	CTUh	4.36E-06	4.31E-06	1.49E-11	1.06E-08	2.86E-08	4.08E-09	-5.01E-06
Human toxicity, non-cancer effects	CTUh	3.36E-06	2.35E-06	2.87E-10	4.63E-10	6.84E-07	3.21E-07	-1.46E-06
Impacts related to land use/soil quality	-	2.37E+01	6.49E+00	0.00E+00	6.66E-04	6.30E+00	1.09E+01	-2.13E+00
Total use of primary energy during the life cycle	MJ	8.44E+03	8.59E+02	1.18E+01	2.23E+00	7.27E+03	3.04E+02	-2.76E+02

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

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

Part Number	Product Description	Phases	GWP (kg CO ₂ eq.)	GWP- f (kg CO ₂ eq.)	GWP- b (kg CO ₂ eq.)	GWP- lu (kg CO ₂ eq.)	ODP (kg CFC- 11 eq.)	AP (mol H+ eq.)	EP- fw (kg P eq.)	EP- m (kg N eq.)	EP-t (mol N eq.)	POCP (kg NMVOC eq.)	ADP- e (kg Sb eq.)	ADP- f (MJ)	WDP (m ³ eq.)
Y7-147398 (Reference)	NZMN2-4-VE250-BT (Reference)	Manufacturing	1.00												
		Distribution													
		Installation													
		End of Life													
		Module D													

Part Number	Product Description	Phases	GWP (kg CO ₂ eq.)	GWP-f (kg CO ₂ eq.)	GWP-b (kg CO ₂ eq.)	GWP-lu (kg CO ₂ eq.)	ODP (kg CFC-11 eq.)	AP (mol H+ eq.)	EP-fw (kg P eq.)	EP-m (kg N eq.)	EP-t (mol N eq.)	POCP (kg NMVOC eq.)	ADP-e (kg Sb eq.)	ADP-f (MJ)	WDP (m ³ eq.)
Y7-147396	NZMN2-4-VE100-BT	Manufacturing	1.00												
		Distribution													
		Installation													
		End of Life													
		Module D													
Y7-147397	NZMN2-4-VE160-BT	Manufacturing	1.00												
		Distribution													
		Installation													
		End of Life													
		Module D													
Y7-265933	NZMN2-4-VE100	Manufacturing	1.00												
		Distribution													
		Installation													
		End of Life													
		Module D													
Y7-265941	NZMH2-4-VE100	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-265943	NZMH2-4-VE160	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-265944	NZMH2-4-VE160/100	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-265946	NZMH2-4-VE250	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-265947	NZMH2-4-VE250/160	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01

Part Number	Product Description	Phases	GWP (kg CO ₂ eq.)	GWP-f (kg CO ₂ eq.)	GWP-b (kg CO ₂ eq.)	GWP-lu (kg CO ₂ eq.)	ODP (kg CFC-11 eq.)	AP (mol H+ eq.)	EP-fw (kg P eq.)	EP-m (kg N eq.)	EP-t (mol N eq.)	POCP (kg NMVOC eq.)	ADP-e (kg Sb eq.)	ADP-f (MJ)	WDP (m ³ eq.)
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-265949	NZML2-4-VE100	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-265951	NZML2-4-VE160	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-265952	NZML2-4-VE160/100	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-265936	NZMN2-4-VE160/100	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-265939	NZMN2-4-VE250/160	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-109995	NZMS2-4-VE100	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-109996	NZMS2-4-VE160	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-109997	NZMS2-4-VE160/100	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												

