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The International EPD® System
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02
UN CPC 4993
Global

Environmental Product Declaration

In accordance with ISO 14025 for:

Cleaning trolley for professional use
“Magic System 760 Safety - MS760S0C0B00”

TTS Cleaning S.r.l.
TTS Cleaning S.R.L. (Headquarters)

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TTS Cleaning is an Italian company specialized in the development and production of manual professional cleaning systems; it is today a leading company of the international cleaning sector. Its competence is the result of a long experience in this field and of a careful analysis of the needs of the different sectors, from large luxury hotels to small restaurants, from schools to airports, from factories to hospitals and clinics, where hygiene is not only a merely added value, but rather a necessity. But the real achievement of the company is the high level of professionalism reached by its customers: TTS experts are always available for sales network training, site inspections and final operator training needs.

Some figures of this success story

- 1987: year of foundation
- 15 years: average length of service of our staff
- 35,000 m² of warehouse
- More than 60 patents filed
- We export to over 80 countries worldwide
- 4 foreign branches: Spain, Brazil, UK and Germany
- More than 4,200 items in the catalogue
The continuous investment in innovation:

- Design and manufacture strictly MADE IN ITALY
- Research for INNOVATIVE MATERIALS: more hygienic, lightweight and strong
- Increasing the ROI (return on investments) of our products: efficiency and guaranteed PERFORMANCE over time
- Studies to improve health and ERGONOMICS of the operators: maximum results with minimum effort
- CUSTOMIZED SOLUTIONS: TTS projects arise from the specific needs of its customers

Sustainability goal: A cleaner future? It’s in our hands...

- COMPANY CERTIFICATIONS: REACH compliance, ISO 14001 certification, ISO 9001 certification
- PRODUCT CERTIFICATIONS: EU Ecolabel
- SPARE PARTS: extension of the product’s life
- COMMERCIAL BRANCHES: timely service to customers and reduction of environmental impact of transports
- MADE IN ITALY: attention to detail of a company that exports Italian quality worldwide
- RECYCLING OF MATERIALS: wide range of products made of almost entirely polypropylene, which makes them recyclable
- Use of regenerated Polymers: range of PSV (Plastic Second Life) certified products as made with more than 30% of raw materials resulting from recycling
MAGIC TROLLEYS can be configured to meet the needs of every working condition. The wide range of components and accessories allows to create an infinite number of models, from compact to complete ones, offering an efficient solutions in line with the type of environment and with the different operations to be carried out.

Magic configurations with Hermetic buckets are an optimal cleaning and sanitizing solution, with the pre-soaking method. The hermetic bucket system employs a previously soaked mop for each environment, reaching high hygienic standards and preventing cross-contamination, while simplifying work operations.

Operators can avail themselves of a unique tool, thanks to its ergonomic features, component modularity and capacity, made of sturdy polypropylene and therefore easily recyclable. Furthermore, these trolleys have obtained the important Italian and European PSV (Plastic Second Life) certification, thanks to the use of recycled plastics. The soft and linear design makes the Magic trolley ideal for every work environment; for an even more powerful effect, TTS offers the possibility of customizing doors and walls with artwork, images and logos.

All work tools can be organized thanks to the lockable drawers equipped with end-stroke lock; in order to have tools and cloths always close-by, the trolley can be equipped with four upper colour-coded buckets.

From a hygiene viewpoint, the smooth and rounded doors, walls and structures ensure a simple and in-depth cleaning of the trolley, thanks to the absence of cavities where germs could settle.

Impact quantification and the following EPD communication have been developed in accordance with standard UNI EN ISO14044:2006 on LCA and PCR for professional cleaning trolleys, PCR 2008:07 version 2.2 “Cleaning trolleys for professional use” of THE INTERNATIONAL EPD® SYSTEM.

The product under study is a cleaning trolley for professional use, in particular for cleaning hospital environments.

In particular, this trolley is the “Magic System 760 Safety - MS760S0C0B00 model”.

We specify that:
• final results are presented per declared unit and are not related to the lifetime of the product
• final results of products with different lifetime cannot be directly compared
In particular “MAGIC SYSTEM MS760S0C0B00” trolley is mainly made with recyclable materials (approx. 90% of the total weight of the trolley) except from the wheels.

In standard use conditions, the trolley has an average life of six years, after which it must be completely replaced.

Concerning its maintenance, based on historical data, there are no significant data related to spare parts request.

At the end of the trolley lifecycle, this study has considered the cleaning trolley to be disposed/recovered according to the distribution market.

