

Environmental Product Declaration



In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Infection-control furniture

from

Hygenius



Programme:	The International EPD® System, www.environdec.com
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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com



General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
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Accountabilities for PCR, LCA and independent, third-party verification

Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): EPD International Product Category Rules (PCR) for construction products (PCR 2019:14 v1.3.3). The product group classification for the assessed products is UN CPC 36990.
PCR review was conducted by: The Technical Committee of the International EPD System. See https://www.environdec.com/about-us/the-international-epd-system-about-the-system for a list of members. Review chair: Claudia Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat https://www.environdec.com/contact-us .
Life Cycle Assessment (LCA)
LCA accountability: Dr Matthew Fishwick, Fishwick Environmental Ltd
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: <input checked="" type="checkbox"/> EPD verification by individual verifier Third-party verifier: Dr Hüdayi Kara – Managing Director at Metsims Sustainability Consulting Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: Workspace Design Global Limited (trading as Hygenius).

Contact: Gerard Baxter, Director, Bertha Park View, Inveralmond Industrial Estate, Perth, Scotland, PH1 3JE. +44(0) 1738 633184. hello@hygenius.healthcare.

Description of the organisation: Hygenius is a designer and manufacturer of unique cabinetry, worksurfaces and bespoke joinery that is unrivalled for risk reduction, infection control, long life, and installation ease. Hygenius work closely with front-line healthcare professionals who guide our R&D department in delivering new solutions and greater safety in acute, primary, and mental healthcare settings. As a result, Hygenius furniture is safer to use and easier to keep clean than ordinary alternatives, thanks to scores of uniquely thoughtful design details.

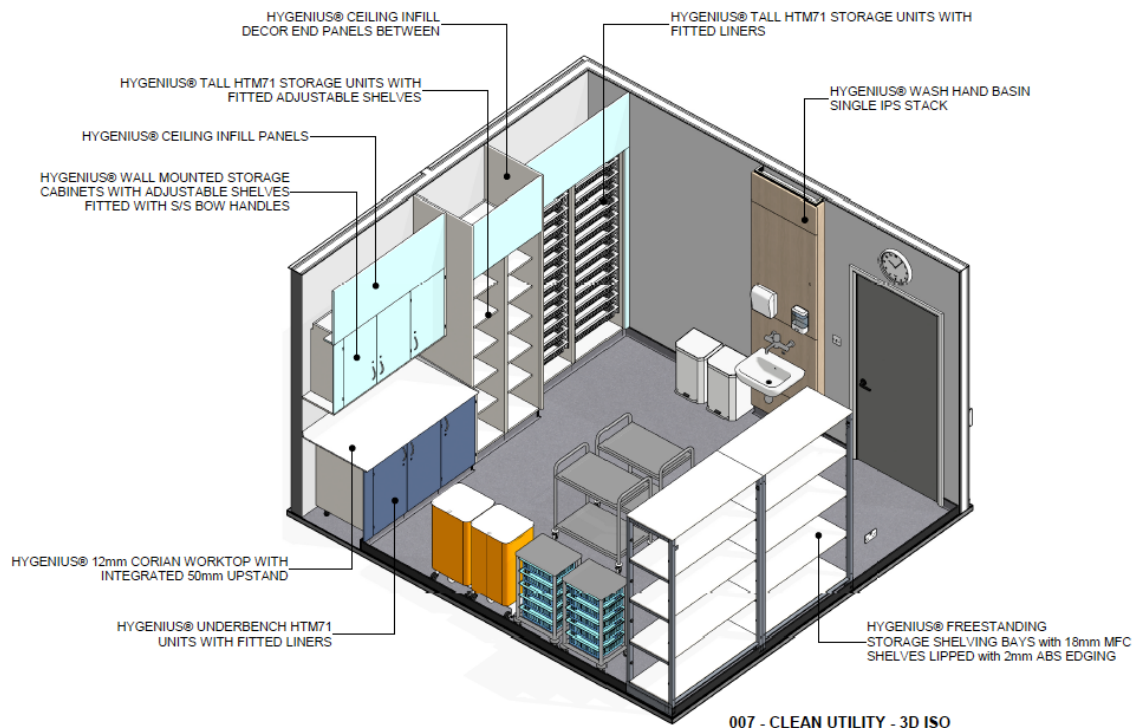
Name and location of production site(s): The product assessed in this study is manufactured at Hygenius, located at Bertha Park View, Inveralmond Industrial Estate, Perth, Scotland, PH1 3JE, and by confidential contract manufacturers.

