Product Environmental Profile

Miniature circuit breaker - Acti9 iC40N - 3P+N - 16A - C curve - 6000A - 10kA

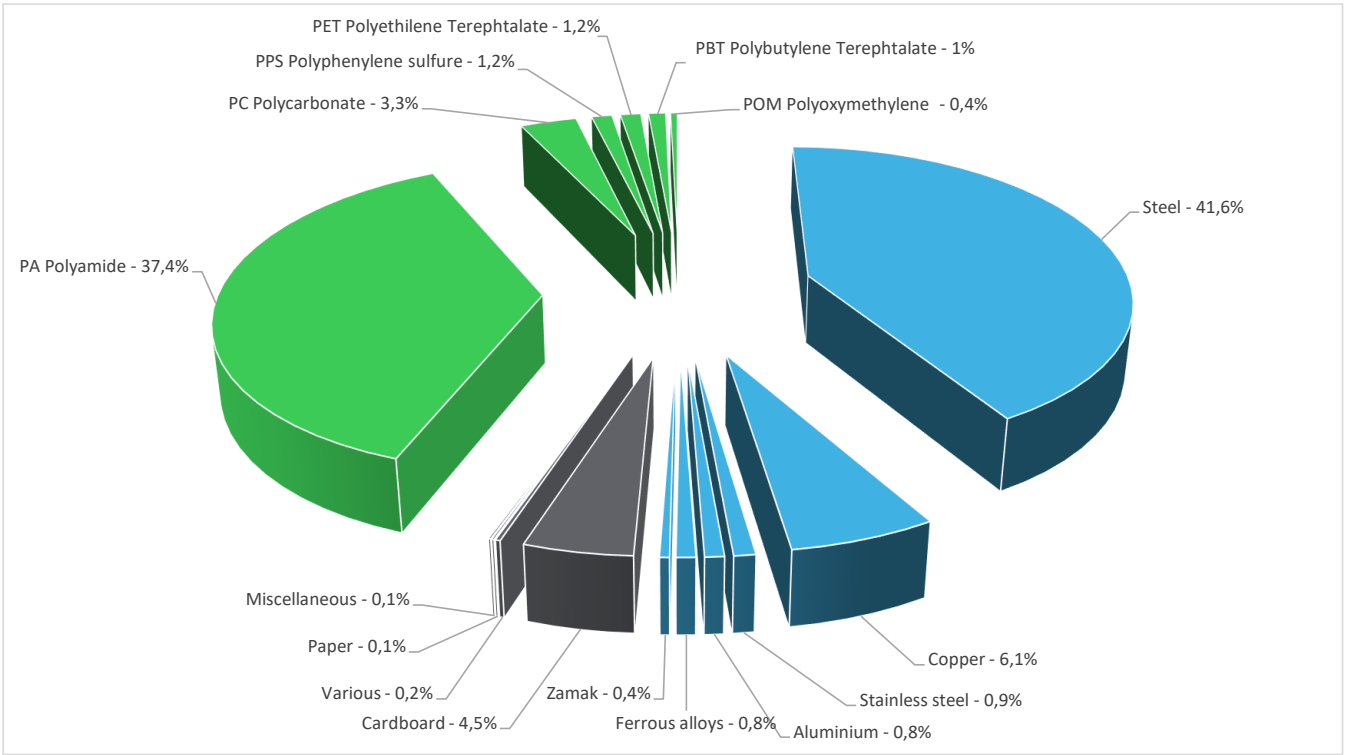
Representative of all Acti9 MCB iC40 3P+N - 10A to 63A

General information

Reference product	Miniature circuit breaker - Acti9 iC40N - 3P+N - 16A - C curve - 6000A - 10kA - A9P54716
Description of the product	Acti9 miniature circuit breaker A9P54716 is designed to protect residential installations and small tertairy installations againts overloads and short-circuits with assigned voltage 230VAC and rated current of 16A.
Description of the range	The environmental impacts of this reference product are representative of the impacts of the other products of the range which are developed with a similar technology. In addition of the reference product, this PEP covers all Acti9 iC40 Miniature Circuit Breaker 1P+N 10A to 63A
Functional unit	Protect the installation from overloads and short circuits in a circuit with rated voltage 230 VAC (Ue), rated current 16A (In), with 3 poles + neutral, a rated breaking capacity 6000A (Icu), and, if applicable, the specific specifications, in the Industrial application area, according to the appropriate use scenario, and during the reference service life of the product of 20 years.
Specifications are:	Ue = 230 VAC low voltage In = 16A Np = 3P+N Icn = 6000A Cd = C curve

