

# Product Environmental Profile

Niloé™

Two-Way switch - 10AX - White



## LEGRAND'S ENVIRONMENTAL COMMITMENTS

• **Incorporate environmental management into our industrial sites**

Of all Legrand sites worldwide, over 85% are ISO 14001-certified [sites belonging to the Group for more than five years].

• **Offer our customers environmentally friendly solutions**

Develop innovative solutions to help our customers design more energy efficient, better managed and more environmentally friendly installations.

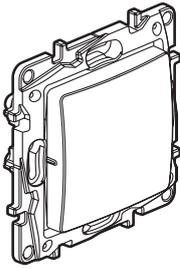
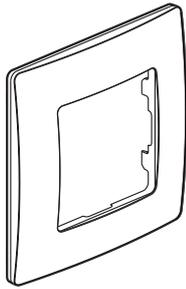
• **Involve the environment in product design and provide informations in compliance with ISO 14025**

Reduce the environmental impact of products over their whole life cycle.

Provide our customers with all relevant information [composition, consumption, end of life, etc.].



## REFERENCE PRODUCT

|                          |   |  |
|--------------------------|---|--|
| <b>Function</b>          | Allow the making and breaking, in air, of a 250 V low voltage circuit with rated load not exceeding 10 AX, according to the standards NFC-15100 et IEC 60669-1, with a non-continuous operation (30% of time) during 20 years (household or similar purposes) at 30% of rated load. |  |
| <b>Reference Product</b> |   |  |
|                          | Cat. No 6 647 01  | Cat. No 6 650 01   |
|                          | Mechanism   | White plate  |
|                          | To-way switch - 10AX - White  |  |

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 is representative of the following products:

| Mechanisms   | Plates   | Accessory  |
|--|--|--|
| <ul style="list-style-type: none"> <li>• 6 647 01</li> <li>• 6 643 01</li> <li>• 6 648 01</li> <li>• 6 641 01</li> <li>• 6 639 01</li> <li>• 6 647 02</li> <li>• 6 648 02</li> <li>• 6 639 02</li> <li>• 6 645 01</li> <li>• 6 646 01</li> <li>• 6 645 02</li> <li>• 6 646 02</li> </ul> | <ul style="list-style-type: none"> <li>• 6 650 01</li> <li>• 6 650 02</li> <li>• 6 650 03</li> <li>• 6 650 04</li> <li>• 6 650 05</li> <li>• 6 650 08</li> <li>• 6 650 09</li> <li>• 6 650 11</li> <li>• 6 650 12</li> <li>• 6 650 13</li> <li>• 6 650 14</li> <li>• 6 650 15</li> </ul> | <ul style="list-style-type: none"> <li>• 6 650 99</li> </ul> |

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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 respects the restrictions on use of hazardous substances as defined in the RoHS directive 2011/65/EU.

|  |                                   |
|--|-----------------------------------|
| <b>Total weight of Reference Product</b> | <b>68 g</b> (with unit packaging) |
|--|-----------------------------------|

| Plastics as % of weight |                   | Metals as % of weight |              | Packaging as % of weight        |               |
|-------------------------|-------------------|-----------------------|--------------|---------------------------------|---------------|
| PC                      | <b>34.7 %</b>     | Copper Alloys         | <b>3.9 %</b> | Paper (packaging)               | <b>21.5 %</b> |
| ABS                     | <b>26.4 %</b>     | Other metal           | <b>2.5 %</b> | Wood (packaging)                | <b>6.0 %</b>  |
| PET                     | <b>3.1 %</b>      | Steel                 | <b>0.9 %</b> | PE (packaging)                  | <b>0.6 %</b>  |
|                         |                   | Silver alloy          | <b>0.5 %</b> | PP (packaging)                  | <b>0.1 %</b>  |
|                         |                   |                       |              |                                 |               |
|                         |                   |                       |              |                                 |               |
| PS                      | <b>&lt; 0.1 %</b> |                       |              |                                 |               |
| <b>Total plastics</b>   | <b>64.2 %</b>     | <b>Total metals</b>   | <b>7.6 %</b> | <b>Total others (packaging)</b> | <b>28.2 %</b> |

Estimated recycled material content: 19 % by mass.