Management system-related certification: ISO 9001:2015 and ISO 14001:2015.

Product information

Product name: Hygenius infection-control furniture.

Product description: An exemplar installation of infection-control furniture was assessed in this study, using a standard clean utility room design.



This exemplar installation comprised the following furniture items:

- Acrylic Solid Surfacing 12mm Worktop with Integrated 50mm Upstand & Flat Front Edge.

- Single HTM71 Cupboard Unit (LH) With Fitted Liners - 455mm (w) x 650mm (d) 788mm (h)
- Single HTM71 Cupboard Unit (RH) With Fitted Liners - 455mm (w) x 650mm (d) 788mm (h)
- Wall Unit Ceiling Infill Panel Set (To Suit 350mm Deep Wall Unit)
- Tall Unit Ceiling Infill Panel Set (To Suit 450mm Deep Tall Unit)
- Tall Unit Ceiling Infill Panel Set (To Suit 650mm Deep Tall Unit)
- Decor End Panel Working Height - 730mm (w) x 788mm (h) x 18mm (thick)
- Tall Filler Panel 100mm (w) x 2000mm (h) x 18mm (thick)
- Filler Panel Working Height (Base) 200mm (w) x 788mm (h) x 18mm (thick)
- Wall Unit Filler Panel 200mm (w) x 760mm (h) x 18mm (thick)
- IPS WHB Stack - 20mm Laminated 2mm ABS Edged Panels Including Inner Framing
- Freestanding Shelving Rack
- Tall HTM71 Open Unit With 5 Shelves - 455mm (w) x 650mm (d) x 2000mm (h)
- Tall HTM71 Open Unit With Fitted Liners - 655mm (w) x 450mm (d) x 2000mm (h)
- HTM71 Wall Mounted Single Cupboard Unit (LH) With 2 Shelves - 455mm (w) x 350mm (d) 760mm (h)
- HTM71 Wall Mounted Single Cupboard Unit (RH) With 2 Shelves - 455mm (w) x 350mm (d) 760mm (h)

UN CPC code: The product group classification for the assessed product is UN CPC 3812.

Geographic scope of the EPD: UK.

Further product information: <https://www.hygenius.healthcare/>.

Content information

Product components	Weight, kg /declared unit	Post-consumer material, weight-%	Biogenic material, weight- kg C/declared unit
Melamine faced chipboard (MFC)	674	0%	283
Acrylic solid surface	47.8	0%	0
Steel frame	110	19%	0
Stainless steel	7.37	19%	0
Acrylonitrile butadiene styrene (ABS)	0.71	0%	0
Plywood	0.70	0%	0.35
Total	841	2.65%	283

No substances that are listed in the “Candidate List of Substances of very high concern for authorisation” are contained in the declared unit. Hygenius products do not contain any substances hazardous to health or the environment (in particular carcinogenic, mutagenic, toxic to reproduction, allergic, PBT5 or vPvB6 substances). Packaging excluding on basis of being immaterial (calculated to be <1% of A1-A3 carbon footprint, which is a good proxy for many other impact categories).

LCA information

Declared unit	One exemplar room containing infection-control furniture
Scope	Cradle-to-gate with options (modules A4-A5, C1-C4 and D)
Reference service life	n/a
Time representativeness	2023
Geographical scope	UK
Database(s) and LCA software used	All secondary data were from Eugeos' 15804+A2_IA v4.1 extended version of ecoinvent v3.6 (cut-off), the LCA software openLCA (version 1.10.3) and Microsoft Excel were used for modelling.
A3 electricity mix	"market for electricity, medium voltage electricity, medium voltage Cutoff, U – GB" (renewables removed to create residual mix) – ecoinvent v3.6 (cut-off). Residual fuel mix: natural gas 55%, nuclear 31%, coal 13%, and oil 1%. GHG-GWP intensity: 0.43 kg CO ₂ e / kWh.
Methodology used	In addition to EN 15804:2019+A2 and PCR 2019:14 v1.3.3, the study was carried out in accordance with ISO 14040:2006, ISO 14044:2006, and GPI for the International EPD® system

