

# Environmental Product Declaration



In accordance with ISO 14025 and Product Category Rules 2012:19 version 2.01 for Furniture, except seats and mattresses

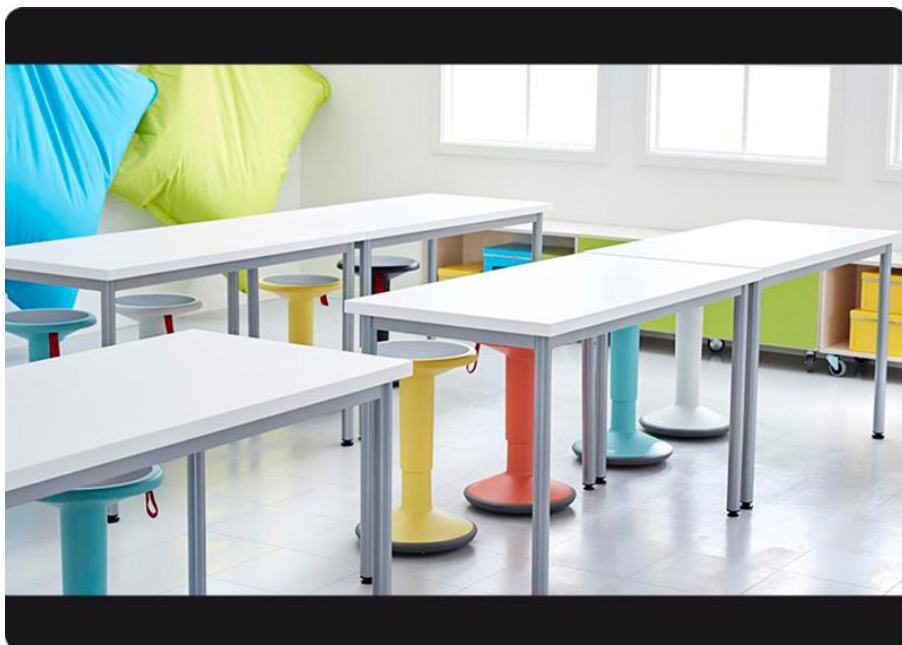
## Table 12:38 series

from




**Lekolar AB**

**Lekolar®**

Programme:	The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a>
Programme operator:	EPD International AB
EPD registration number:	S-P-08173
Publication date:	2023-02-06
Valid until:	2028-02-05



## EPD Profile

	<p><b>EPD Owner</b></p> <p><b>Lekolar AB</b>  Hanna Bremander,  Hallarydsvägen 8  SE – 283 36 Osby  +46 (0) 701 661936  <a href="mailto:hanna.bremander@lekolar.com">hanna.bremander@lekolar.com</a></p>
	<p><b>EPD Programme</b></p> <p>The International EPD® System</p> <p>EPD International AB  Box 210 60  SE-100 31 Stockholm  Sweden</p> <p><a href="http://www.environdec.com">www.environdec.com</a>  <a href="mailto:info@environdec.com">info@environdec.com</a></p>
	<p><b>EPD Developer</b></p> <p>DGE Mark och Miljö  Box 258  391 23 Kalmar</p>
	<p><b>Third party Verifier</b></p> <p>Vladimír Kočí, LCA studio  Approved by: The International EPD® System</p>

**Product category rules (PCR):** The International EPD System PCR for Furniture, except seats and mattresses, 2009:02 version 3.0 UN CPC 3812/3813/14

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

EPD process certification  EPD verification

Third party verifier: Vladimír Kočí, LCA studio

Approved by: The International EPD® System Technical Committee, supported by the Secretariat

Procedure for follow-up of data during EPD validity involves third party verifier:

Yes  No

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable.

## Company information

### Description of the organization

Lekolar is one of the largest suppliers of school furniture and toys to the Nordic market. Our headquarters are located at Osby, with the production site and warehouse in Osby in Skåne county. Lekolar is ISO certified according to ISO 9001/14001 and 45001, focusing on providing a circular and environmentally sustainable range.

