

# Product Environmental Profile

## Altivar Soft Starter ATS490 47A





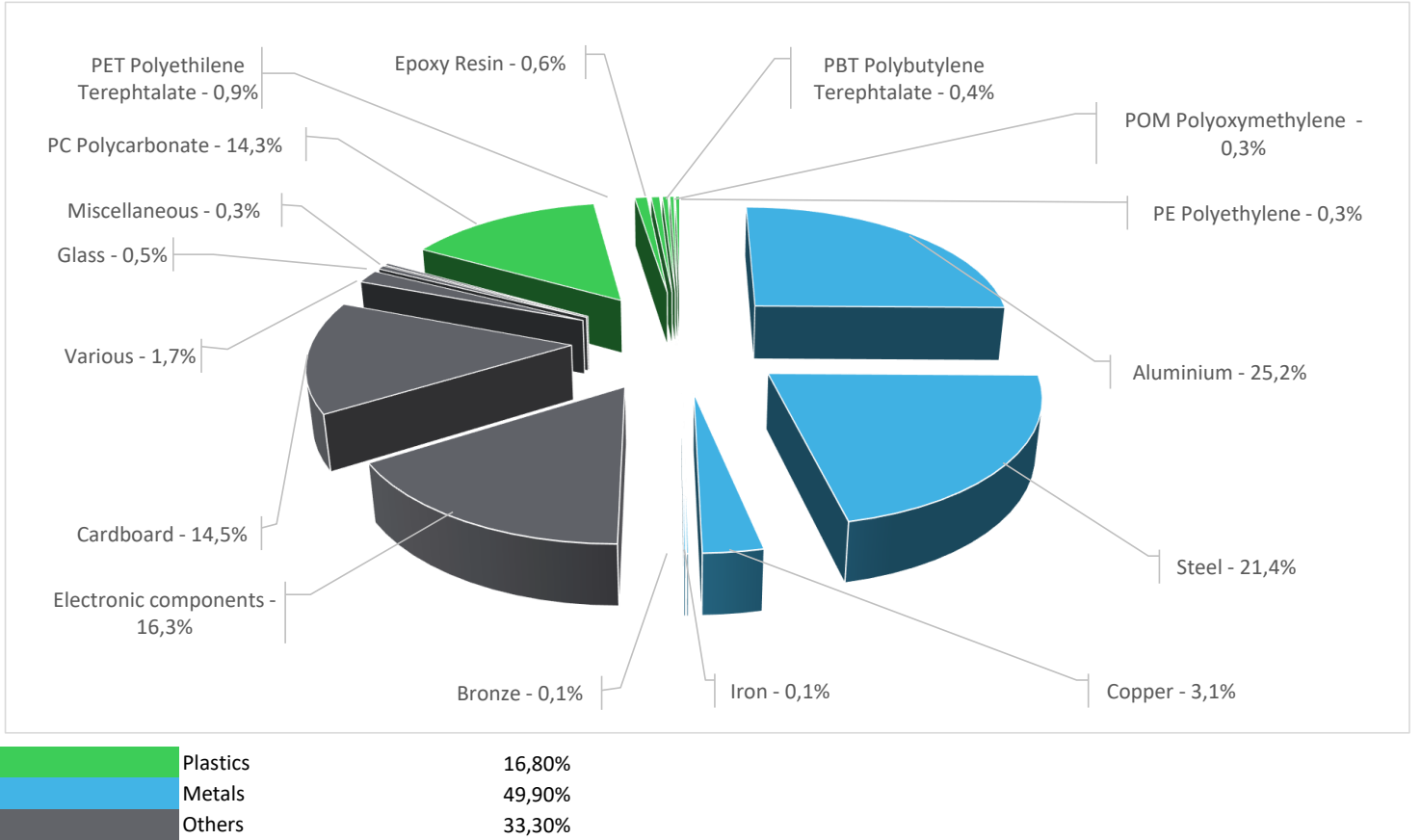
## General information

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reference product          | Altivar Soft Starter ATS490 47A 208 to 690V AC control supply 110 to 230V AC - ATS490D47Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Description of the product | The main function of the Altivar Soft Starter product range is primarily to intend for the soft starting and breaking of the rotational speed of an asynchronous electric motor for heavy duty industry and pumps.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Description of the range   | This PEP refer to a range of products assimilated to a reference product by an extrapolation rule. This range consists of products ATS490 with ratings from 32A to 47A for operation on 208 to 690V AC control supply 110 to 230V AC, 3-phase supplies IP20. 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.                                                                                                                                                                                                                                                                |
| Functional unit            | The aim of soft starter is to drive an asynchronous motor (squirrel cage) by limitation of the current during acceleration and deceleration phase with a torque control. It's based on three phases dimmer with Silicon controlled rectifier (thyristor). The rating of softstarter is given by nominal current 47A in the case study which lead to drive several power motor depending of power network voltage ie 230V power motor of 11kW and 690V power motor of 37kW. Calculation of the environmental impacts is based on 10 years of product service lifetime. The usage profile taken into account is 3,6% uptime in active phase, 46,4% uptime in stand by phase and 50% in control phase. |



## Constituent materials

|                        |         |                                                                           |
|------------------------|---------|---------------------------------------------------------------------------|
| Reference product mass | 6,91 kg | including the product, its packaging, additional elements and accessories |
|------------------------|---------|---------------------------------------------------------------------------|



## Substance assessment

Details of ROHS and REACH substances information are available on the Schneider-Electric Green Premium website  
<https://www.se.com/ww/en/work/support/green-premium/>



## Additional environmental information

|             |                          |     |                                                                                                                                                                                                                                                                                                                                                |
|-------------|--------------------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End Of Life | Recyclability potential: | 76% | The recyclability rate was calculated from the recycling rates of each material making up the product based on REEECYLAB 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      | 10 years                                                                                                                                                                                                                                              |                                                   |                                                   |                                                   |
| Product category                 | Other equipment : Active product                                                                                                                                                                                                                      |                                                   |                                                   |                                                   |
