



## Environmental Product Declaration

# 10500 Series™ Private Office Workstation

### Product Description

Not too big and not too small—the 10500 Series is just right with its comprehensive offering that supports all the ways people work, no matter the size of the space. Maximize footprints with a variety of layout options that include single desks, L-shaped and U-shaped configurations, work wall arrangements, and modular storage solutions. It's the total package offering more of what your business needs, for less than expected. 10500 Series Desking is certified SCS Indoor Advantage™, BIFMA LEVEL® 3, and available as FSC® Certified.

### Functional Unit

The primary function of the HON 10500 private office workstation is to provide an office workspace, including worksurface and storage. The functional unit is 1 m<sup>2</sup> of floorspace, serving the function of providing office workstation for a 10-year period. The desk occupies a total floorspace of 4.27 m<sup>2</sup>, with 3.50 m<sup>2</sup> of worksurface, and 0.70 m<sup>3</sup> of storage. The reference flow for the modeling system is one complete workstation and the results are normalized to 1 m<sup>2</sup> of floorspace.

### About HON

**We're inspired by the way you work — and the ways that's changing.**

The technology you use. The chair you sit in. And the spaces you choose to get it all done. Because the way you work inspires our work. We're dedicated to design and devoted to budget. We believe that well designed office furniture not only looks great, but makes you and your workers feel great, too. That's why everything we build is designed with purpose and motivated by change. Our products are simple, affordable and do exactly what they're meant to — day in and day out — to help you work smarter, work better and work your way.

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### EPD Program Operator

SCS Global Services  
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### Product Category Rule

BIFMA PCR for Office Furniture Workspace Products: UNCPC 3814, August 5, 2015.

### EPD Number and Period of Validity

SCS-EPD-06291  
August 6, 2020 - August 5, 2025

# HON®

<b>Declaration Owner:</b>	The HON Company
<b>Address:</b>	200 Oak Street, Muscatine, IA 52761
<b>Declaration Number:</b>	SCS-EPD-06291
<b>Declaration Validity Period:</b>	August 6, 2020 - August 5, 2025
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<b>LCA Practitioner:</b>	Lila Taheraly and Aditi Suresh
<b>LCA Software:</b>	openLCA v1.9 and ecoinvent v3.5 database
<b>Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071</b>	<input type="checkbox"/> Internal <input checked="" type="checkbox"/> External
<b>LCA Reviewer:</b>	 <hr/> Tom Gloria, PhD, Industrial Ecology Consultants
<b>Product Category Rule:</b>	BIFMA PCR for Office Furniture Workspace Products: UNCPC 3814
<b>PCR Review conducted by:</b>	Thomas P. Gloria, Ph.D. (Chair), Industrial Ecology Consultants
<b>Independent verification of the declaration and data, according to ISO 14025 and the PCR</b>	<input type="checkbox"/> Internal <input checked="" type="checkbox"/> External
<b>EPD Verifier:</b>	 <hr/> Tom Gloria, PhD, Industrial Ecology Consultants
<b>Declaration Contents:</b>	Product and Company Information.....1 Product Specifications.....3 Material Composition.....3 Life Cycle Assessment Stages.....4 Life Cycle Inventory.....4 Life Cycle Impact Assessment.....5 Additional Environmental Information.....6 References.....7
<p><i>Disclaimers: This EPD conforms to ISO 14025, 14040, and 14044.</i></p> <p><i>Scope of Results Reported: The PCR requirements limit the scope of the LCA metrics such that the results exclude environmental and social performance benchmarks and thresholds, and exclude impacts from the depletion of natural resources, land use ecological impacts, ocean impacts related to greenhouse gas emissions, risks from hazardous wastes and impacts linked to hazardous chemical emissions.</i></p> <p><i>Accuracy of Results: Due to PCR constraints, this EPD provides estimations of potential impacts that are inherently limited in terms of accuracy.</i></p> <p><i>Comparability: The PCR this EPD was based on was not written to support comparative assertions. EPDs based on different PCRs, or different calculation models, may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results, due to and not limited to, the practitioner's assumptions, the source of the data used in the study, and the specifics of the product modeled.</i></p>	

## Product Specifications

One of the bestselling HON collections, 10500 Series features a variety of sizes, shapes, and storage solutions for any work style or office arrangement. The best-in-class construction and wear-resistant laminate stand up for a lifetime. Details include locking drawers, grommets to route and hide cords, and matching conference and occasional tables. Offering seated and standing height workstations as well as height-adjustable desks that can be raised and lowered with a simple touch, the 10500 Series supports multiple postures and encourages healthy movement.