Part Number	Product Description	Phases	GWP (kg CO ₂ eq.)	GWP-f (kg CO ₂ eq.)	GWP-b (kg CO ₂ eq.)	GWP-lu (kg CO ₂ eq.)	ODP (kg CFC-11 eq.)	AP (mol H+ eq.)	EP-fw (kg P eq.)	EP-m (kg N eq.)	EP-t (mol N eq.)	POCP (kg NMVOC eq.)	ADP-e (kg Sb eq.)	ADP-f (MJ)	WDP (m ³ eq.)
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-109998	NZMS2-4-VE250	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-109999	NZMS2-4-VE250/160	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-265938	NZMN2-4-VE250	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-265935	NZMN2-4-VE160	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-147392	NZMN2-VE250-BT	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-147391	NZMN2-VE160-BT	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-147390	NZMN2-VE100-BT	Manufacturing	0.89	0.89	2.27	1.00	1.04	1.15	1.32	0.96	0.96	0.98	1.25	0.72	1.07
		Distribution	0.91												
		Installation	1.00												
		End of Life	0.77	0.76	1.34	1.35	1.23	0.97	1.35	0.91	0.91	0.84	1.35	0.61	1.01
		Module D	0.84	0.83	1.79	1.00	0.70	1.15	0.97	0.92	0.91	0.96	1.22	0.80	1.04
Y7-259124	NZMN2-VE250	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												

Part Number	Product Description	Phases	GWP (kg CO ₂ eq.)	GWP-f (kg CO ₂ eq.)	GWP-b (kg CO ₂ eq.)	GWP-lu (kg CO ₂ eq.)	ODP (kg CFC-11 eq.)	AP (mol H+ eq.)	EP-fw (kg P eq.)	EP-m (kg N eq.)	EP-t (mol N eq.)	POCP (kg NMVOC eq.)	ADP-e (kg Sb eq.)	ADP-f (MJ)	WDP (m ³ eq.)
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-265788	NZMH2-ME220	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-109987	NZMS2-ME220	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-265795	NZML2-ME140	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-265794	NZML2-ME90	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-259127	NZMH2-VE250	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-109984	NZMS2-VE250	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-265780	NZMN2-ME220	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-259126	NZMH2-VE160	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81

Part Number	Product Description	Phases	GWP (kg CO ₂ eq.)	GWP-f (kg CO ₂ eq.)	GWP-b (kg CO ₂ eq.)	GWP-lu (kg CO ₂ eq.)	ODP (kg CFC-11 eq.)	AP (mol H+ eq.)	EP-fw (kg P eq.)	EP-m (kg N eq.)	EP-t (mol N eq.)	POCP (kg NMVOC eq.)	ADP-e (kg Sb eq.)	ADP-f (MJ)	WDP (m ³ eq.)
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-109983	NZMS2-VE160	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-100777	NZMH2-VE100-S1	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-100778	NZMH2-VE160-S1	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-100779	NZMH2-VE250-S1	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-259128	NZML2-VE100	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-259129	NZML2-VE160	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-259125	NZMH2-VE100	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76

Part Number	Product Description	Phases	GWP (kg CO ₂ eq.)	GWP-f (kg CO ₂ eq.)	GWP-b (kg CO ₂ eq.)	GWP-lu (kg CO ₂ eq.)	ODP (kg CFC-11 eq.)	AP (mol H+ eq.)	EP-fw (kg P eq.)	EP-m (kg N eq.)	EP-t (mol N eq.)	POCP (kg NMVOC eq.)	ADP-e (kg Sb eq.)	ADP-f (MJ)	WDP (m ³ eq.)
Y7-109982	NZMS2-VE100	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-265787	NZMH2-ME140	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-109986	NZMS2-ME140	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-259123	NZMN2-VE160	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-265779	NZMN2-ME140	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-265778	NZMN2-ME90	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-265786	NZMH2-ME90	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-109985	NZMS2-ME90	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97