| 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 consumption          | The electricity consumed during manufacturing processes is considered for each part of the product individually, the final assembly generates a negligible consumption.                                                                               |                                                   |                                                   |                                                   |
| Installation elements            | The product does not require any installation operations.                                                                                                                                                                                             |                                                   |                                                   |                                                   |
| Use scenario                     | The product is in active phase 3,6% of the time with a power use of 36,2 W, in stand-by phase 46,6% of the time with a power use of 33,3 W and in control phase 50% of the time with a power use of 15,3 W, for 10 years.                             |                                                   |                                                   |                                                   |
| Time representativeness          | The collected data are representative of the year 2024                                                                                                                                                                                                |                                                   |                                                   |                                                   |
| Technological representativeness | The Modules of Technologies such as material production, manufacturing process and transport technology used in this PEP analysis (LCA EIME in this case) are similar and representative of the actual type of technologies used to make the product. |                                                   |                                                   |                                                   |
| Final assembly site              | Batam Indonesia                                                                                                                                                                                                                                       |                                                   |                                                   |                                                   |
| Geographical representativeness  | Europe                                                                                                                                                                                                                                                |                                                   |                                                   |                                                   |
| Energy model used                | [A1 - A3]                                                                                                                                                                                                                                             | [A5]                                              | [B6]                                              | [C1 - C4]                                         |
|                                  | Electricity Mix; Low voltage; 2022; Indonesia, ID (A1-A3) 2020; China, CN (A1-A2) 2018; Europe, EU-27 (A1-A2)                                                                                                                                         | Electricity Mix; Low voltage; 2018; Europe, EU-27 | Electricity Mix; Low voltage; 2018; Europe, EU-27 | Electricity Mix; Low voltage; 2018; 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.schneider-electric.com/contact>

