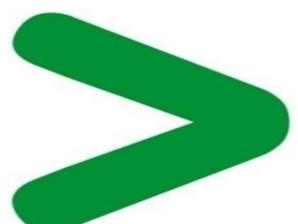


Product Environmental Profile

Trihal



Schneider
Electric

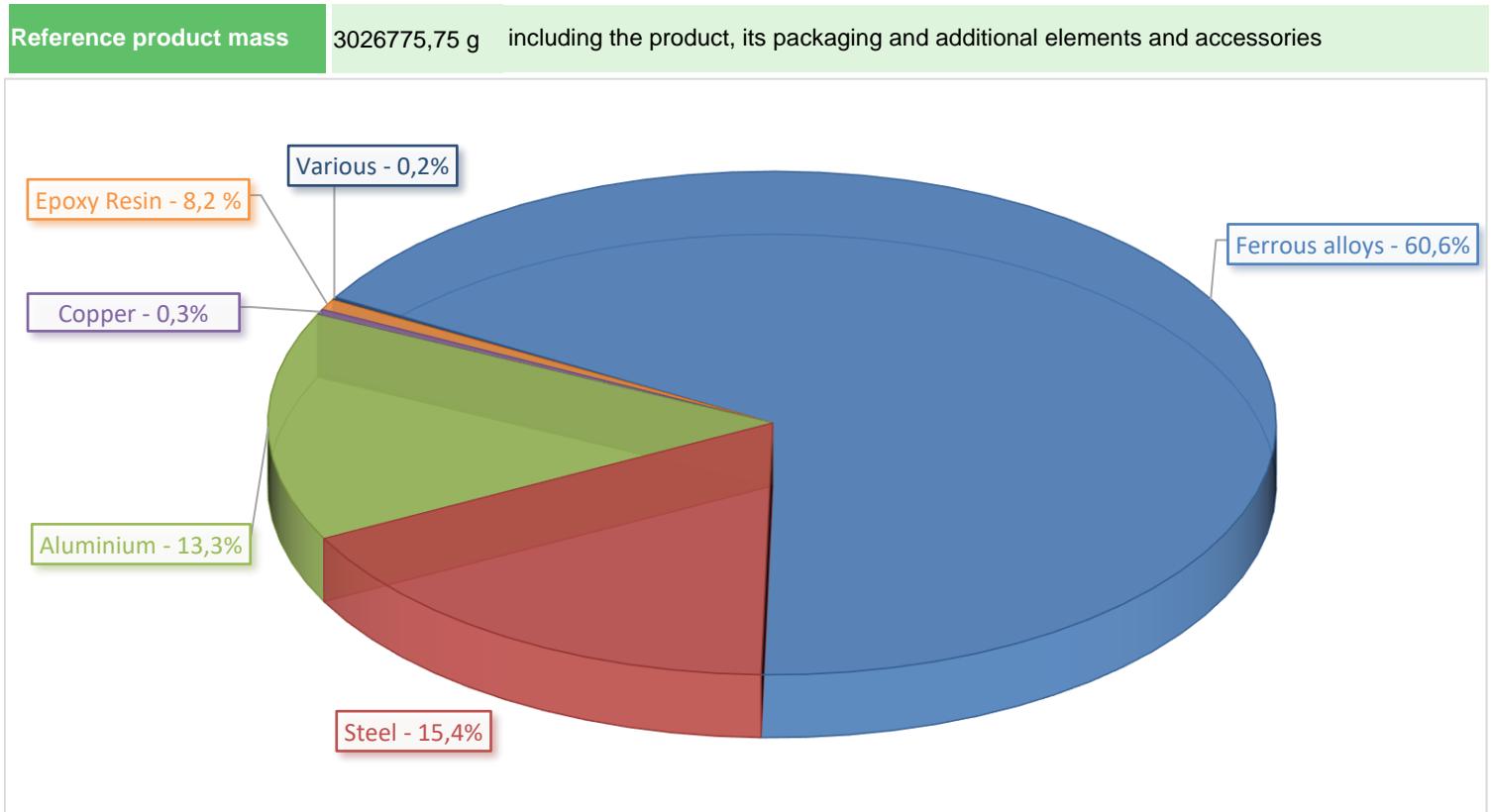


General information

Representative product	Trihal
Description of the product	The main purpose of Trihal transformers is to supply reliable and safe voltage amplitude transformation to distribution network from MV to MV or LV to LV or from MV to LV (or vice versa for step up operation).
Description of the range	<p>This range consists of cast resin transformers up to and including 20 MVA power rating (25 MVA air forced) and 36 kV maximum operating voltage, manufactured in Schneider Electric transformer plants.</p> <p>The environmental impacts of this referenced product are representative of the impacts of the other products of the range which are developed with a similar technology.</p>
Functional unit	To operate the transformer during its expected life span of 30 years at 100 % service uptime



Constituent materials



Substance assessment

Products of this range are designed in conformity with the requirements of the RoHS directive (European Directive 2011/65/EU of 8 June 2011) and do not contain, or only contain in the authorised proportions, lead, mercury, cadmium, hexavalent chromium or flame retardants (polybrominated biphenyls - PBB, polybrominated diphenyl ethers - PBDE) as mentioned in the Directive

As the products of the range are designed in accordance with the RoHS Directive (European Directive 2002/95/EC of 27 January 2003), they can be incorporated without any restriction in an assembly or an installation subject to this Directive.