HON 10500 private office workstations are available in a number of configurations with various optional features and are customizable for functionality, ergonomics and aesthetics. The workstations are primarily constructed using particleboard, steel, adhesive, plastics, zinc, and fiberboard. The HON 10500 private office workstation passes the ANSI/BIFMA X5.5 tests, demonstrating a minimum expected lifetime of 10 years under specified conditions.

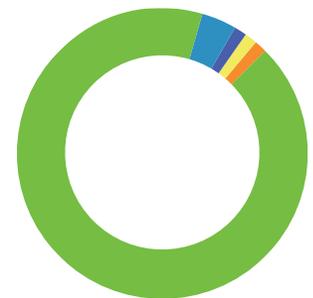
Tables 1 and 2. The 10500 Series Private Office workstation product configuration and recycled content.

HON 10500 Series Private Office Physical Footprints		HON 10500 Series Private Office Recycled Content	
Physical Floor Space Area	4.27 m <sup>2</sup>	Post-Consumer	1%
Physical Worksurface Area	3.50 m <sup>2</sup>	Pre-Consumer	81%
Storage Volume	0.70 m <sup>3</sup>		

## Materials Composition

Table 3. Material composition of 10500 Series Private Office workstation. Results are shown on a mass basis, and as a percent of total.

Material Type	Amount (kg / unit)	Amount (kg / Functional Unit <sup>1</sup> )	Amount (%)
Particleboard	332	78	92%
Steel	13	3.0	4%
Adhesive	4.6	1.1	1.3%
Plastics	4.4	1.0	1.2%
Zamak	2.4	0.6	0.7%
High Density Fiberboard (HDF)	2.3	0.5	0.6%
Medium Density Fiberboard (MDF)	0.7	0.2	0.2%
Wood	0.6	0.1	0.2%
Thermally Fused Laminate (TFL)	0.02	0.004	0.005%
Aluminum	0.002	4.0 x 10 <sup>-4</sup>	0.0004%
<b>Total</b>	<b>360</b>	<b>84</b>	<b>100%</b>



**Total Material Components**

- Particleboard 92%
- Steel 4%
- Adhesives 1.3%
- Plastics 1.2%
- Other 1.5%

<sup>1</sup>The Functional Unit is defined as 1 m<sup>2</sup> of floorspace over a ten-year period.

Table 4. Packaging material composition of 10500 Series Private Office workstation. Results are shown on a mass basis, and as a percent of total.

Packaging Material	Amount (kg / unit)	Amount (kg / Functional Unit <sup>1</sup> )	Amount (%)
Paper/Corrugated Paperboard	33	7.7	92%
Polyethylene film	2.6	0.6	7.3%
Adhesive	0.2	0.04	0.5%
<b>Total Packaging</b>	<b>35</b>	<b>8.3</b>	<b>100%</b>

<sup>1</sup>The Functional Unit is defined as 1 m<sup>2</sup> of floorspace over a ten-year period.

## Life Cycle Assessment Stages

Figure 1 below is a representation of the life cycle of 10500 Series Private Office Workstation. The system boundary is cradle-to-grave and includes resource extraction and processing, product manufacture and assembly, distribution/transport, use and maintenance, and end-of-life.

Figure 1. Life cycle diagram for 10500 Series Private Office workstation.



## Life Cycle Inventory

The life cycle inventory (LCI) flows for the 10500 Series Private Office workstation are shown in Table 5. Table 6 includes equivalency factors that were determined for the purpose of communicating critical environmental impacts in simplified terms for better understanding.

Table 5. Aggregated inventory flows and impacts for 10500 Series Private Office workstation. Results are shown per 1m<sup>2</sup> of floorspace as well as per one private office.

Parameters Prescribed by BIFMA PCR	Units	Total (per 1 m <sup>2</sup> floorspace)	Total (per 1 unit of private office)
Water Use	m <sup>3</sup>	3.7	16
Total Primary Energy Demand	MJ	3,000	12,700
Primary Energy Demand, Non-renewable	MJ	2,000	8,400
Primary Energy Demand, Renewable	MJ	1,000	4,300

Table 6. Translation of LCA results to familiar activities for select aggregated inventory results for 10500 Series Private Office workstation.