System boundary

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

Module	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply A1	Transport A2	Manufacturing A3	Transport A4	Construction installation A5	Use B1	Maintenance B2	Repair B3	Replacement B4	Refurbishment B5	Operational energy use B6	Operational water use B7	De-construction demolition C1	Transport C2	Waste processing C3	Disposal C4	Reuse-Recovery-Recycling-potential D
Modules declared	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	GLO	GLO	UK	UK	UK	-	-	-	-	-	-	-	UK				UK
Specific data used	19%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%*			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	<10%**			-	-	-	-	-	-	-	-	-	-	-	-	-	-

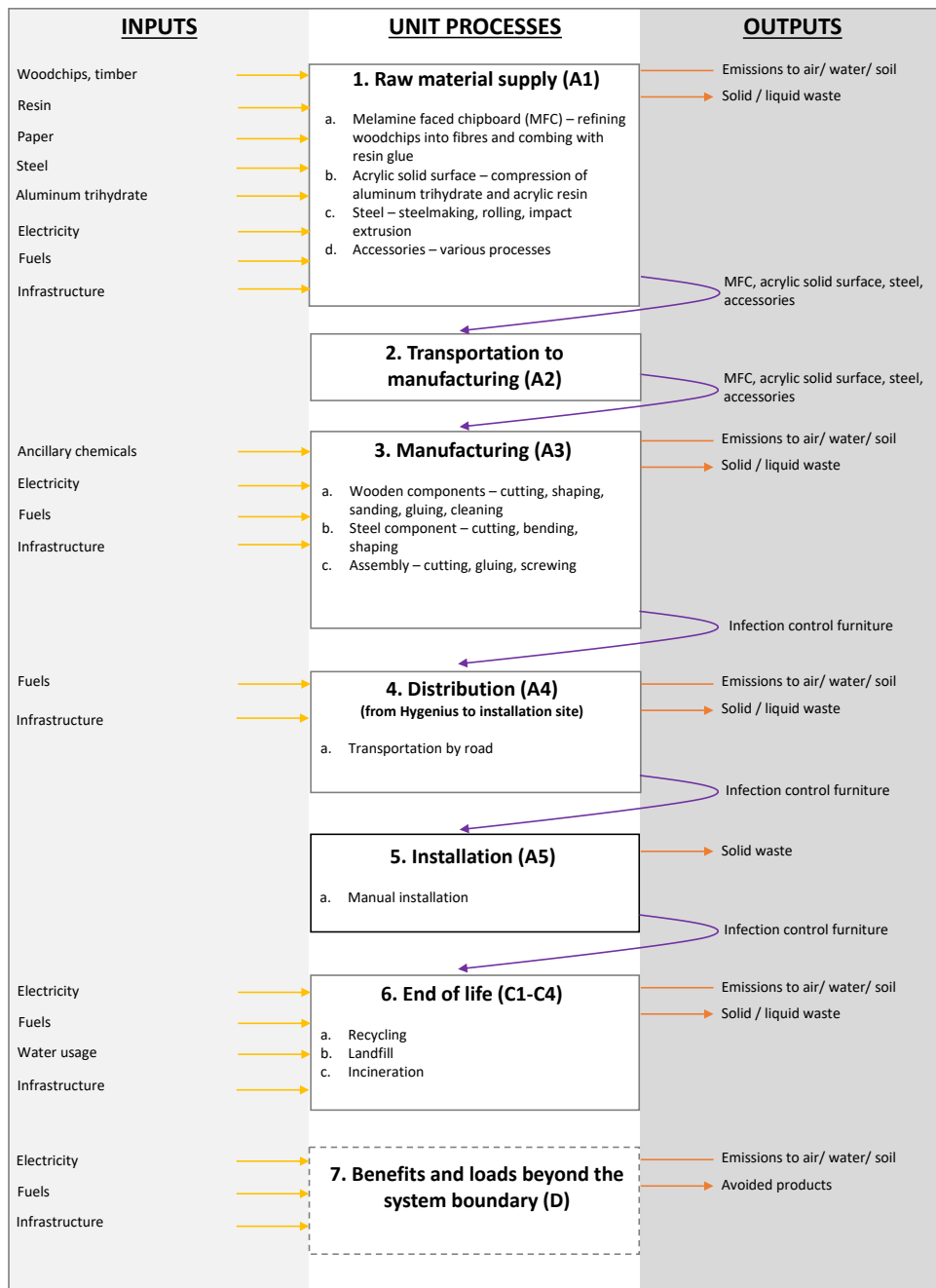
X = included, ND = module not declared. Specific data used and variations are based on the GWP-GHG indicator.