In particular, from the analysis performed to identify the most representative methods for the end of life of the product under study, we found that:
- the global rate of paper recovery, according to an article in the Pulp & Paper International (PPI), based on the RISI of 2012, is 57%. This article assumes that from 2012 to 2016 there was definitively an increase in the recovery rate, but as a precaution it was decided to keep the same that was indicated in the article.
  For Europe, based on the Eurostat statistics, the percentage of paper and cardboard recovery is equal to 79,20%, while in Italy, according to Comieco report, it is equal to 89%.
- For plastic, according to an article in the World Watch Institute, it is estimated that between 22% and 43% of the plastic used in the world ends up in landfills. Therefore, it was considered worldwide an average figure for the disposal of 32,5%. At European level, however, according to Eurostat statistics, the recovery rate is 69,2%, while for Italy, according to Corepla, 86,2% is recovered.
The LCA study is a “cradle-to-grave” type of study, and thus it involves all the different life-cycle phases, from the extraction of raw materials used in the production process, to the end-of-life product disposal. As established by the PCR, on which this study is based, the life cycle, and its boundaries, is divided into three main modules: upstream, core and downstream. The upstream module includes the extraction process and transport of the raw materials used to produce the different trolley components, including ancillary raw materials (e.g. paint), and the energy consumption resulting from third-party component moulding processes.

The core module includes transport of third-party moulded components to TTS facility, its energy and water consumption, the waste produced and the primary and secondary packaging production. The downstream module includes transport of the finished product from the production site to the customer’s facility, the trolley use and its end of life and the end of life of the primary packaging. Packaging of the cleaning trolley includes only the primary packaging as the secondary is not used.

Apart from including the inputs and outputs above, the following provisions apply to the core module: Processing of production equipment, construction works and other equipment are not included. Business trips, staff commuting trips and research/development activities are not included.
As indicated by the PCR, the declared unit is a cleaning trolley for professional use. Concerning the raw materials, the geographic boundaries include mainly Italy and Europe, while the finished products are mainly shipped to Italy, Europe and Azerbaijan.

The production site is the TTS facility located in Santa Giustina in Colle (PD) as far as trolley assembling is concerned, while moulding of the individual components is carried out by suppliers and, in particular: FA.ZI.FA. Srl, COPLAST Srl, IPA SpA, Cebora SpA, GEFA Snc.

All data concerning assembling and moulding are data that have been collected directly from the production sites above. Cleaning trolley by TTS facility requires only a manual assembly of the wheels, that are fixed to the base and the introduction, manual as well, of the different components in the primary packaging.

Concerning data and quality requirements, specific data have been collected for:
- material and weight of each trolley component;
- third parties electric consumption for moulding and transport from third parties to TTS facility;
- general consumption of TTS facility, including waste production;
- transport of finished product to the customer's facility.

The study refers to the entire 2015. Thus the specific and general data refer to that period. The only exception are the specific data relating to the power consumption of the third parties, used for moulding, that are related to 2013.

Selected generic data and proxy data from database are related to the last 5 years. As far as the contribution of the proxy data to the overall impacts is concerned, the following approach was used: it was considered as proxy data those data used for chemical products related to the dyes used to colour the different components of the trolley.

The threshold permitted by PCR to use in the study up to a maximum 10% of proxy data (not selected) is respected for all impact categories. We used the databases in the LCA software SimaPro 8.3.0.0, in particular Ecoinvent in version 3.2 “Allocation recycled content” - which is the version which is most in line with the principles of PCR.

“Magic System 760 Safety - MS760S0C0B00” trolley comprises 21 components, for a total weight of 27.434 kg. The weight does not include the green label (0.019 kg) and the pictograms (0.002 kg), given their incosiderable ratio (0.08% of the total weight of the trolley), in compliance with PCR cut-off standard 2008:07, version 2.2 “Cleaning trolleys for professional use”.

Thus, in this study, the cleaning trolley considered comprises 19 pezzi, for a total weight of 27.413 kg.

The composition of the materials constituting the “Magic System 760 Safety - MS760S0C0B00” trolley is detailed in the following table:

<table>
<thead>
<tr>
<th>Kg/D.U.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polypropylene</td>
<td>18,986</td>
</tr>
<tr>
<td>Polypropylene PSV</td>
<td>5,699</td>
</tr>
<tr>
<td>Thermoplastic rubber</td>
<td>1,064</td>
</tr>
<tr>
<td>Thermoplastic polymer</td>
<td>1,664</td>
</tr>
<tr>
<td>TOTAL</td>
<td>27,413</td>
</tr>
</tbody>
</table>

Table 1: Trolley composition

As declared by our suppliers, in our products there is currently no substance mentioned in Annex XIV of the Rules or in the Candidate List of SVHC, updated to the date of this declaration.
Here are environmental results, according to declared unit (1 trolley).