| Mandatory Indicators                                         |                           | Altivar Soft Starter ATS490 47A 208 to 690V AC control supply 110 to 230V AC - ATS490D47Y |                           |                     |                     |                 |                         |
|--------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------|---------------------------|---------------------|---------------------|-----------------|-------------------------|
| Impact indicators                                            | Unit                      | Total                                                                                     | [A1 - A3] - Manufacturing | [A4] - Distribution | [A5] - Installation | [B1 - B7] - Use | [C1 - C4] - End of life |
| Contribution to climate change                               | kg CO2 eq                 | 1,04E+03                                                                                  | 1,46E+02                  | 1,35E+00            | 1,10E+00            | 8,76E+02        | 1,16E+01                |
| Contribution to climate change-fossil                        | kg CO2 eq                 | 1,03E+03                                                                                  | 1,44E+02                  | 1,35E+00            | 1,05E+00            | 8,75E+02        | 1,15E+01                |
| Contribution to climate change-biogenic                      | kg CO2 eq                 | 2,66E+00                                                                                  | 1,42E+00                  | 0*                  | 5,09E-02            | 1,17E+00        | 2,43E-02                |
| Contribution to climate change-land use and land use change  | kg CO2 eq                 | 1,18E-03                                                                                  | 1,18E-03                  | 0*                  | 0*                  | 0*              | 1,32E-06                |
| Contribution to ozone depletion                              | kg CFC-11 eq              | 4,42E-05                                                                                  | 4,01E-05                  | 0*                  | 1,42E-08            | 3,75E-06        | 3,55E-07                |
| Contribution to acidification                                | mol H+ eq                 | 6,20E+00                                                                                  | 1,16E+00                  | 8,52E-03            | 3,15E-03            | 5,00E+00        | 3,69E-02                |
| Contribution to eutrophication, freshwater                   | kg (PO4) <sup>3-</sup> eq | 6,22E-03                                                                                  | 2,71E-03                  | 0*                  | 2,49E-05            | 2,40E-03        | 1,09E-03                |
| Contribution to eutrophication marine                        | kg N eq                   | 7,25E-01                                                                                  | 1,43E-01                  | 3,99E-03            | 1,37E-03            | 5,68E-01        | 8,61E-03                |
| Contribution to eutrophication, terrestrial                  | mol N eq                  | 1,02E+01                                                                                  | 1,54E+00                  | 4,38E-02            | 9,54E-03            | 8,53E+00        | 9,34E-02                |
| Contribution to photochemical ozone formation - human health | kg COVNM eq               | 2,38E+00                                                                                  | 5,18E-01                  | 1,11E-02            | 2,19E-03            | 1,82E+00        | 2,78E-02                |
| Contribution to resource use, minerals and metals            | kg Sb eq                  | 2,58E-02                                                                                  | 2,57E-02                  | 0*                  | 0*                  | 6,35E-05        | 3,55E-05                |
| Contribution to resource use, fossils                        | MJ                        | 2,53E+04                                                                                  | 2,59E+03                  | 1,88E+01            | 1,06E+01            | 2,23E+04        | 3,59E+02                |
| Contribution to water use                                    | m3 eq                     | 9,87E+01                                                                                  | 6,49E+01                  | 0*                  | 9,58E-02            | 3,10E+01        | 2,77E+00                |