Category Indicator	Life Cycle Inventory results for 1 m <sup>2</sup> of floorspace, maintained for 10-years	Life Cycle Inventory results for one workstation, maintained for 10-years	Basis of Equivalency Factor	1 m <sup>2</sup> of floorspace, maintained for 10-years	One workstation, maintained for 10-years
Net Water Use	3.7 m <sup>3</sup>	16 m <sup>3</sup>	Number of cycles run in a dishwasher [1]	82	350
Primary Energy Demand	3,000 MJ	12,700 MJ	Number of days operating a refrigerator [2]	160	670
Energy Resource Depletion (SCS-002)	910 MJ eq	3,900 MJ eq	Number of days of operating a refrigerator [2]	48	200

[1] The net water use estimate is based on Energy Star-rated dishwashers and also considers the upstream water required to generate electricity to run the dishwasher. [https://www.energystar.gov/index.cfm?c=dishwash.pr\\_crit\\_dishwashers](https://www.energystar.gov/index.cfm?c=dishwash.pr_crit_dishwashers)

[2] The primary energy demand estimate is based on the energy consumption for Energy Star refrigerators, using a US average electricity supply mix, and also considers the upstream energy demand for electricity generation in US. <https://www.energystar.gov/index.cfm?fuseaction=refrig.calculator>

# Life Cycle Impact Assessment

Impact category indicators are calculated using the TRACI 2.1 characterization methods, including acidification potential, eutrophication potential, smog potential, ozone depletion potential, and global warming potential based on IPCC 2013, in accordance with the BIFMA PCR.

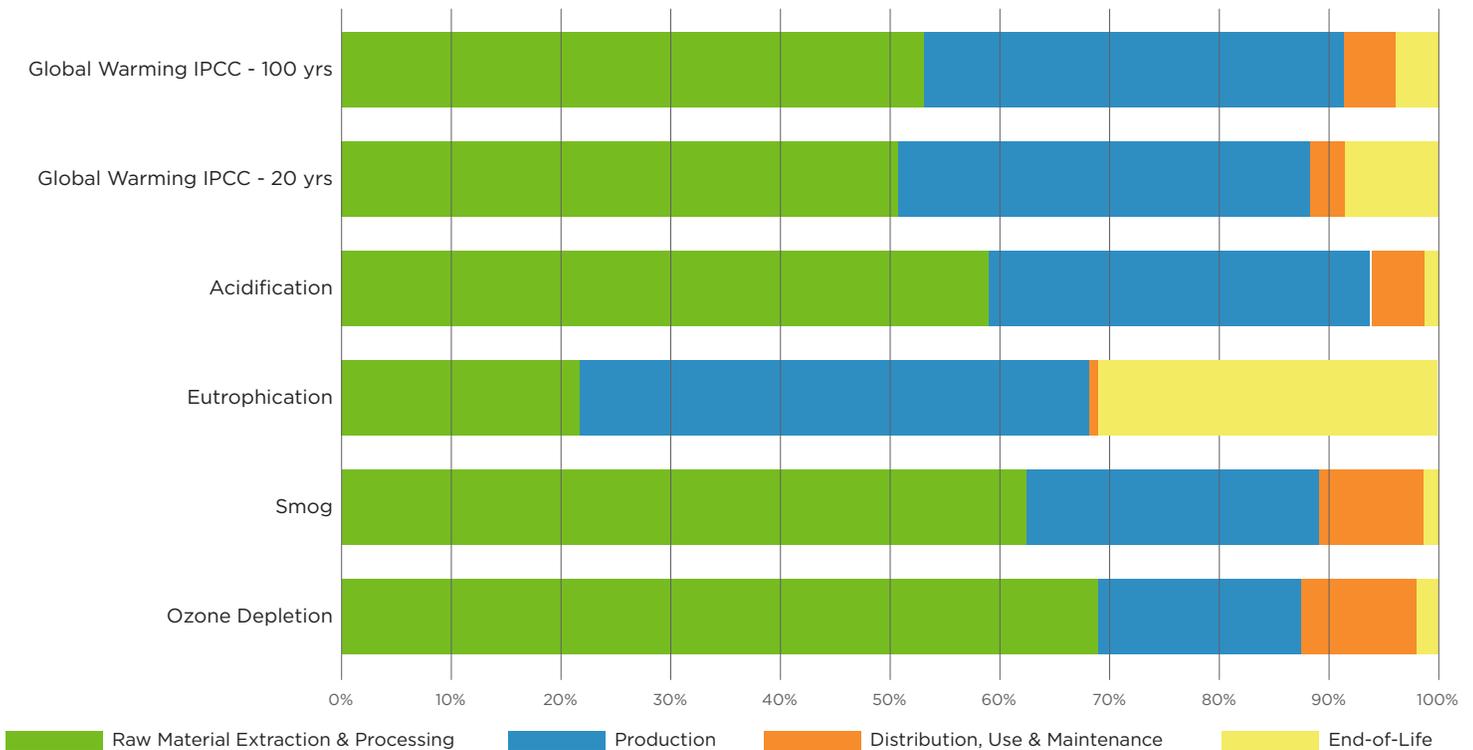
Table 7. Life cycle impact assessment results for the 10500 Series Private Office workstation. Results are shown per 1 m<sup>2</sup> of floorspace for a ten-year period. Results for one private office are presented in parenthesis.