Constituent materials

Reference product mass	360 g	including the product, its packaging, additional elements and accessories



Plastics	44,5%
Metals	50,6%
Others	4,9%

Substance assessment

Details of ROHS and REACH substances information are available on the Schneider-Electric website
https://www.se.com

Additional environmental information

End Of Life	Recyclability potential:	**52%**	The recyclability rate was calculated from the recycling rates of each material making up the product based on REEECY'LAB tool developed by Ecosystem, for components/materials not covered by the tool, data from the EIME database and the related PSR was taken. If no data was found a conservative assumption was used (0% recyclability).

Environmental impacts

Reference service life time	20 years			
Product category	Circuit-breakers - Industrial			
Life cycle of the product	The manufacturing, the distribution, the installation, the use and the end of life were taken into consideration in this study			
Electricity consumtion	The electricity consumed during manufacturing processes is considered for each part of the product individually, the final assembly generates a negligable consumption			
Installation elements	The product does not require any installation operations			
Use scenario	Load rate = 50 % In Use rate = 30% RLT			
Time representativeness	The collected data are representative of the year 2024			
Technological representativeness	The Modules of Technologies such as material production, manufacturing processes and transport technology used in the PEP analysis (LCA EIME in the case) are Similar and Representative of the actual type of technologies used to make the product.			
Final assembly site	Zalaegerszeg (Hungary)			
Geographical representativeness	Europe			
Energy model used	[A1 - A3]	[A5]	[B6]	[C1 - C4]
	Electricity Mix; Low voltage; 2020; Hungary, HU	Electricity Mix; Low voltage; 2020; Europe, EU-27	Electricity Mix; Low voltage; 2020; Europe, EU-27	Electricity Mix; Low voltage; 2020; Europe, EU-27

Detailed results of the optional indicators mentioned in PCRed4 are available in the LCA report and on demand in a digital format - Country Customer Care Center - http://www.se.com/contact

Mandatory Indicators		Miniature circuit breaker - Acti9 iC40N - 3P+N - 16A - C curve - 6000A - 10kA - A9P54716						
Impact indicators	Unit	Total (without Module D)	[A1 - A3] - Manufacturing	[A4] - Distribution	[A5] - Installation	[B1 - B7] - Use	[C1 - C4] - End of life	[D] - Benefits and loads
Contribution to climate change	kg CO2 eq	3,72E+01	2,23E+00	7,00E-02	1,74E-02	3,40E+01	8,78E-01	-6,58E-01
Contribution to climate change-fossil	kg CO2 eq	3,71E+01	2,22E+00	7,00E-02	1,65E-02	3,39E+01	8,74E-01	-6,70E-01
Contribution to climate change-biogenic	kg CO2 eq	7,27E-02	5,00E-03	0*	8,25E-04	6,25E-02	4,29E-03	1,23E-02
Contribution to climate change-land use and land use change	kg CO2 eq	1,38E-05	1,37E-05	0*	0*	0*	7,12E-08	0,00E+00
Contribution to ozone depletion	kg CFC-11 eq	8,34E-07	6,66E-07	1,07E-10	2,25E-10	1,65E-07	2,73E-09	-1,07E-07
Contribution to acidification	mol H+ eq	1,93E-01	1,58E-02	4,44E-04	5,09E-05	1,74E-01	2,35E-03	-7,14E-03
Contribution to eutrophication, freshwater	kg $(PO4)^{3-}$ eq	2,74E-04	4,97E-05	0*	3,98E-07	8,95E-05	1,35E-04	-1,37E-06
Contribution to eutrophication marine	kg N eq	2,38E-02	1,86E-03	2,08E-04	2,21E-05	2,12E-02	5,03E-04	-4,30E-04
Contribution to eutrophication, terrestrial	mol N eq	3,69E-01	2,01E-02	2,28E-03	1,54E-04	3,41E-01	5,74E-03	-4,91E-03
Contribution to photochemical ozone formation - human health	kg COVNM eq	7,55E-02	6,42E-03	5,76E-04	3,53E-05	6,68E-02	1,72E-03	-1,87E-03
Contribution to resource use, minerals and metals	kg Sb eq	4,64E-04	4,48E-04	0*	0*	1,20E-05	4,36E-06	-2,09E-04
Contribution to resource use, fossils	MJ	9,35E+02	4,26E+01	9,78E-01	1,72E-01	8,58E+02	3,29E+01	-1,48E+01
Contribution to water use	m3 eq	3,77E+00	8,55E-01	0*	1,34E-03	2,60E+00	3,10E-01	-4,26E-01