| Inventory flows Indicators                                                                                      |      | Altivar Soft Starter ATS490 47A 208 to 690V AC control supply 110 to 230V AC - ATS490D47Y |                              |                        |                        |                 |                            |
|-----------------------------------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------------|------------------------------|------------------------|------------------------|-----------------|----------------------------|
| Inventory flows                                                                                                 | Unit | Total                                                                                     | [A1 - A3] -<br>Manufacturing | [A4] -<br>Distribution | [A5] -<br>Installation | [B1 - B7] - Use | [C1 - C4] - End<br>of life |
| Contribution to use of renewable primary energy excluding renewable primary energy used as raw material         | MJ   | 4,35E+03                                                                                  | 5,83E+01                     | 0*                     | 1,40E+00               | 4,29E+03        | 1,46E+00                   |
| Contribution to use of renewable primary energy resources used as raw material                                  | MJ   | 5,76E+00                                                                                  | 5,76E+00                     | 0*                     | 0*                     | 0*              | 0*                         |
| Contribution to total use of renewable primary energy resources                                                 | MJ   | 4,35E+03                                                                                  | 6,41E+01                     | 0*                     | 1,40E+00               | 4,29E+03        | 1,46E+00                   |
| Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material | MJ   | 2,52E+04                                                                                  | 2,53E+03                     | 1,88E+01               | 1,06E+01               | 2,23E+04        | 3,59E+02                   |
| Contribution to use of non renewable primary energy resources used as raw material                              | MJ   | 6,18E+01                                                                                  | 6,18E+01                     | 0*                     | 0*                     | 0*              | 0*                         |
| Contribution to total use of non-renewable primary energy resources                                             | MJ   | 2,53E+04                                                                                  | 2,59E+03                     | 1,88E+01               | 1,06E+01               | 2,23E+04        | 3,59E+02                   |
| Contribution to use of secondary material                                                                       | kg   | 1,15E+00                                                                                  | 1,15E+00                     | 0*                     | 0*                     | 0*              | 0*                         |
| Contribution to use of renewable secondary fuels                                                                | MJ   | 0,00E+00                                                                                  | 0*                           | 0*                     | 0*                     | 0*              | 0*                         |
| Contribution to use of non renewable secondary fuels                                                            | MJ   | 0,00E+00                                                                                  | 0*                           | 0*                     | 0*                     | 0*              | 0*                         |
| Contribution to net use of freshwater                                                                           | m³   | 2,31E+00                                                                                  | 1,52E+00                     | 0*                     | 2,23E-03               | 7,22E-01        | 6,45E-02                   |
| Contribution to hazardous waste disposed                                                                        | kg   | 3,42E+02                                                                                  | 3,24E+02                     | 0*                     | 0*                     | 1,64E+01        | 1,34E+00                   |
| Contribution to non hazardous waste disposed                                                                    | kg   | 2,10E+02                                                                                  | 8,07E+01                     | 4,72E-02               | 4,72E-01               | 1,26E+02        | 2,58E+00                   |
| Contribution to radioactive waste disposed                                                                      | kg   | 8,76E-02                                                                                  | 5,92E-02                     | 3,36E-05               | 5,77E-05               | 2,64E-02        | 1,91E-03                   |
| Contribution to components for reuse                                                                            | kg   | 0,00E+00                                                                                  | 0*                           | 0*                     | 0*                     | 0*              | 0*                         |
| Contribution to materials for recycling                                                                         | kg   | 5,22E+00                                                                                  | 7,39E-01                     | 0*                     | 7,53E-03               | 0*              | 4,47E+00                   |
| Contribution to materials for energy recovery                                                                   | kg   | 2,29E-07                                                                                  | 2,29E-07                     | 0*                     | 0*                     | 0*              | 0*                         |
| Contribution to exported energy                                                                                 | MJ   | 6,44E-02                                                                                  | 5,15E-03                     | 0*                     | 4,38E-02               | 0*              | 1,55E-02                   |

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

|                                                                     |         |          |                                 |
|---------------------------------------------------------------------|---------|----------|---------------------------------|
| Contribution to biogenic carbon content of the product              | kg de C | 0,00E+00 | According to                    |
| Contribution to biogenic carbon content of the associated packaging | kg de C | 2,81E-01 | ADEME - EN 16485 - APESA/RECORD |