For more information regarding the products or the organization, see EPD owner's website: [www.lekolar.se](http://www.lekolar.se)

### Name and location of production sites

Table 12:38 series is produced and assembled in Osby, Sweden. The wooden parts are made from FSC certified wood. The 12:38 table series is Möbelfakta certified.

## EPD Product information

**Product name:** Table 12:38 series.

### Product identification:

This EPD covers all tables within the 12:38 series with the results presented for smallest and the largest tables. To calculate the impacts from all the other tables in the Table 12:38 series results for 1 kg average of Table 12:38 are presented.

### Product description:

Lekolar's products are developed to facilitate a positive and educational environment for school children. The Table 12:38 series includes a number of tables consisting of two components; a powder painted steel base with four legs and a linoleum or laminate covered table top made of particleboard. Figure 1 shows a picture of one of the tables in the Table 12:38 series. The two components are produced and packaged at the suppliers and then transported to Lekolar for assembly and repackaging. The finished Table 12:38 is distributed by truck to end-customers on the Nordic market. During the use phase, cleaning consumables are used. After its lifetime, the vast majority of steel is assumed to be recycled, while the powder paint and table top are assumed to be incinerated.



Figure 1 A picture of one of the products in the Table 12:38 series.

This EPD is valid for all products in the Table 12:38 series. Specifications for each product can be found at [www.lekolar.se](http://www.lekolar.se)

## LCA Information

**UN CFC code:** 3812/3813/14

**Functional unit:** 1 unit of Table 12:38, small and large.

**Reference service life:** A default reference service life of 15 years has been assumed, in line with the PCR for furniture except seats and mattresses. Lekolar product warrants, the products manufactured by it to be free from defects in material and workmanship for a period of 10 years. Service life is expected to be considerably longer than this.

**Time representativeness:** The data and information collected and modelled refers to the production year of 2020. The general datasets from databases are all representative and valid for the year 2020.

**Geographical scope:** Sweden

The geographical coverage of this LCA is scenario adapted, i.e. set to Sweden for the manufacturing and to region specifics, when possible, for the raw material extraction and production. This means that the data used for raw material extraction and production is adapted to the geographical region it is extracted from and produced in. The geographical coverage for transports is set to Europe.

**Database(s) and LCA software used:**

The LCA software SimaPro 9.3.0.3 was used in the assessment, with data from specific raw material EPDs and the databases Ecoinvent 3.8, Environmental footprint (EF) database 2.0, Industry data 2.0 and Agri-footprint 5.

**Description of system boundaries:**

Cradle-to-grave, i.e. life cycle stages upstream processes, core processes, and downstream processes.

**Excluded lifecycle stages:**

In Upstream processes life cycle stage of auxiliary products and in core processes life cycle stage of maintenance are neither considered nor declared.

**Allocation methodology:**

The cut-off method has been applied within the product system. For allocations between product systems, the Polluter-pays allocation method has been used.

**Cut-off:** All raw materials according to the product formula, including their respective energy demands during extraction and production have been considered, as well as the main packaging materials used to prepare the final product for distribution. Some packaging materials & production solvents that constitute less than 1% of the product weight have been excluded. This cut-off rule does not apply for hazardous material and substances.

**More information:**

Since the Table 12:38 series consists of a number of tables in different sizes and models an average was compiled to calculate the impacts from any table in this Table 12:38 series. The average is compiled using data for the smallest and the largest table included in the series. The results are expressed for 1 kg average of Table 12:38 and presented in Tables 10-14.

The EPD obtained for powder coating from the supplier is produced in accordance with PCR 2012. Hence it lacks information regarding the additional impact categories to be considered according to the PCR 2019. To fill this data gap Pulver, Class 1 powder coating EPD was used. EPD obtained for Linoleum coating also lacks information regarding the additional impact categories and this data gap was filled with general data from Ecoinvent 3.8.