*Note – this EPD provides results for one a specific exemplar room containing infection-control furniture, described above, therefore there is no variation in products represented by this EPD. However, results for other room configurations are available to customers via an in-house Excel calculator upon request.

**Note – this value is estimated, as it is not possible to provide a precise figure on variation between sites as each contract manufacturer is involved in different activities that contribute to the product, rather than each site producing the same product, and there is not a like-for-like comparison.

Description of system boundaries: The system boundary of a product system determines the unit processes to be included in the LCA study and which data as inputs and/or outputs to/from the system can be omitted. In this LCA study and resulting EPD, the system boundary includes extraction/cultivation of raw materials, processing of raw materials, production of the finished product, end-of-life and all transportation and waste stages until the grave stage. This “cradle-to-gate with options” boundary comprises the following modules given in EN 15804:2012+A2:2019: the product, construction, and end-of-life stages and benefits/loads beyond the system boundary (modules A1-A5, C1-C4, D).

Process flow diagram



Yellow line = input of material/energy, orange line = output of waste/direct emission, purple line = output of product/co-product, arrowhead on line = transportation stage considered.

Life cycle stages

Module A1 – raw material supply, comprising:

- Extraction and production of all raw materials for the production of infection-control furniture, including:
 - Melamine faced chipboard (MFC) – refining woodchips into fibres and combing with resin glue.
 - Steel – steelmaking, rolling, impact extrusion.
 - Acrylic solid surface – compression of aluminium trihydrate and acrylic resin.

Module A2 – transport, comprising:

- Transportation of materials from suppliers to contract manufacturing sites and Hygenius's manufacturing site.

Module A3 – manufacturing:

- Manufacturing of Hygenius products and precursor components ready for transportation to customer, including:
 - Wooden components – cutting, shaping, sanding, gluing, cleaning.
 - Steel component – cutting, bending, shaping.
 - Assembly – cutting, gluing, screwing.

Module A4 – transport:

- Transportation of infection-control furniture from manufacturing site to the project site.

Module A5 – construction-installation process (excluded):

- Hygenius products can be stored under ambient conditions, and all Hygenius products and installed manually. Therefore, zero impact is assumed for installation of Hygenius products.

Module C1-C4 – end-of-life:

- Hygenius products are removed using a manual process.
- Transportation of deconstructed Hygenius products from the installation site to the waste processing site.
- Waste processing and disposal via incineration with energy recovery, recycled and landfill.

Module D – reuse, recovery, recycling potential:

- Net benefits and loads arising from the recycling of materials and/or recovery of energy from the product.

Cut-off criteria and exclusions

In the process of building an LCI it is typical to exclude items considered to have a negligible contribution to results. In order to do this in a consistent and robust manner there must be confidence that the exclusion is fair and reasonable. To this end, cut-off criteria were defined in this study, which allow items to be neglected if they meet the criteria. In accordance with EPD International's PCR for construction products (PCR 2019:14), exclusions could be made if they were expected to be within the below criteria:

- A process can be excluded if it contributes to <1% of the total mass or energy input of a unit process;
- A maximum of 5% of the total mass or energy of the lifecycle can be excluded; and

- The excluded process doesn't meet the following exceptions:
 - Significant effects on energy use in extraction, use or disposal;
 - Significant environmental relevance (i.e. likely to contribute to an increase/decrease in impacts of more than 1%); and
 - Are classed as hazardous waste.

The follow exclusions from the scope of the study were made:

- Human and animal energy inputs to processes;
- Transport of employees to and from their normal place of work and business travel;
- Environmental impacts associated with support functions (e.g. R&D, marketing, finance, management etc.);
- Packaging of incoming raw materials and ancillary materials and furniture (immaterial [calculated to be <1% of lifecycle impact for carbon footprint, which is a good proxy for many other impact categories]);
- Installation and removal of Hygenius products (assumed to be immaterial as these products can be installed and removed with basic hand tools); and
- Pallets excluded as capital goods as they are usually reused.

Allocation procedures

For cases where there is more than one product in the system being studied, EPD International's PCR for construction products (PCR 2019:14) prescribes the following procedure for the allocation of material and energy flows and environmental emissions.