| Mandatory Indicators                                         |               | Altivar Soft Starter ATS490 47A 208 to 690V AC control supply 110 to 230V AC - ATS490D47Y |      |      |      |      |      |          |      |
|--------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------|------|------|------|------|------|----------|------|
| Impact indicators                                            | Unit          | [B1 - B7] - Use                                                                           | [B1] | [B2] | [B3] | [B4] | [B5] | [B6]     | [B7] |
| Contribution to climate change                               | kg CO2 eq     | 8,76E+02                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 8,76E+02 | 0*   |
| Contribution to climate change-fossil                        | kg CO2 eq     | 8,75E+02                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 8,75E+02 | 0*   |
| Contribution to climate change-biogenic                      | kg CO2 eq     | 1,17E+00                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 1,17E+00 | 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  | 3,75E-06                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 3,75E-06 | 0*   |
| Contribution to acidification                                | mol H+ eq     | 5,00E+00                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 5,00E+00 | 0*   |
| Contribution to eutrophication, freshwater                   | kg (PO4)³⁻-eq | 2,40E-03                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 2,40E-03 | 0*   |
| Contribution to eutrophication marine                        | kg N eq       | 5,68E-01                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 5,68E-01 | 0*   |
| Contribution to eutrophication, terrestrial                  | mol N eq      | 8,53E+00                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 8,53E+00 | 0*   |
| Contribution to photochemical ozone formation - human health | kg COVNM eq   | 1,82E+00                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 1,82E+00 | 0*   |
| Contribution to resource use, minerals and metals            | kg Sb eq      | 6,35E-05                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 6,35E-05 | 0*   |
| Contribution to resource use, fossils                        | MJ            | 2,23E+04                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 2,23E+04 | 0*   |
| Contribution to water use                                    | m3 eq         | 3,10E+01                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 3,10E+01 | 0*   |

| Inventory flows Indicators                                                                                      |      | Altivar Soft Starter ATS490 47A 208 to 690V AC control supply 110 to 230V AC - ATS490D47Y |      |      |      |      |      |          |      |
|-----------------------------------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------------|------|------|------|------|------|----------|------|
| 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   | 4,29E+03                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 4,29E+03 | 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   | 4,29E+03                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 4,29E+03 | 0*   |
| Contribution to use of non renewable primary energy excluding non renewable primary energy used as raw material | MJ   | 2,23E+04                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 2,23E+04 | 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   | 2,23E+04                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 2,23E+04 | 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   | 7,22E-01                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 7,22E-01 | 0*   |
| Contribution to hazardous waste disposed                                                                        | kg   | 1,64E+01                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 1,64E+01 | 0*   |
| Contribution to non hazardous waste disposed                                                                    | kg   | 1,26E+02                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 1,26E+02 | 0*   |
| Contribution to radioactive waste disposed                                                                      | kg   | 2,64E-02                                                                                  | 0*   | 0*   | 0*   | 0*   | 0*   | 2,64E-02 | 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 v6.1, database version 2023-02 in compliance with ISO14044, EF 3.0 method is applied, for biogenic carbon storage, assessment methodology 0/0 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.

To extrapolate the impact to another product from the range, apply the following extrapolation rules to each indicator per life cycle stage:

MANUFACTURING (i) = Mass of (product+packaging) in grams / Mass of (reference product+reference packaging) in grams

DISTRIBUTION (i) = Mass of (product+packaging) in grams / Mass of (reference product+reference packaging) in grams

INSTALLATION (i) = Mass of (packaging) in grams / Mass of (reference packaging) in grams

USE (i) = Power dissipated in Watts / Power dissipated of the reference product in Watts

END OF LIFE (i) = Mass of (product) in grams / Mass of (reference product) in grams

TOTAL (i) = Σ Life Cycle Stages (i)

|                                                                                                                    |                      |                                     |                                                                      |
|--------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------|----------------------------------------------------------------------|
| Registration number :                                                                                              | SCHN-00868-V01.01-EN | Drafting rules                      | PCR-4-ed4-EN-2021 09 06                                              |
|                                                                                                                    |                      | Supplemented by                     | No PSR                                                               |
| Verifier accreditation N°                                                                                          | VH42                 | Information and reference documents | <a href="http://www.pep-ecopassport.org">www.pep-ecopassport.org</a> |
| Date of issue                                                                                                      | 05-2024              | 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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SCHN-00868-V01.01-EN

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05-2024

ENVPEP2209014\_V1 - SCHN-00868-V01.01-EN

05-2024