Impact Category	Unit	Total	Raw Material Extraction & Processing	Production (Manufacturing & Assembly)	Distribution, Use & Maintenance	End-of-Life
 IPCC Global Warming Potential - 100 year	kg CO <sub>2</sub> eq	<b>150 (650)</b>	80 (340)	58 (250)	6.7 (28)	6.3 (27)
 IPCC Global Warming Potential - 20 year	kg CO <sub>2</sub> eq	<b>180 (780)</b>	94 (400)	67 (280)	6.9 (30)	15 (65)
 Acidification Potential	kg SO <sub>2</sub> eq	<b>0.61 (2.6)</b>	0.36 (1.5)	0.21 (0.91)	3.0 x 10 <sup>-2</sup> (0.13)	9.3 x 10 <sup>-3</sup> (4.0 x 10 <sup>-2</sup> )
 Eutrophication Potential	kg N eq	<b>1.3 (5.5)</b>	0.28 (1.2)	0.60 (2.6)	7.5 x 10 <sup>-3</sup> (3.2 x 10 <sup>-2</sup> )	0.40 (1.7)
 Smog Potential	kg O <sub>3</sub> eq	<b>8.3 (35)</b>	5.2 (22)	2.2 (9.3)	0.72 (3.1)	0.20 (0.87)
 Ozone Depletion Potential	kg CFC-11 eq	<b>1.6 x 10<sup>-5</sup> (6.9 x 10<sup>-5</sup>)</b>	1.1 x 10 <sup>-5</sup> (4.8 x 10 <sup>-5</sup> )	3.0 x 10 <sup>-6</sup> (1.3 x 10 <sup>-5</sup> )	1.7 x 10 <sup>-6</sup> (7.3 x 10 <sup>-6</sup> )	3.0 x 10 <sup>-7</sup> (1.3 x 10 <sup>-6</sup> )

On assessing the percentage contribution by life cycle phase, it is evident that the raw material extraction and processing phase is the most dominant phase with significant environmental impacts across all the category indicators. The manufacturing phase also contributes measurably to all category indicators, especially to the global warming, acidification and eutrophication potential indicators. The end-of-life phase contributes significantly to the eutrophication potential indicator as well.

Figure 2. Contribution analysis graph representing % contribution to each impact category indicator by life cycle phase.

## Life Cycle Impacts of 10500 Series Private Office Workstation



## Life Cycle Impact Assessment (continued)

Additional life cycle impact results are reported in Table 8 below as optional parameters of concern. These impacts are calculated using the SCS-002 framework, which augments the specified impact categories and method TRACI 2.1, identified by the BIFMA PCR.

Table 8. Life cycle impact assessment results for 10500 Series Private Office workstation according to SCS-002 draft standard.

Impact Category (SCS-002 Parameters)	Unit	Life Cycle Impact results for 1m <sup>2</sup> of floorspace	Life Cycle Impact results for one workstation
Global Climate Change	(kg CO <sub>2</sub> eq)	210	910
Ocean Acidification	(kg H <sub>2</sub> CO <sub>3</sub> eq)	63	270
Energy Resource Depletion	(MJ eq)	910	3,900

Results for select impact category indicators are translated to the number of miles driven in a typical passenger vehicle, and are provided to help customers interpret the scale of potential environmental impact attributed to the product.

Table 9. Equivalency factors for select life cycle impact assessment results for 10500 Series Private Office workstation.