### RESOURCES CONSUMPTION

#### 1 Cleaning trolley for professional use “MAGIC SYSTEM MS760S0C0B00”

<table>
<thead>
<tr>
<th>ENVIRONMENTAL INDICATOR</th>
<th>Unit</th>
<th>TOTAL</th>
<th>Upstream</th>
<th>Core</th>
<th>Downstream</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NON-RENEWABLE RESOURCES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATERIAL of which:</td>
<td>kg</td>
<td>35,56</td>
<td>24,92</td>
<td>0,98</td>
<td>9,67</td>
</tr>
<tr>
<td>Oil (feedstock)</td>
<td>kg</td>
<td>21,11</td>
<td>21,11</td>
<td>0,00</td>
<td>0,00</td>
</tr>
<tr>
<td>Gravel</td>
<td>kg</td>
<td>12,37</td>
<td>2,83</td>
<td>0,82</td>
<td>8,72</td>
</tr>
<tr>
<td>Calcite</td>
<td>kg</td>
<td>0,70</td>
<td>0,41</td>
<td>0,05</td>
<td>0,24</td>
</tr>
<tr>
<td>Other</td>
<td>kg</td>
<td>1,38</td>
<td>0,57</td>
<td>0,12</td>
<td>0,70</td>
</tr>
<tr>
<td><strong>ENERGY of which:</strong></td>
<td>kg</td>
<td>25,87</td>
<td>18,27</td>
<td>1,68</td>
<td>5,92</td>
</tr>
<tr>
<td>Oil</td>
<td>kg</td>
<td>7,16</td>
<td>2,31</td>
<td>0,45</td>
<td>4,40</td>
</tr>
<tr>
<td>Natural gas</td>
<td>kg</td>
<td>11,30</td>
<td>10,43</td>
<td>0,56</td>
<td>0,30</td>
</tr>
<tr>
<td>Coal</td>
<td>kg</td>
<td>7,36</td>
<td>5,49</td>
<td>0,65</td>
<td>1,22</td>
</tr>
<tr>
<td>Peat</td>
<td>kg</td>
<td>0,06</td>
<td>0,03</td>
<td>0,02</td>
<td>0,01</td>
</tr>
<tr>
<td>Uranium</td>
<td>kg</td>
<td>2,40 E-04</td>
<td>2,21 E-04</td>
<td>8,97E-06</td>
<td>1,07 E-05</td>
</tr>
<tr>
<td><strong>RENEWABLE RESOURCES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATERIAL of which:</td>
<td>kg</td>
<td>1,65</td>
<td>0,48</td>
<td>1,04</td>
<td>0,13</td>
</tr>
<tr>
<td>Wood</td>
<td>kg</td>
<td>1,65</td>
<td>0,48</td>
<td>1,04</td>
<td>0,13</td>
</tr>
<tr>
<td><strong>ENERGY of which:</strong></td>
<td>MJ</td>
<td>62,93</td>
<td>38,56</td>
<td>20,34</td>
<td>4,02</td>
</tr>
<tr>
<td>Water</td>
<td>MJ</td>
<td>28,70</td>
<td>24,35</td>
<td>2,27</td>
<td>2,08</td>
</tr>
<tr>
<td>Biomass</td>
<td>MJ</td>
<td>25,06</td>
<td>9,54</td>
<td>13,94</td>
<td>1,57</td>
</tr>
<tr>
<td>Eolic</td>
<td>MJ</td>
<td>5,50</td>
<td>4,67</td>
<td>0,49</td>
<td>0,34</td>
</tr>
<tr>
<td>Solar</td>
<td>MJ</td>
<td>3,67</td>
<td>0,001</td>
<td>3,64</td>
<td>0,03</td>
</tr>
<tr>
<td><strong>WATER CONSUMPTION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of which direct in the CORE:</td>
<td>L</td>
<td>2.842,58</td>
<td>2,365,66</td>
<td>211,86</td>
<td>0,010</td>
</tr>
<tr>
<td><strong>SECONDARY RESOURCES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATERIAL of which:</td>
<td>kg</td>
<td>5,70</td>
<td>5,70</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Recycled Polypropylene</td>
<td>kg</td>
<td>5,70</td>
<td>5,70</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Energy resources</td>
<td>kg</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Recovered energy flows</td>
<td>kg</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 2: Material and Energy resources consumption
POTENTIAL ENVIRONMENTAL IMPACTS