- In the first instance, allocation should be avoided, by process sub-division.
- Where these methods are not applicable, the ISO 14040/44 requires that allocation reflects the physical relationships of the different products or functions. Allocation based on physical relationships such as mass or energy is a practical interpretation of this and is an approach often used in LCA.
- For some processes, allocation based on mass is not considered appropriate and, in these cases, economic allocation is used.

In this study, allocation procedures for multi-product processes followed the approach above. In terms of co-product allocation of generic data, the main database used, ecoinvent v3.6 (cut-off), defaults to an economic allocation for most processes. However, in some cases a mass-based allocation is used, where there is a direct physical relationship. The allocation approach of specific ecoinvent modules is documented on their website and method reports (see www.ecoinvent.org).

In this study a "cut-off" method (aka recycled content or 100:0 approach) was applied to all cases of end-of-life allocation, including in the case of generic data, where the ecoinvent v3.6 with a cut-off by classification end-of-life allocation method was used. In this approach, environmental burdens and benefits of recycled / reused materials and recovered energy are given to the product system consuming them, rather than the system providing them and are quantified based on recycling content of the material under investigation. The cut-off point is where an end-of-waste state is reached, including any sorting, cleaning, and processing of waste prior to recycling, reuse, or energy recovery, following the "polluter pays principle". This is a common approach in LCA for materials where there is a loss in inherent properties during recycling, the supply of recycled material exceeds demand and recycled content of the product is independent of whether it is recycled downstream. It is in conformance with the ISO standards on LCA, EN 15804, EN 15978 and is prescribed in EPD International's PCR for construction products (PCR 2019:14). The exception to the use of this end-of-

life allocation method was for module D, where net loads and benefits beyond the system boundary, are presented separately. The end-of-waste status for infection-control furniture, which is assumed to be 100% incinerated with energy recovery (with thermal efficiency >60%), is prior to incineration.

Data sources

Quantitative and qualitative data were collected for all processes within the system boundary and these data were used to compile the LCI. These comprised specific data (primary data) and generic data (secondary data). To explain the distinction between these categories, specific data directly refer to the product under investigation, for example the amount of electricity consumed at a Hygenius site. Generic data do not directly refer to the product under investigation but refer to a similar process and fulfil the data quality criteria defined for this study.

Primary/specific data were sought as a preference and were collected from Hygenius a representative selection of contract manufacturers and from Hygenius. These specific data were collected using data collection sheets via an iterative process and represent a time period from 2023.01.01 to 2023.12.31. Generic data were collected for all other lifecycle stages from Eugeos' 15804+A2_IA v4.1 extended version of ecoinvent v3.6 (cut-off).

Secondary/generic data were chosen to be as geographically specific as possible, however, this was not always possible. In these cases, a geography was selected to match the technology, feedstock source etc., as closely as possible.

Note that no energy values were calculated from volumes or masses of fuels by the LCA practitioners as they were provided in units of energy, however, volume and mass to energy unit conversions have been carried out in the ecoinvent v3.6 (cut-off) database and for this the lower heating value was used throughout.

Scenario parameters

Transportation to customer (A4) scenario parameters modelled in this EPD comprise:

- Vehicle type used for transport: >32 tonne EURO 4 lorry, 16-32 tonne EURO 4 lorry, and light commercial vehicle.
- Distance: van = 1,053 km, large van = 166,965 km, small rigid = 38,697 km, large rigid = 34,918 km, and articulated = 32,605 km.
- Capacity utilisation, including return trips: 37% (road).
- Bulk density of transported products: 620 kg / m³.
- Volume capacity utilisation factor: 1.

End-of-life (C1-C4) scenario parameters modelled in this EPD comprise:

- Collection process specific by type: 771 kg collected separately and 0 kg collected with mixed construction waste.
- Recovery system specified by type: 0 kg for re-use, and 40 kg for recycling, and 674 kg for energy recovery.
- Disposal specific by type: 57 kg product for final disposal (landfill).
- Transportation assumptions: 50 km by municipal waste 21 metric ton lorry.