Category Indicator	Life Cycle Impact Assessment results for 1 m <sup>2</sup> of floorspace maintained for 10-years	Life Cycle Impact Assessment results for one workstation, maintained for 10-years	Basis of Equivalency Factor	1 m <sup>2</sup> of floorspace, maintained for 10-years	One workstation, maintained for 10-years
Global Warming Potential (IPCC, 100 year time horizon)	150 kg CO <sub>2</sub> eq	650 kg CO <sub>2</sub> eq	Number of miles driven in a typical passenger vehicle [3]	360	1,550
Global Warming Potential (IPCC, 20 year time horizon)	180 kg CO <sub>2</sub> eq	780 kg CO <sub>2</sub> eq	Number of miles driven in a typical passenger vehicle [3]	440	1,870
Global Climate Change (SCS-002)	210 kg CO <sub>2</sub> eq	910 kg CO <sub>2</sub> eq	Number of miles driven in a typical passenger vehicle [3]	480	2,040

## Additional Environmental Information

HON makes it a priority to design product and implement processes that reduce our collective impact on the environment. HON is proud to support sustainable initiatives in the building industry as a member of the U.S. Green Building Council (USGBC).

10500 Series is LEVEL<sup>®</sup> 3 certified to the ANSI/BIFMA e3 Furniture Sustainability Standard and SCS Indoor Advantage<sup>™</sup> Gold certified for indoor air quality. 10500 Series has the ability to contribute to several credits in the LEED<sup>®</sup> green building program and the WELL Building Standard<sup>®</sup>.

[3] Average vehicle miles traveled are estimated using average US fuel economies for passenger vehicles and light trucks and the amount of carbon dioxide emitted per gallon of motor gasoline burned. <https://www.epa.gov/energy/ghg-equiv-alenciescalculator-calculations-and-references>

## References

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1. SCS Global Services. Life Cycle Assessment of Four HNI® Private Office Workstations. April 2020. Final Draft Report. Prepared for HON® an HNI Corporation company.
2. ISO 14025: 2006 Environmental labels and declarations – Type III environmental declarations – Principles and Procedures
3. ISO 14040: 2006 Environmental Management – Life cycle assessment – Principles and framework
4. ISO 14044: 2006 Environmental Management – Life cycle assessment – Requirements and Guidelines
5. Product Category Rule (PCR) Environmental Product Declarations (EPD), BIFMA PCR for Office Furniture Workspace Products: UNCPC 3814.
6. SCS Type III Environmental Declaration Program: Program Operator Manual v10. April 2019. SCS Global Services
7. Standard for Type III Life-Cycle Impact Profile Declarations for Products, Services and Systems (SCS-002). <http://www.leonardoacademy.org/programs/standards/life-cycle.html>
8. BIFMA x5.5. American National Standard for Office Furnishings – Desk Products – Tests.
9. Intergovernmental Panel on Climate Change (IPCC). IPCC Fourth Assessment Report. [http://www.ipcc.ch/publications\\_and\\_data/ar4/wg1/en/ch2s2-10-2.html](http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html)
10. Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI). Version 2.1. US Environmental Protection Agency.
11. Ecoinvent Centre (2018) ecoinvent data from v3.5 Swiss Center for Life Cycle Inventories, Dubendorf, 2018, <http://www.ecoinvent.org>
12. US Life-Cycle Inventory Database. National Renewable Energy Laboratory. <https://www.nrel.gov/lci/>
13. Environmental Protection Agency. The Emissions & Generation Resource Integrated Database (eGRID). [www.epa.gov/energy/emissions-generation-resource-integrated-database-egrid](http://www.epa.gov/energy/emissions-generation-resource-integrated-database-egrid)
14. US Environmental Protection Agency. Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Tables and Figures for 2017, published on November 2019. [www.epa.gov/sites/production/files/2019-11/documents/2016\\_and\\_2017\\_facts\\_and\\_figures\\_data\\_tables\\_0.pdf](http://www.epa.gov/sites/production/files/2019-11/documents/2016_and_2017_facts_and_figures_data_tables_0.pdf)
15. US Environmental Protection Agency. Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI).
16. EPA Greenhouse gas equivalencies calculator (2020); [www.epa.gov/energy/greenhouse-gas-equivalencies-calculator](http://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator)
17. Energy use of refrigerators: <https://www.energystar.gov/index.cfm?fuseaction=refrig.calculator>
18. Water use in dishwashers: [https://www.energystar.gov/index.cfm?c=dishwash.pr\\_crit\\_dishwashers](https://www.energystar.gov/index.cfm?c=dishwash.pr_crit_dishwashers)

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