For more information about the EPD owner, visit [www.lekolar.se](http://www.lekolar.se)

For more information about the EPD producer,  
visit [www.dge.se](http://www.dge.se).

For more information about the underlying LCA  
study, contact the LCA practitioner Sayali Bhalekar  
([Sayali.Bhalekar@dge.se](mailto:Sayali.Bhalekar@dge.se)).

## System diagram

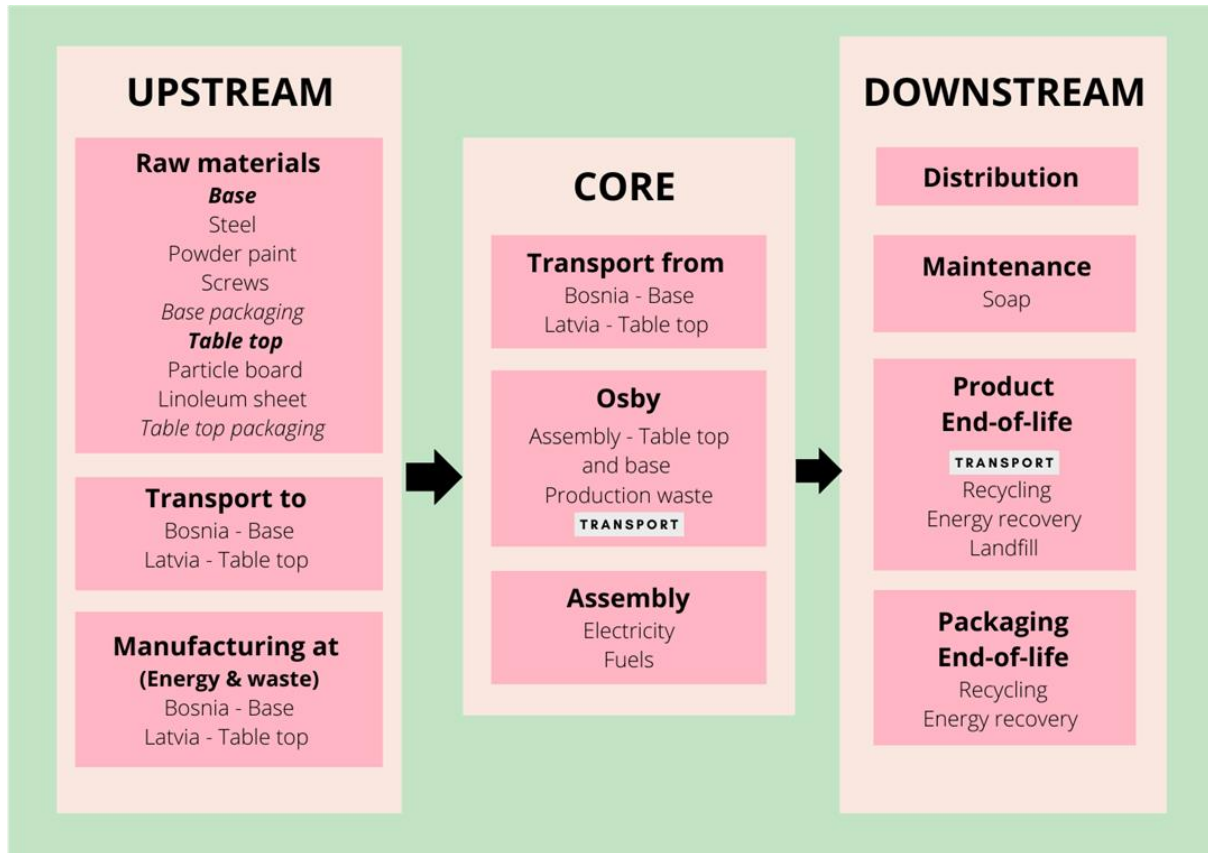


Figure 2. An illustration of the processes within the system boundary.

## Description of life cycle stages upstream processes, core processes and downstream processes

Table 1 The life cycle stages included in this EPD and a description of each stage.