Inventory flows Indicators		Miniature circuit breaker - Acti9 iC40N - 3P+N - 16A - C curve - 6000A - 10kA - A9P54716						
Inventory flows	Unit	Total (without Module D)	[A1 - A3] - Manufacturing	[A4] - Distribution	[A5] - Installation	[B1 - B7] - Use	[C1 - C4] - End of life	[D] - Benefits and loads
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	2,28E+02	6,04E-01	0*	0*	2,27E+02	1,08E-01	-1,63E-01
Contribution to use of renewable primary energy resources used as raw material	MJ	6,27E-01	6,27E-01	0*	0*	0*	0*	-2,40E-01
Contribution to total use of renewable primary energy resources	MJ	2,28E+02	1,23E+00	0*	0*	2,27E+02	1,08E-01	-4,03E-01

Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	9,31E+02	3,85E+01	9,78E-01	1,72E-01	8,58E+02	3,29E+01	-1,48E+01
Contribution to use of non renewable primary energy resources used as raw material	MJ	4,12E+00	4,12E+00	0*	0*	0*	0*	0,00E+00
Contribution to total use of non-renewable primary energy resources	MJ	9,35E+02	4,26E+01	9,78E-01	1,72E-01	8,58E+02	3,29E+01	-1,48E+01
Contribution to use of secondary material	kg	5,10E-06	5,10E-06	0*	0*	0*	0*	0,00E+00
Contribution to use of renewable secondary fuels	MJ	0,00E+00	0*	0*	0*	0*	0*	0,00E+00
Contribution to use of non renewable secondary fuels	MJ	0,00E+00	0*	0*	0*	0*	0*	0,00E+00
Contribution to net use of freshwater	m³	8,84E-02	1,99E-02	0*	3,13E-05	6,12E-02	7,22E-03	-9,91E-03
Contribution to hazardous waste disposed	kg	1,90E+01	1,75E+01	0*	0*	1,49E+00	0*	-1,69E+01
Contribution to non hazardous waste disposed	kg	7,81E+00	1,89E+00	2,46E-03	7,44E-03	5,74E+00	1,71E-01	-5,48E-01
Contribution to radioactive waste disposed	kg	2,11E-03	7,83E-04	1,75E-06	9,20E-07	1,32E-03	7,27E-06	-2,72E-04
Contribution to components for reuse	kg	0,00E+00	0*	0*	0*	0*	0*	0,00E+00
Contribution to materials for recycling	kg	1,85E-01	1,15E-02	0*	0*	0*	1,74E-01	0,00E+00
Contribution to materials for energy recovery	kg	0,00E+00	0*	0*	0*	0*	0*	0,00E+00
Contribution to exported energy	MJ	2,54E-03	1,17E-04	0*	7,10E-04	0*	1,72E-03	0,00E+00

* represents less than 0.01% of the total life cycle of the reference flow

Contribution to biogenic carbon content of the product	kg of C	0,00E+00
Contribution to biogenic carbon content of the associated packaging	kg of C	4,60E-03

* The calculation of the biogenic carbon is based on the Ademe for the Cardboard (28%), EN16485 for Wood (39,52%), and APESA/RECORD for Paper (37,8%)