Details of ROHS and REACH substances information are available on the Schneider-Electric Green Premium website
<http://www2.schneider-electric.com/sites/corporate/en/products-services/green-premium/green-premium.page>



Additional environmental information

The Trihal presents the following relevant environmental aspects

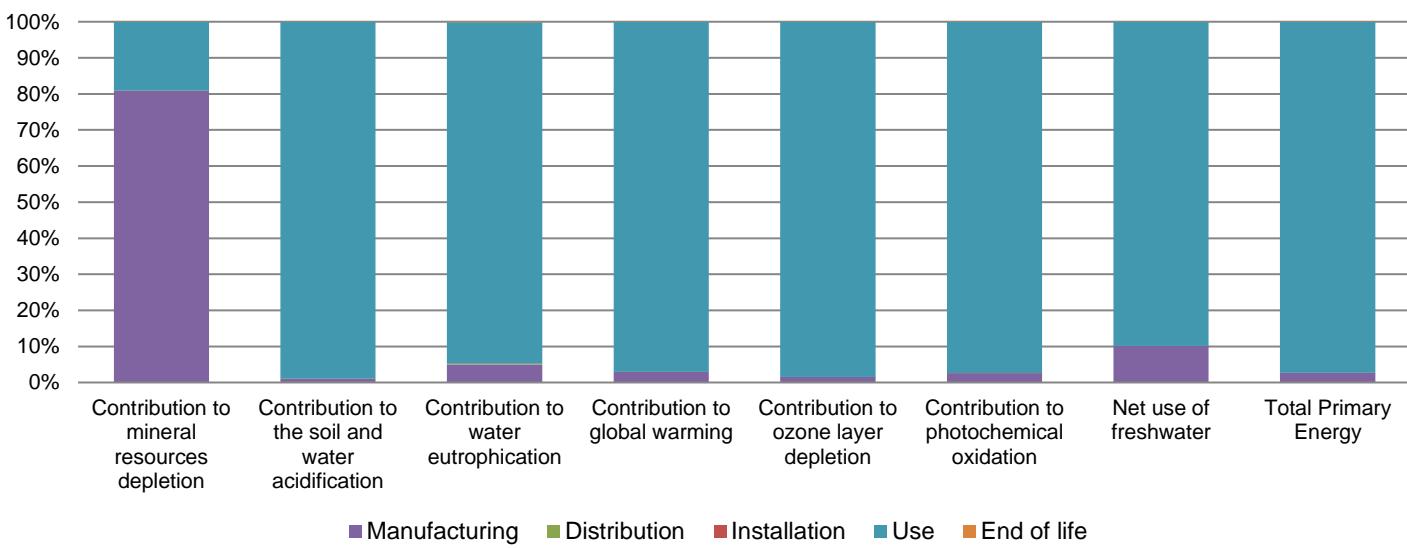
Manufacturing	Manufactured at a Schneider Electric production site ISO14001 certified		
Distribution	<p>Weight and volume of the packaging optimized, based on the European Union's packaging directive</p> <p>Packaging weight is 1000 g, consisting of polyethylene film (100%)</p> <p>Packaging recycled materials is 29% of total packaging mass.</p>		
Installation	It should be noted that installation of Trihal transformers have negligible global impact.		
Use	The product does not require special maintenance operations.		
End of life	<p>End of life optimized to decrease the amount of waste and allow recovery of the product components and materials</p> <p>No special end-of-life treatment required. According to countries' practices this product can enter the usual end-of-life treatment process.</p> <p>Recyclability potential: 85% 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).</p>		



Environmental impacts

Reference life time	30 years			
Installation elements	No special components needed			
Use scenario	The dissipated power depends on the product size as well as the conditions under which the product is implemented and used. This product range is included in the category 1 (Energy Passing Product). Use scenario is: power dissipation is 4,661 kW at 37 % load, average loading rate during life time is 37 % and service uptime percentage is 100 %.			
Geographical representativeness	Europe			
Technological representativeness	The main purpose of Trihal transformers is to supply reliable and safe voltage amplitude transformation to distribution network from MV to MV or LV to LV or from MV to LV (or vice versa for step up operation).			
Energy model used	Manufacturing France	Installation Electricity Mix; AC; consumption mix, at consumer; 1kV - 60kV; EU-27	Use Electricity Mix; AC; consumption mix, at consumer; 1kV - 60kV; EU-27	End of life Electricity Mix; AC; consumption mix, at consumer; 1kV - 60kV; EU-27

