



Legrand's environmental commitments

> To incorporate management of the environment into our industrial units.

Of all Legrand Group units worldwide, more than 80% are certified ISO 14001 (units that have been in the Group for at least 5 years).



> To take into account the environment in the design of products.

Providing our customers with all relevant information (composition, consumption, end of life, etc.). Reducing the impact of the product on the environment for the whole of its life cycle.

> To offer our customers solutions which are environmentally friendly.



Developing innovative solutions to help our customers to design installations that consume less energy, are better managed and more environmentally friendly.



Description of the products

> Reference products for this environmental profile

The given values are based on the following items.

Function	Two-way switch 10 AX - 250 V – Automatic terminals – NILOE	
Reference products	 Cat.No. 664701 Two-way switch	 Cat. Nos 664701 + 665001 Cover plate one-gang – White

> Products covered by this product environmental profile

Environmental impacts of the reference products are representative of the products covered by this PEP, which therefore constitute a homogeneous environmental family.

Cat. Nos	664301 - 664701 - 664801 - 664702 - 664802 - 664705 - 664805 - 664708 – 664808 - 664709 - 664809	665001 - 665011 - 665002 - 665012 - 665008 - 665018 - 665003 - 665013
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Constituent materials

These products contain no substances that are forbidden by the regulations applicable at the time of their market launch, outside of the maintenance operations carried out during the use phase.

Reference product total mass: 57 g (unit packaging included)

Plastics as % of weight		Metals as % of weight		Others as % of weight	
Polycarbonates (PC)	39.33%	Copper (Cu)	6.60%	Titanium Dioxide (TiO ₂)	3.45%
Acrylonitrile Butadiene Styrene (ABS)	30.20%	Zinc (Zn)	1.15%	Chromium (Cr)	0.20%
		Iron (Fe)	0.75%	Carbon Black	0.05%
		Steel	0.30%		
		Silver (Ag)	0.15%	Others (miscellaneous)	0.05%
				Packaging as % of weight	
				Cardboard	13.25%
				Polyethylene Terephthalate (PET)	3.65%
				Polyethylene (LDPE)	0.76%
				Ink (unspecified)	0.02%
Plastics (miscellaneous)	0.02%	Metals (miscellaneous)	0.05%	Glue (acrylic)	0.02%
Total plastics	69.55%	Total metals	9.00%	Total others and packaging	21.45%

Estimate of the use of recycled materials:

13% by mass

Calculated on the basis of data on recycling in France, source: "Bilan du recyclage 1993-2003, Données et références", 2005 edition, published by the French Agency for the Environment and Energy Control (ADEME).



Manufacture

These products come from Legrand Group production units which have been awarded ISO 14001 environmental certification for manufacturing.



Distribution

Typical transport conditions

- On average this product covers 376 km by road transport from our manufacturing site to the distributor closest to our customer. (Basis for calculation: average distance calculated for products marketed in France).

Packaging

- The 10 g of packaging is made up of 75% paper/cardboard, 20.50% polyethylene terephthalate (PET), 4.30% polyethylene (LDPE), the remainder being glue and ink.
- Potential for recycling: 100% by weight of packaging
- Potential for energy recovery: 100% by weight of packaging

The packaging has been designed in accordance with the currently applicable regulations:

- Directive 94/62/EC relating to packaging and packaging waste
- French application decree: 98-638.

Legrand undertakes:

- To reduce as much as possible its packaging at source in terms of weight and volume, in accordance with the needs of its customers.
- To place onto the market packaging with a content of heavy metals which is <100 ppm and without deliberately introducing substances that are hazardous for the environment and classified "N".
- To design/use packaging that is convertible and where possible reusable.



Use

Use scenario

This product dissipates a power of 38 mW under 3 A and 250 V current, i.e. a total energy consumption of 1997 Wh for 30% use/year over a period of 20 years.

Consumable

No consumables are necessary for the use of the product.

Servicing and maintenance

Neither servicing nor maintenance in the normal conditions of use for this type of product.



End of life

Legrand contributes to the provision of collection and treatment schemes to facilitate disposal of Waste Electrical and Electronic Equipment (WEEE). At Legrand, the design of such equipment already takes on board consideration of its end of life (in terms of marking, easy part separation, elimination of hazardous substances, etc.).

Method of treatment of the product

> Hazardous waste contained in the product:

This product contains no hazardous waste.

> Non hazardous waste contained in the product:

This product contains 47 g of non hazardous waste.

> Potential for recycling:

The potential for recycling of a product corresponds to the percentage of material capable of being recycled using existing current techniques. It takes no account of the existence or not of recycling chains, which are highly dependent on the local situation.

This product contains 96% by weight of material potentially capable of being recycled (other than packaging):

- Plastic materials: : 85%
- Metal materials: : 11%

> Potential for energy recovery:

Energy recovery consists in using the calories contained in waste, by burning it and recovering the energy thus produced, to heat buildings, for example, or to produce electricity. It means using the stored energy contained in the waste.