Part Number	Product Description	Phases	GWP (kg CO ₂ eq.)	GWP-f (kg CO ₂ eq.)	GWP-b (kg CO ₂ eq.)	GWP-lu (kg CO ₂ eq.)	ODP (kg CFC-11 eq.)	AP (mol H+ eq.)	EP-fw (kg P eq.)	EP-m (kg N eq.)	EP-t (mol N eq.)	POCP (kg NMVOC eq.)	ADP-e (kg Sb eq.)	ADP-f (MJ)	WDP (m ³ eq.)
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76
Y7-259122	NZMN2-VE100	Manufacturing	0.76	0.76	0.40	0.77	0.88	0.77	0.78	0.76	0.76	0.75	0.76	0.62	0.81
		Distribution	0.73												
		Installation	0.83	0.82	0.84	1.00	1.08	0.91	0.84	0.86	0.86	0.87	1.02	0.87	1.12
		End of Life	0.60	0.59	0.77	0.76	0.77	0.69	0.76	0.76	0.65	0.62	0.76	0.52	0.97
		Module D	0.66	0.66	0.25	0.77	0.53	0.71	0.77	0.70	0.69	0.68	0.73	0.62	0.76

Multiplying Factors for Use Phase for homogenous products:

Part Number	Product Description	Use Phase Extrapolation Factors
Y7-147398 (Reference)	NZMN2-4-VE250-BT (Reference)	1.00
Y7-147396	NZMN2-4-VE100-BT	0.16
Y7-147397	NZMN2-4-VE160-BT	0.41
Y7-265933	NZMN2-4-VE100	0.16
Y7-265941	NZMH2-4-VE100	0.16
Y7-265943	NZMH2-4-VE160	0.41
Y7-265944	NZMH2-4-VE160/100	0.41
Y7-265946	NZMH2-4-VE250	1.00
Y7-265947	NZMH2-4-VE250/160	1.00
Y7-265949	NZML2-4-VE100	0.16
Y7-265951	NZML2-4-VE160	0.41
Y7-265952	NZML2-4-VE160/100	0.41
Y7-265936	NZMN2-4-VE160/100	0.41
Y7-265939	NZMN2-4-VE250/160	1.00
Y7-109995	NZMS2-4-VE100	0.16
Y7-109996	NZMS2-4-VE160	0.41
Y7-109997	NZMS2-4-VE160/100	0.41
Y7-109998	NZMS2-4-VE250	1.00
Y7-109999	NZMS2-4-VE250/160	1.00
Y7-265938	NZMN2-4-VE250	1.00
Y7-265935	NZMN2-4-VE160	0.41
Y7-147392	NZMN2-VE250-BT	1.00
Y7-147391	NZMN2-VE160-BT	0.41
Y7-147390	NZMN2-VE100-BT	0.16
Y7-259124	NZMN2-VE250	1.00
Y7-265788	NZMH2-ME220	0.77
Y7-109987	NZMS2-ME220	0.77
Y7-265795	NZML2-ME140	0.31
Y7-265794	NZML2-ME90	0.13

Part Number	Product Description	Use Phase Extrapolation Factors
Y7-259127	NZMH2-VE250	1.00
Y7-109984	NZMS2-VE250	1.00
Y7-265780	NZMN2-ME220	0.77
Y7-259126	NZMH2-VE160	0.41
Y7-109983	NZMS2-VE160	0.41
Y7-100777	NZMH2-VE100-S1	0.16
Y7-100778	NZMH2-VE160-S1	0.41
Y7-100779	NZMH2-VE250-S1	1.00
Y7-259128	NZML2-VE100	0.16
Y7-259129	NZML2-VE160	0.41
Y7-259125	NZMH2-VE100	0.16
Y7-109982	NZMS2-VE100	0.16
Y7-265787	NZMH2-ME140	0.31
Y7-109986	NZMS2-ME140	0.31
Y7-259123	NZMN2-VE160	0.41
Y7-265779	NZMN2-ME140	0.31
Y7-265778	NZMN2-ME90	0.13
Y7-265786	NZMH2-ME90	0.13
Y7-109985	NZMS2-ME90	0.13
Y7-259122	NZMN2-VE100	0.16

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.

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Verifier accreditation Number	VH53	Supplemented by	PSR-0005-ed3.1-EN-2023 12 08
Date of issue	09-2024	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 »			