1 Cleaning trolley for professional use “MAGIC SYSTEM MS760S0C0B00”

<table>
<thead>
<tr>
<th>IMPACT CATEGORIES</th>
<th>TOTAL</th>
<th>Upstream</th>
<th>Core</th>
<th>Downstream</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLOBAL WARMING-GWP 100 (kg CO₂ eq.)</td>
<td>81,032</td>
<td>59,43</td>
<td>6,07</td>
<td>15,53</td>
</tr>
<tr>
<td>ACIDIFICATION (kg SO₂ eq.)</td>
<td>0,280</td>
<td>0,206</td>
<td>0,021</td>
<td>0,053</td>
</tr>
<tr>
<td>EUTROPHICATION (kg PO₄ eq.)</td>
<td>0,055</td>
<td>0,034</td>
<td>0,009</td>
<td>0,013</td>
</tr>
<tr>
<td>PHOTOCHEMICAL SMOG (kg C₂H₄ eq.)</td>
<td>0,018</td>
<td>0,013</td>
<td>0,001</td>
<td>0,004</td>
</tr>
</tbody>
</table>

Table 3: Potential environmental impact

1 Cleaning trolley for professional use “MAGIC SYSTEM MS760S0C0B00”

<table>
<thead>
<tr>
<th>ENVIRONMENTAL INDICATOR</th>
<th>Unit</th>
<th>TOTAL</th>
<th>Upstream</th>
<th>Core</th>
<th>Downstream</th>
</tr>
</thead>
<tbody>
<tr>
<td>WASTE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazardous waste</td>
<td>kg</td>
<td>0,07</td>
<td>0,07</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Non-hazardous waste</td>
<td>kg</td>
<td>32,24</td>
<td>0,59</td>
<td>0,43</td>
<td>31,23</td>
</tr>
<tr>
<td>Radioactive</td>
<td>kg</td>
<td>0,00</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTHER INDICATORS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio of the recycled material in the product*</td>
<td>20,8%</td>
</tr>
<tr>
<td>Ratio of material in the product that can be recycled in the end of life**</td>
<td>90,0%</td>
</tr>
</tbody>
</table>

Table 4: Other environmental indicators

The waste and recyclable materials indicated in table 4 of the Core Module pertain to TTS Cleaning SRL, where no hazardous waste is produced. All types of waste related to trolleys production (plastic, paper) are submitted to suitable recycling systems.
### Programme-Related Information and Verification

See PCR for detailed requirements

| Programme: | The International EPD® System  
| EPD International AB  
| Box 210 60  
| SE-100 31 Stockholm  
| Sweden  
| www.environdec.com |

| Product category rules: | PCR 2008:07 CPC code 4993 Cleaning trolleys for professional use. Version 2.2  
| Reference year for production data: | 2015 |

### Product category rules (PCR):

PCR review was conducted by:
The Technical Committee of the International EPD® System.  
Il Comitato Tecnico dell'International EPD® System. Contact through info@environdec.com. Chair of the review: Claudia Peña

Independent verification of the declaration and data, according to ISO 14025:2006:

- [ ] EPD Process Certification (internal)  
- [x] EPD Verification (external)

Third party verifier:
RINA Services S.p.A. Via Corsica 12, I-16128 Genova (Italy)  
Tel: +39 010 53851 Fax: +39 010 5351000 www.rina.org

Accredited by:
ACCREDIA (reg. n° 001H)
MANDATORY STATEMENTS

The use stage does not consider cleaning product in accordance to PCR 2008:07 version 2.2 “Cleaning trolleys for professional use”

Information concerning the databases used:
www.ecoinvent.com

“EPDs within the same product category but from different programmes may not be comparable”

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Programme operator:

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info@environdec.com

References:

- LCA report “EPD for the Cleaning trolley for professional use” (version of 29/03/2017) – TTS Cleaning Srl
- General Programme Instructions of the International EPD® System. Version 2.5 of 11/05/2015
- Simapro version 8.3.0.0 and Ecoinvent 3.2.
- ISO 14040:2006
- ISO 14044:2006
- Comieco Report, 2014
- Corepla Report, 2017
Environmental Product Declaration