

# Product Environmental Profile

## Isolating transformers tri protected




### LEGRAND'S ENVIRONMENTAL COMMITMENTS

- Incorporate environmental management into our industrial sites  
Of all Legrand sites worldwide, over 80% are ISO 14001-certified (sites belonging to the Group for more than five years)..
- Involve the environment in product design  
Provide our customers with all relevant information (composition, consumption, end of life, etc.).  
Reduce the environmental impact of products over their whole life cycle..
- Offer our customers environmentally friendly solutions  
Develop innovative solutions to help our customers design more energy efficient, better managed and more environmentally friendly installations.



### REFERENCE PRODUCT

<b>Fonction</b>	Allow to deliver an input voltage 400V AC with output voltage 400 V + N, power of 16 kVA. Product can be used for the energy distribution (service sector, infrastructures, industrial applications) in accordance to standard IEC 60076-11 and has a lifetime of 20 years.
Reference Product	<div style="text-align: center;">  <p>Catalogue Numbers 042827</p> <p>Isolating transformer tri protected - Input voltage 400 V/ Output voltage 400 V + N - 16 KVA</p> </div>

The company reserves the right to change specifications and designs without notice. All illustrations, descriptions, dimensions and weights in the document are for guidance and cannot be held binding on the company



### PRODUCTS CONCERNED

The environmental data for the reference product refers to the following Catalogue Numbers:

<b>Références</b> 042825, 042826, 042827, 142828, 142829, 042545, 042546, 042547, 042204, 042205, 042206, 042207, 142208, 142209, 142548, 142549
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### ■ CONSTITUENT MATERIALS

This Reference Product contains no substances prohibited by the regulations applicable at the time of its introduction to the market. It does not contain substances covered by the RoHS Directive (2002/95/EC and its revision 2011/65/EC). It contains none of the 138 candidate list of the REACH regulation dated 19/12/2012

Total weight of Reference Product		121000 g (with unit packaging)			
Plastics as % of weight		Metals as % of weight		Other as % of weight	
other plastic	2.3%	Steel	70.5%		
PET	2.2%	Copper alloys	14.8%		
PA	0.2%				
PE	<0,1%				
PVC	<0,1%			Packaging as % of weight	
				paper	10.0%
Total plastics	4.7%	Total metals	85.3%	Total other and packaging	10%

Estimated recycled material content: 35% by mass.



### ■ MANUFACTURE

This Reference Product comes from a site that have received ISO14001 certification..



### ■ DISTRIBUTION

Products are distributed from logistics centres located with a view to optimize transport efficiency. The Reference Product is therefore transported over an average distance of 780km by road from our warehouse to the local point of distribution into the market in Europe.

Packaging is compliant with european directive 2004/12/EC concerning packaging and packaging waste.

At the packaging end of life, its recyclability rate is of 100% (in % of the mass of the packaging)



### ■ INSTALLATION

Installation components not delivered with the product are not taken into account.



### ■ USE

Servicing and maintenance:  
Under normal conditions of use, this type of Product requires no servicing or maintenance

Consumable  
No consumables are necessary to use the Reference Product



### END OF LIFE

Development teams integrate product end-of-life factors in the design phase. Dismantling and sorting of components or materials is made as easy as possible with a view to recycling or failing that, another form of reuse.

This product enters into the field of application of WEEE (2002/96/EC). It must therefore be processed through local WEEE end-of-life channels.

• End-of-life channel

The sale of this product is subject to a contribution to eco-organisations in each country responsible for managing end-of-life products in the field of application of the European Waste Electronic and Electrical Equipment Directive

• Recyclability rate

Calculated using the method described in the IEC/TR 62635 technical report, the recyclability rate of the product is estimated as 97%. This value is based on data collected from a technological channel using industrial procedures. It does not pre-validate the effective use of this channel for end-of-life electrical and electronic products.