Mandatory Indicators		Miniature circuit breaker - Acti9 iC40N - 3P+N - 16A - C curve - 6000A - 10kA - A9P54716							
Impact indicators	**Unit**	**[B1 - B7] - Use**	**[B1]**	**[B2]**	**[B3]**	**[B4]**	**[B5]**	**[B6]**	**[B7]**
Contribution to climate change	kg CO2 eq	3,40E+01	0*	0*	0*	0*	0*	3,40E+01	0*
Contribution to climate change-fossil	kg CO2 eq	3,39E+01	0*	0*	0*	0*	0*	3,39E+01	0*
Contribution to climate change-biogenic	kg CO2 eq	6,25E-02	0*	0*	0*	0*	0*	6,25E-02	0*
Contribution to climate change-land use and land use change	kg CO2 eq	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to ozone depletion	kg CFC-11 eq	1,65E-07	0*	0*	0*	0*	0*	1,65E-07	0*
Contribution to acidification	mol H+ eq	1,74E-01	0*	0*	0*	0*	0*	1,74E-01	0*
Contribution to eutrophication, freshwater	kg $(PO4)^{3-}$ eq	8,95E-05	0*	0*	0*	0*	0*	8,95E-05	0*
Contribution to eutrophication marine	kg N eq	2,12E-02	0*	0*	0*	0*	0*	2,12E-02	0*
Contribution to eutrophication, terrestrial	mol N eq	3,41E-01	0*	0*	0*	0*	0*	3,41E-01	0*
Contribution to photochemical ozone formation - human health	kg COVNM eq	6,68E-02	0*	0*	0*	0*	0*	6,68E-02	0*
Contribution to resource use, minerals and metals	kg Sb eq	1,20E-05	0*	0*	0*	0*	0*	1,20E-05	0*
Contribution to resource use, fossils	MJ	8,58E+02	0*	0*	0*	0*	0*	8,58E+02	0*
Contribution to water use	m3 eq	2,60E+00	0*	0*	0*	0*	0*	2,60E+00	0*

Inventory flows Indicators		Miniature circuit breaker - Acti9 iC40N - 3P+N - 16A - C curve - 6000A - 10kA - A9P54716							
Inventory flows	**Unit**	**[B1 - B7] - Use**	**[B1]**	**[B2]**	**[B3]**	**[B4]**	**[B5]**	**[B6]**	**[B7]**
Contribution to use of renewable primary energy excluding renewable primary energy used as raw material	MJ	2,27E+02	0*	0*	0*	0*	0*	2,27E+02	0*
Contribution to use of renewable primary energy resources used as raw material	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to total use of renewable primary energy resources	MJ	2,27E+02	0*	0*	0*	0*	0*	2,27E+02	0*
Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	8,58E+02	0*	0*	0*	0*	0*	8,58E+02	0*
Contribution to use of non renewable primary energy resources used as raw material	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to total use of non-renewable primary energy resources	MJ	8,58E+02	0*	0*	0*	0*	0*	8,58E+02	0*
Contribution to use of secondary material	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to use of renewable secondary fuels	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to use of non renewable secondary fuels	MJ	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to net use of freshwater	m³	6,12E-02	0*	0*	0*	0*	0*	6,12E-02	0*
Contribution to hazardous waste disposed	kg	1,49E+00	0*	0*	0*	0*	0*	1,49E+00	0*
Contribution to non hazardous waste disposed	kg	5,74E+00	0*	0*	0*	0*	0*	5,74E+00	0*
Contribution to radioactive waste disposed	kg	1,32E-03	0*	0*	0*	0*	0*	1,32E-03	0*
Contribution to components for reuse	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to materials for recycling	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to materials for energy recovery	kg	0*	0*	0*	0*	0*	0*	0*	0*
Contribution to exported energy	MJ	0*	0*	0*	0*	0*	0*	0*	0*

** represents less than 0.01% of the total life cycle of the reference flow*

Life cycle assessment performed with EIME version v6.2.2, database version 2024-01 in compliance with ISO14044, EF3,1 method is applied, for biogenic carbon storage, assessment methodology -1/1 is used

According to this environmental analysis, proportionality rules may be used to evaluate the impacts of other products of this range, ratios to apply can be provided upon request

Please note that the values given above are only valid within the context specified and cannot be used directly to draw up the environmental assessment of an installation.

Registration number :	SCHN-00547-V02.01-EN	*Drafting rules*	PCR-4-ed4-EN-2021 09 06
		Supplemented by	PSR-0005-ed3.1-EN-2023 12 08
Verifier accreditation N°	VH48	*Information and reference documents*	www.pep-ecopassport.org
Date of issue	10-2024	*Validity period*	5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2006			
Internal	External X		
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 or NF E38-500 :2022			
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"			

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