Benefits and loads beyond the system boundary (D) scenario parameters modelled in this EPD comprise:

- Waste treatment scenario: 100% energy recovery for MFC, 100% recycling for steel frame.
- For energy recovery, benefits were calculated assuming UK residual mix electricity and the following assumptions:
 - Conventional incineration with steam cycle electricity generation assumed;
 - Grid electricity the only avoided product; and waste heat not used, to adopt a conservative assumption;
 - Only 35% of the product is combustible (i.e. the resin component) and CV based on that of timber of 15 MJ per kg; and
 - Overall electrical efficiency of energy from waste plant = 20% (minimum for electricity only, ERM, 2006).
- For recycling, benefits were calculated based on the net scrap output using basic oxygen furnace steel as the avoided product.

Data quality

To ensure the quality of data were sufficient, data quality checks were completed in relation to time-related coverage, geographical coverage, technology coverage, completeness, and representativeness. Data quality indicators were applied using a data quality matrix whereby key data were assigned scores between 1 (best) and 5 (worst). All data scored between 1-2.

Results of the environmental performance indicators

The environmental performance of one exemplar room containing infection-control furniture is declared and reported using the parameters and units as specified in PCR 2019:14 v1.3.3. These life cycle impact assessment results and other environmental results are presented in the tables below per declared unit, broken down by module.

As specified in EN 15804:2012+A2:2019 and the PCR 2019:14 v1.3.3, the environmental impacts are declared and reported using the baseline characterisation factors from the EC-JRC. Note that the LCIA results are relative expressions and do not predict impacts on category end-points, the exceeding of thresholds, safety margins or risks. It is discouraged to use the results of Modules A1-A3 without considering the results of other modules, particularly, Module C.

Mandatory impact category indicators according to EN 15804

Results per one exemplar room containing infection-control furniture									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	1.23E+03	2.25E+02	0.00E+00	0.00E+00	5.20E+01	2.97E-01	0.00E+00	-2.44E+02
GWP-biogenic	kg CO ₂ eq.	-1.58E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.58E+03	0.00E+00	0.00E+00
GWP-luluc	kg CO ₂ eq.	8.00E-01	1.25E-01	0.00E+00	0.00E+00	4.63E-03	8.62E-05	0.00E+00	-7.92E-02
GWP-total	kg CO ₂ eq.	-3.49E+02	2.25E+02	0.00E+00	0.00E+00	5.20E+01	1.58E+03	0.00E+00	-2.44E+02
ODP	kg CFC 11 eq.	8.71E-05	4.78E-05	0.00E+00	0.00E+00	1.10E-05	3.79E-08	0.00E+00	-1.14E+00
AP	mol H ⁺ eq.	4.77E+00	1.12E+00	0.00E+00	0.00E+00	3.13E-01	1.05E-02	0.00E+00	-8.05E-01
EP-freshwater	kg P eq.	3.27E-01	4.35E-02	0.00E+00	0.00E+00	2.86E-03	2.10E-04	0.00E+00	-2.74E-01
EP-marine	kg N eq.	1.22E+00	3.25E-01	0.00E+00	0.00E+00	1.34E-01	5.06E-03	0.00E+00	-2.38E+00
EP-terrestrial	mol N eq.	1.18E+01	3.56E+00	0.00E+00	0.00E+00	1.47E+00	5.57E-02	0.00E+00	-1.53E+00
POCP	kg NMVOC eq.	3.72E+00	1.13E+00	0.00E+00	0.00E+00	5.11E-01	1.45E-02	0.00E+00	-1.68E-01
ADP-minerals&metals*	kg Sb eq.	9.75E-03	5.12E-03	0.00E+00	0.00E+00	3.11E-04	2.06E-06	0.00E+00	-3.23E+03
ADP-fossil*	MJ	2.07E+04	3.29E+03	0.00E+00	0.00E+00	6.71E+02	3.43E+00	0.00E+00	-6.30E+03
WDP*	m ³	1.47E+04	4.65E+03	0.00E+00	0.00E+00	4.08E+02	1.29E+01	0.00E+00	-1.11E+04

Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption
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Additional mandatory and voluntary impact category indicators