This product contains 85% by weight of product capable of being converted for the recovery of energy (excluding packaging).



Environmental impacts

Methodology

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

Assessment of the environmental impacts of the reference product concerns the following stages of the life cycle: raw materials, manufacture, distribution, and use.

The modelling assumptions for the use phase are:

- This product dissipates a power of 38 mW under 3 A and 250 V current, i.e. a total energy consumption of 1997 Wh for 30% use/year over a period of 20 years.
- Period of use (*): 20 years
- Unit packaging included

Indicators (see glossary)	Overall M+D+U	Unit	Manufact. M	Distribution D	Use U
Depletion of natural resources	7.126E-15	Y-1	99%	< 1%	< 1%
Total energy consumed	30.364	MJ	24%	2%	74%
Consumption of water	6.631	dm ³	29%	6%	65%
Contribution to the greenhouse effect	622.300	g~CO ₂	60%	3%	37%
Contribution to the depletion of the ozone layer	6.138E-05	g~CFC-11	65%	7%	28%
Contribution to the creation of photochemical ozone	0.299	g~C ₂ H ₄	61%	6%	33%
Potential for acidification of the air	0.124	g~H ⁺	63%	4%	33%
Production of hazardous waste	6.716E-03	kg	58%	1%	41%

Modelling performed with EIME software, version 4.0 and its database in version 11.2, from the original 11.0 database.
Modelling of electricity for the "Use" phase: module "Electricity France: 2000"

(*) Period of use concerned for the assessment of the environmental impact.

This period of use is different from the life expectancy of the product and does not constitute a minimum durability requirement. It is the quantified expression of a unit of service rendered.

The environmental impacts of products other than the reference product are generally proportional to product weight.



Glossary

LCA	Compilation and assessment of inputs and outputs, as well as the potential environmental impacts of a product, or a system, during its life cycle, "from the cradle to the grave". This approach is described by standard ISO14040 and its related standards.
Life cycle approach	Method of taking into account all the life stages of a product (manufacture, installation, use and end of life) in order to determine the consequences for the environment.
Consumption of water	Indicates the total water consumption for the whole life cycle of the product.
Non-hazardous waste	This is made up of non-toxic waste and is of a similar nature to household waste. Its definition is codified by the European community (Annex of Decision 2000/532/EC amended by Decisions 2001/118/EC and 2001/119/EC)
Hazardous waste	This is specific waste having a certain level of toxicity and requiring special treatment. Its definition is codified by the European community (Annex of Decision 2000/532/EC amended by Decisions 2001/118/EC and 2001/119/EC)
Waste WEEE	For products in the application area of the European Directive on Waste Electronic and Electrical Equipment (2002/96/EC), part of the product having to be treated selectively in compliance with Annex II of the Directive.
Eco-solution	Products or services enabling the reduction of the environmental impacts of a building.
EIME	Environmental Information and Management Explorer - Product environmental impact modelling software based on the life cycle assessment methodology.
Total energy consumed	Indicates the total energy consumption in megajoules for the whole life cycle of the product.
Depletion of natural resources	Indicates the depletion of natural resources, by considering the quantity of world reserves (minerals, fossils, etc.) for these resources and the current level of consumption. Expressed as a fraction of the reserves that disappear each year.
Reusable	Said of a product or packaging capable of being used for the same function provided the product's proper functionality is verified by the person carrying out the operation.
Convertible	Said of a product or packaging capable of being reused, recycled or from which it is possible to recover energy by incineration.
Contribution to the depletion of the ozone layer	Indicates what all the life cycle phases of the product release as CFC-11 gram-equivalents.
Contribution to the greenhouse effect	Indicates what all the life cycle phases of the product release as CO ₂ gram-equivalents. Example of the equivalence principle: 1 g of CO ₂ = 1 g-CO ₂ ; 1 g of CH ₄ (methane) is equivalent to the effect of 64 g of CO ₂ , etc.
Contribution to the creation of photochemical ozone	Indicates as g-C ₂ H ₄ the gas emissions having an effect on the creation of photochemical ozone in the lower atmosphere (smog) under the effect of solar radiation.
Potential for acidification of the air	Indicates the potential for acidification of the air caused by the release of certain gases into the atmosphere. Expressed as H ⁺ ion gram-equivalent.
Reference product(s)	Product (or product grouping) modelled in the presented LCA.
Production of hazardous waste	Indicates the weight of ultimate hazardous waste produced for the whole life cycle of the product.
Potential for recycling	% by weight of the product or packaging capable of being re-injected into a manufacturing circuit of the same product or another product.
Potential for energy recovery	% by weight of the product or packaging from which energy can be recovered. Energy recovery consists in using the calories contained in waste, by burning it and recovering the energy thus produced, to heat buildings, for example, or to produce electricity. It is using the stored energy contained in the waste.