## ■ MANUFACTURE

This Reference Product comes from sites that has 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 450 km by road from our warehouse to the local point of distribution into the market in France.

Packaging is compliant with European directive 2004/12/EU concerning packaging and packaging waste and french decree 98-638. At their end of life, its recyclability rate is 96 % (in % of the mass of the packaging).



## ■ INSTALLATION

For the installation of the product, only standard tools are needed.



## ■ USE

Under normal conditions of use, this product requires no servicing, no maintenance or additional products.

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## END OF LIFE

The product end-of-life factors are taken into account during 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.

### • Recyclability rate:

Calculated using the method described in technical report IEC/TR 62635, the recyclability rate of the product is estimated at 96%. 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) : 61 %
- metal materials (excluding packaging) : 8 %
- packaging (all types of materials) : 27 %



## 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 France in an electrical installation in compliance with NF C 15100 and associated product standards.

For each phase, the following modelling elements were taken in account:

|                                   |   |
|-----------------------------------|---|
| <b>Manufacture</b>                | Materials and components of the product, all transport for the manufacturing, the packaging and the waste generated by the manufacturing.   |
| <b>Distribution</b>               | Transport between the last Group distribution centre and an average delivery point in the sales area.   |
| <b>Installation</b>               | The end of life of the packaging.   |
| <b>Use</b>                        | <ul style="list-style-type: none"> <li>• Product category : passive product.</li> <li>• Use scenario : non-continuous operation for 20 years at 30% of rated load, during 30% of the time. This modelling duration does not constitute a minimum durability requirement.</li> <li>• Energy model: France - 2002.</li> </ul> |
| <b>End of life</b>                | The default end of life scenario maximizing the environmental impacts.  |
| <b>Software and database used</b> | EIME V5 and its database «CODDE-2015-04»  |

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## SELECTION OF ENVIRONMENTAL IMPACTS

|   | Total for Life cycle |  | Raw material and manufacture |      | Distribution |      | Installation |      | Use      |      | End of life |      |
|---|----------------------|--|------------------------------|------|--------------|------|--------------|------|----------|------|-------------|------|
|   | Value                | Unit                                   | Value                        | %    | Value        | %    | Value        | %    | Value    | %    | Value       | %    |
| Global warming                                | 1.02E+00             | kgCO <sub>2</sub> eq.                  | 4.71E-01                     | 46%  | 1.52E-03     | < 1% | 1.17E-03     | < 1% | 5.41E-01 | 53%  | 5.53E-03    | < 1% |
| Ozone depletion                               | 1.20E-06             | kgCFC-11 eq.                           | 3.09E-08                     | 3%   | 3.07E-12     | < 1% | 8.21E-12     | < 1% | 1.17E-06 | 97%  | 1.35E-10    | < 1% |
| Acidification of soils and water              | 2.61E-03             | kgSO <sub>2</sub> eq.                  | 6.61E-04                     | 25%  | 6.81E-06     | < 1% | 5.58E-06     | < 1% | 1.92E-03 | 73%  | 2.12E-05    | < 1% |
| Water eutrophication                          | 3.74E-04             | kg(PO <sub>4</sub> ) <sup>3-</sup> eq. | 1.66E-04                     | 44%  | 1.57E-06     | < 1% | 5.26E-06     | 1%   | 1.77E-04 | 47%  | 2.49E-05    | 7%   |
| Photochemical ozone formation                 | 1.99E-04             | kgC <sub>2</sub> H <sub>4</sub> eq.    | 8.60E-05                     | 43%  | 4.84E-07     | < 1% | 3.96E-07     | < 1% | 1.11E-04 | 56%  | 1.65E-06    | < 1% |
| Depletion of abiotic resources - elements     | 2.85E-04             | kgSb eq.                               | 2.84E-04                     | 100% | 6.07E-11     | < 1% | 5.15E-11     | < 1% | 1.23E-07 | < 1% | 3.49E-10    | < 1% |
| Total use of primary energy                   | 5.72E+01             | MJ                                     | 9.07E+00                     | 16%  | 2.14E-02     | < 1% | 1.68E-02     | < 1% | 4.80E+01 | 84%  | 8.48E-02    | < 1% |
| Net use of fresh water                        | 9.01E-03             | m <sup>3</sup>                         | 2.86E-03                     | 32%  | 1.36E-07     | < 1% | 3.57E-07     | < 1% | 6.15E-03 | 68%  | 4.66E-06    | < 1% |
| Depletion of abiotic resources - fossil fuels | 1.18E+01             | MJ                                     | 6.73E+00                     | 57%  | 2.13E-02     | < 1% | 1.63E-02     | < 1% | 4.98E+00 | 42%  | 7.86E-02    | < 1% |
| Water pollution                               | 1.82E+02             | m <sup>3</sup>                         | 1.59E+02                     | 88%  | 2.49E-01     | < 1% | 1.80E-01     | < 1% | 2.12E+01 | 12%  | 6.35E-01    | < 1% |
| Air pollution                                 | 8.23E+01             | m <sup>3</sup>                         | 6.86E+01                     | 83%  | 6.22E-02     | < 1% | 1.30E-01     | < 1% | 1.29E+01 | 16%  | 6.35E-01    | < 1% |