Compulsory indicators		Trihal - Trihal						
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life	
Contribution to mineral resources depletion	kg Sb eq	1.64E-01	1.33E-01	0*	0*	3.13E-02	0*	
Contribution to the soil and water acidification	kg SO ₂ eq	5.13E+03	5.58E+01	1.78E+00	0*	5.07E+03	8.83E-01	
Contribution to water eutrophication	kg PO ₄ ³⁻ eq	2.04E+02	1.02E+01	4.11E-01	0*	1.93E+02	2.24E-01	
Contribution to global warming	kg CO ₂ eq	7.06E+05	2.06E+04	3.91E+02	0*	6.84E+05	3.63E+02	
Contribution to ozone layer depletion	kg CFC11 eq	1.69E-01	2.60E-03	0*	0*	1.67E-01	1.85E-05	
Contribution to photochemical oxidation	kg C ₂ H ₄ eq	2.47E+02	6.38E+00	1.27E-01	0*	2.40E+02	9.44E-02	
Resources use		Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Net use of freshwater	m ³	1.99E+03	2.03E+02	0*	0*	1.79E+03	3.73E-01	
Total Primary Energy	MJ	1.43E+07	3.83E+05	5.52E+03	0*	1.39E+07	4.40E+03	



Optional indicators		Trihal - Trihal						
Impact indicators	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life	
Contribution to fossil resources depletion	MJ	7.25E+06	1.89E+05	5.49E+03	0*	7.05E+06	3.53E+03	
Contribution to air pollution	m ³	3.29E+07	3.95E+06	1.66E+04	0*	2.89E+07	3.13E+04	
Contribution to water pollution	m ³	3.12E+07	2.32E+06	6.42E+04	0*	2.88E+07	3.52E+04	
Resources use		Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Use of secondary material	kg	2.00E+02	2.00E+02	0*	0*	0*	0*	0*
Total use of renewable primary energy resources	MJ	1.00E+06	5.01E+03	0*	0*	9.96E+05	0*	
Total use of non-renewable primary energy resources	MJ	1.33E+07	3.78E+05	5.51E+03	0*	1.29E+07	4.39E+03	
Use of renewable primary energy excluding renewable primary energy used as raw material	MJ	1.00E+06	5.01E+03	0*	0*	9.96E+05	0*	
Use of renewable primary energy resources used as raw material	MJ	0.00E+00	0*	0*	0*	0*	0*	
Use of non renewable primary energy excluding non renewable primary energy used as raw material	MJ	1.33E+07	3.73E+05	5.51E+03	0*	1.29E+07	4.39E+03	
Use of non renewable primary energy resources used as raw material	MJ	4.87E+03	4.87E+03	0*	0*	0*	0*	
Use of non renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*	
Use of renewable secondary fuels	MJ	0.00E+00	0*	0*	0*	0*	0*	

Waste categories	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Hazardous waste disposed	kg	6.18E+03	2.69E+03	0*	0*	0*	3.49E+03
Non hazardous waste disposed	kg	2.56E+06	1.32E+04	0*	0*	2.55E+06	0*
Radioactive waste disposed	kg	2.10E+03	1.09E+01	0*	0*	2.09E+03	0*
Other environmental information	Unit	Total	Manufacturing	Distribution	Installation	Use	End of Life
Materials for recycling	kg	2.85E+03	2.72E+02	0*	2.88E-01	0*	2.58E+03
Components for reuse	kg	0.00E+00	0*	0*	0*	0*	0*
Materials for energy recovery	kg	2.68E+01	0*	0*	0*	0*	2.68E+01
Exported Energy	MJ	0.00E+00	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 EIME v5.7.0.3, database version 2016-11 in compliance with ISO14044.

The use phase is the life cycle phase which has the greatest impact on the majority of environmental indicators (based on compulsory indicators).

According to this environmental analysis, proportionality rules may be used to evaluate the impacts of other products of this range.

Depending on the impact analysis, the environmental indicators (without RMD) of other products in this family may be proportional extrapolated by energy consumption values. For RMD, impact may be proportional extrapolated by mass of the product.

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.

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Date of issue	06/2020		
Validity period	5 years	Information and reference documents	www.pep-ecopassport.org
<i>Independent verification of the declaration and data</i>			
Internal	<input checked="" type="checkbox"/>	External	
<i>The elements of the present PEP cannot be compared with elements from another program.</i>			
<i>Document in compliance with ISO 14021:2016 « Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling) »</i>			

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