Results per one exemplar room containing infection-control furniture									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	1.23E+03	2.25E+02	0.00E+00	0.00E+00	5.20E+01	2.97E-01	0.00E+00	-2.44E+02
PM	Disease incidence	5.39E-05	2.14E-05	0.00E+00	0.00E+00	7.06E-06	8.46E-08	0.00E+00	-9.03E+00
IRP**	kBq U235 eq.	2.12E+02	2.06E+01	0.00E+00	0.00E+00	3.16E+00	1.35E-02	0.00E+00	-2.72E+02
ETP-fw*	CTUe	1.98E+03	7.40E+01	0.00E+00	0.00E+00	3.50E+00	5.37E-02	0.00E+00	-8.75E+00
HTP-c*	CTUh	2.98E-06	2.91E-07	0.00E+00	0.00E+00	5.31E-09	9.77E-09	0.00E+00	-9.55E-06
HTP-nc*	CTUh	3.08E-05	6.63E-06	0.00E+00	0.00E+00	2.05E-07	1.92E-07	0.00E+00	-1.39E+02
SQP*	dimensionless	4.77E+04	2.02E+03	0.00E+00	0.00E+00	6.64E+00	1.65E-01	0.00E+00	-2.75E+02

* Disclaimer 1: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

**Disclaimer 2: This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Resource use indicators

Results per one exemplar room containing infection-control furniture									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	2.60E+04	7.99E+01	0.00E+00	0.00E+00	3.51E+00	1.36E-01	0.00E+00	-2.31E+02
PERM	MJ	1.71E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.62E+02
PERT	MJ	2.60E+04	7.99E+01	0.00E+00	0.00E+00	3.51E+00	1.36E-01	0.00E+00	-3.60E+03
PENRE	MJ	2.31E+04	3.43E+03	0.00E+00	0.00E+00	6.75E+02	3.58E+00	0.00E+00	-6.92E+03

¹ This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO₂ is set to zero.

PENRM	MJ	2.47E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.36E+03
PENRT	MJ	2.31E+04	3.43E+03	0.00E+00	0.00E+00	6.75E+02	3.58E+00	0.00E+00	-6.95E+03
SM	kg	4.41E+02	2.33E+00	0.00E+00	0.00E+00	8.62E-02	1.18E-02	0.00E+00	-3.21E+00
RSF	MJ	1.08E+03	3.96E+00	0.00E+00	0.00E+00	6.69E-02	3.03E-03	0.00E+00	2.07E+02
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m ³	5.26E+00	3.88E-01	0.00E+00	0.00E+00	7.28E-02	1.62E-02	0.00E+00	-9.55E+01
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water								

Waste indicators

Results per one exemplar room containing infection-control furniture									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.53E+02	5.58E+00	0.00E+00	0.00E+00	2.35E-01	1.68E-01	0.00E+00	-7.09E+02
Non-hazardous waste disposed	kg	1.50E+03	2.88E+02	0.00E+00	0.00E+00	7.34E+00	3.42E+01	0.00E+00	3.98E+02
Radioactive waste disposed	kg	2.12E-01	2.30E-02	0.00E+00	0.00E+00	5.05E-03	9.35E-06	0.00E+00	-5.13E-02

Output flow indicators

Results per one exemplar room containing infection-control furniture									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.31E+00
Material for recycling	kg	2.77E+01	2.00E+00	0.00E+00	0.00E+00	7.57E-02	1.22E-02	0.00E+00	-9.37E-02
Materials for energy recovery	kg	1.01E-01	4.26E-02	0.00E+00	0.00E+00	7.55E-04	3.29E-05	0.00E+00	-2.45E-02

Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Interpretation

The following conclusions can be drawn from this study:

- Raw material supply (A1) is a major hotspot for many impact categories, with the exception of IPR, PM, WDP and ODP, where it is less important;
- It should be noted that as this product contains a large proportion of bio-material, there is a large removal of CO₂ from the atmosphere at the beginning of the lifecycle (A1), which is balanced out by a large emissions of CO₂ at end-of-life (C3);
- MFC dominates across all impact categories;
- Acrylic solid surfaces also a hotspot for ODP, AP, EP, and POCP;
- Transport of the product to customers (A4) is a notable hotspot for most impact categories, aside from ETP-fw and GWP-biogenic;
- Manufacturing (A3) at Hygenius and contract manufacturers sites makes a notable contribution; and
- Modules A2, A5, and C1-C4 have a minor to immaterial contribution for all impact categories, with the exception of the re-release of stored biogenic carbon shown in C3 for GWP-biogenic.

Additional environmental information

This EPD provides results for one exemplar room containing infection-control furniture. Results for other room configurations are available to customers via an in-house Excel calculator upon request.

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