The values of the 27 impacts defined in the PCR-ed3-EN-2015 04 02 are available in the digital database of pep-ecopassport.org website.

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## SELECTION OF ENVIRONMENTAL IMPACTS

The environmental impacts refer to a complete configuration composed by switch mechanism and plate.

The environmental impacts, other than the Reference Product, are obtained by adopting the following coefficients on those of the Reference Product.

|   | Manufacturing | Distribution | Installation | Use | End of life |
|---|---------------|--------------|--------------|-----|-------------|
| 6 643 01 (by 50)                              | 1             | 1            | 0.7          | 1   | 1           |
| 6 647 01 + plate 6 650 09 (by 100)            | 1             | 1            | 1            | 1   | 1           |
| 6 648 01 (Ivory)                              | 1             | 1            | 1            | 1   | 1           |
| 6 647 01 + plate 6 650 08 (2 gang renovation) | 2             | 2.5          | 3.5          | 2   | 2           |

|                                | Manufacturing                             |                  | Distribution | Installation | Use | End of life |
|--------------------------------|---|------------------|--------------|--------------|-----|-------------|
|                                | Depletion of abiotic resources - elements | Other indicators |              |              |     |             |
| 6 647 02 - 6 648 02            | 3.2                                       | 1.3              | 1            | 1            | 1.6 | 1           |
| 6 641 01 - 6 649 01            | 1   | 1                | 1.3          | 1.6          | 1   | 1           |
| 6 645 01 - 6 646 01            | 1   | 1                | 1.3          | 1            | 1   | 1           |
| 6 649 02 - 6 645 02 - 6 646 02 | 3.2                                       | 1.4              | 1.3          | 1            | 1.6 | 1.2         |

For the multi-gang configurations, the full environmental impacts of the Reference Product have to be multiplied by the number of installed products.

|   |  |
|---|--|
| Registration N°: LGRP-00038-V01-01-EN   | Drafting rules: «PEP-PCR-ed3-EN-2015 04 02»<br>Supplemented by «PSR-0005-ed1-2012 12 11»                   |
| Verifier accreditation N°: VH23   | Information and reference documents : <a href="http://www.pep-ecopassport.org">www.pep-ecopassport.org</a> |
| Date of issue: 02-2016  | Validity period: 5 years   |
| Independent verification of the declaration and data, in compliance with ISO 14025:2010<br>Internal <input checked="" type="checkbox"/> External <input type="checkbox"/> |  |
| The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN)   |  |
| The elements of the present PEP cannot be compared with elements from another program   |  |
| Document in compliance with ISO 14025 : 2010: «Environmental labels and declarations. Type III environmental declarations»  |  |
| Environmental data in alignment with EN 15804 : 2012 + A1 : 2013  |  |