Separated into:

- Plastic materials (excluding packaging) : 2 %
- Metal materials (excluding packaging) : 85 %
- Other materials (excluding packaging) : 0 %
- Packaging (all types of materials) : 10 %



### ENVIRONMENTAL IMPACTS

The evaluation of environmental impacts examines the stages of the reference product life cycle: manufacturing, distribution, installation, use, and end of life. It is representative from products marketed and used in Europe, in compliance with the local current standards

The following modelling elements were taken into account:

Manufacture	Unit packaging taken in account. As required by the "PEP ecopassport" programme all transports for the manufacturing of the Reference Product, including materials and components, has been taken in account.
Distribution	Transport between the last Group distribution centre and an average delivery to the sales area
Installation	Installation components not delivered with the product are not taken into account.
Use	<ul style="list-style-type: none"> <li>• Under normal conditions of use, this type of Product requires no servicing or maintenance</li> <li>• No consumables are necessary to use the Reference Product</li> <li>• Product category : passive product</li> <li>• Use scenario : continuous operation (100% of the time) for 20 years at 30% of rated load of the time. This modelling duration does not constitute a minimum durability requirement</li> <li>• Energy model: Europe, year 2002</li> </ul>
End of life	In view of the data available on the date of creation of the document, and in accordance with the requirements of the PCR of the «PEP ecopassport» programme, transport of the Reference Product by road only once, over a distance of 1000 km, to a processing site at end of life was counted.
Software used	EIME V5 and its database «Legrand_2012_10_31_version_3, issue de la base CODDE-2012-07»



### ENVIRONMENTAL IMPACTS (continued)

		Total for Life cycle		Raw material and manufacture		Distribution		Installation		Use		End of life	
Mandatory indicators	Contribution to greenhouse effect	4.23E+07	g~CO2	3.60E+05	< 1%	1.13E+04	< 1%	0.00E+00	0%	4.19E+07	99%	6.04E+03	< 1%
	Damage to the ozone layer	9.58E+00	g~CFC-11	2.05E-02	< 1%	8.02E-03	< 1%	0.00E+00	0%	9.55E+00	100%	1.15E-05	< 1%
	Eutrophisation of water	4.15E+02	g~PO43-	1.65E+01	4%	1.88E-01	< 1%	0.00E+00	0%	3.99E+02	96%	1.12E-02	< 1%
	Photochemical ozone formation	2.67E+03	g~C2H4	6.83E+01	3%	9.83E+00	< 1%	0.00E+00	0%	2.59E+03	97%	1.35E+00	< 1%
	Acidification of the air	9.15E+03	g~H+	9.34E+01	1%	1.44E+00	< 1%	0.00E+00	0%	9.05E+03	99%	1.12E+00	< 1%
	Total energy consumed	8.54E+05	MJ	5.15E+03	< 1%	1.43E+02	< 1%	0.00E+00	0%	8.49E+05	99%	8.52E+01	< 1%
	Consumption of water	1.14E+05	dm3	4.99E+03	4%	1.36E+01	< 1%	0.00E+00	0%	1.09E+05	96%	6.27E-01	< 1%

Optional indicators	Depletion of natural resources	1.11E-12	années <sup>-1</sup>	5.44E-13	49%	1.95E-16	< 1%	0.00E+00	0%	5.65E-13	51%	1.24E-16	< 1%
	Toxicity of the air	1.07E+10	m <sup>3</sup>	2.34E+08	2%	2.13E+06	< 1%	0.00E+00	0%	1.05E+10	98%	1.67E+06	< 1%
	Toxicity of the water	1.87E+04	dm <sup>3</sup>	7.18E+01	< 1%	1.58E+00	< 1%	0.00E+00	0%	1.87E+04	100%	2.58E+00	< 1%
	Production of hazardous waste	2.09E+01	kg	1.37E+01	66%	4.22E-03	< 1%	0.00E+00	0%	7.19E+00	34%	7.48E-06	< 1%

The environmental impacts of the Reference Product are representative of the products covered by the PEP, which therefore constitute a homogeneous environmental family.

To determine the environmental impact of a product covered by the PEP other than the cat.number (042827), the following rules apply :  
-the environmental impacts of the manufacturing, distribution and end of life phases are proportional to the mass,  
-the environmental impacts of the use phase is proportional to the power (VA)

The values of these impacts are valid for the context specified in this document. They must not be used directly to draw up the environmental balance sheet for the installation.

Registration number: LGRP-2015-041-V1-en	Drafting rule: PEP-PCR-ed 2.1-FR-2012 12 11 PSR-0005-ed1-FR-2012 12 11
Authorisation number of checker: VH02	Programme information: www.pep-ecopassport.org
Date of issue: 05-2015	Validity period: 4 years
Independent verification of the declaration and data, in accordance with ISO 14025:2006 Internal <input checked="" type="checkbox"/> External <input type="checkbox"/>	
In accordance with ISO 14025 :2006 Type III environmental declaration	
The critical review of the PCR was conducted by a panel of experts chaired by J.Chevalier (CSTB)	
The elements of the present PEP cannot be compared with elements from another programme	