Stage	Description
<b>Upstream processes</b>	Extraction and processing of all raw materials used in production of the two components, powder painted steel in Bosnia and linoleum covered particleboard in Latvia, occurring upstream. Inbound transportation of raw materials to the supplier site where the manufacturing takes place. The manufacturing of the components, the energy use and the waste generated in these processes. This stage also includes the packaging of the two components.
<b>Core processes</b>	This stage includes the inbound transportation of the two finished components of Table 12:38 to the manufacturing site in Osby. The modelling includes transportation on road and/or water, with processes for each component with packaging. In Osby these components are assembled to produce Table 12:38. It includes the electricity used for the assembly and the waste generated from the upstream packaging and assembly process.
<b>Downstream processes</b>	Finished Table 12:38 is packaged and distributed to the end customers on the Nordic market. Maintenance by cleaning is recommended. This stage also includes the end of life of Table 12:38 and its packaging.

Table 2 An overview of the life cycle stages declared for in this LCA.

	Upstream processes						Core processes					Downstream processes				
	Raw materials	Transport	Manufacturing	Energy use	Auxiliary products	Waste treatment	Transport	Assembly / Manufacturing	Maintenance	Waste treatment	Electricity and Fuels	Distribution transport	Maintenance	Use of product	Product end of life	Packaging end of life
<b>Modules declared</b>	X	X	X	X	MND	X	X	X	MND	X	X	X	X	X	X	X
<b>Geography</b>	EU						SE					SE				

\*SE Sweden \*EU European union \*N/R Not Relevant \*N/A Not Applicable MND Module Not Declared

## Content declaration

Table 3 Content declaration for the functional unit. None of the substances are regarded as SVHCs (Substances of Very High Concern) as defined in the REACH legislation.

Raw materials	Weight, kg/unit small Table 12:38	Weight, kg/unit large Table 12:38	Post-consumer material, weight-%
Steel	7,05	10,4	-
Particle board	5,32	18,22	-
Linoleum sheet	1,47	5,04	-
Steel (Screws)	0,50	0,55	-
Powder paint	0,17	0,27	-

Table 4 Declaration of distribution packaging materials

Distribution Packaging materials	Weight, g	Weight-% (versus the product)	Weight, g	Weight-% (versus the product)	Post- consumer material, weight-%
	Small		Large		
Plastic	200	1,37%	300	2,06%	-
Cardboard	100	0,28%	150	0,43%	-

The content declaration shall list substances contained in the products that are listed in the “Candidate List of Substances of Very High Concern for Authorization” when their content exceeds the limits for registration with the European Chemicals Agency: i.e. >0.1 % of the weight of the product. **No such substances are used in the production of the products covered in this EPD.**



## Environmental performance

### Environmental impacts

The results are presented for each environmental impact category for 1 unit of small and large Table 12:38 in Table 5. The bar diagram visualises the relative results within each impact category for all the life cycle stages.

Table 5 Results for each impact category of all the life cycle stages

1 unit of Table 12:38		Small				Large				
Impact category	Unit	Upstream	Core	Downstream	Total	Upstream	Core	Downstream	Total	
Acidification (AP)	Kg SO <sub>2</sub> eq.	2,28E-01	2,07E-02	6,26E-03	2,55E-01	5,86E-01	5,48E-02	1,71E-02	6,58E-01	
Eutrophication (EP)	kg PO <sub>4</sub> <sup>3-</sup> eq.	1,02E-01	3,53E-03	3,36E-03	1,08E-01	2,60E-01	8,28E-03	9,94E-03	2,79E-01	
Global warming potential (GWP)	Fossil	kg CO <sub>2</sub> eq.	3,97E+01	3,56E+00	5,99E+00	4,92E+01	9,35E+01	7,29E+00	1,72E+01	1,18E+02
	Biogenic	kg CO <sub>2</sub> eq.	9,62E+00	2,66E+00	5,17E+00	1,75E+01	2,99E+01	1,61E+00	1,76E+01	4,90E+01
	LULT*	kg CO <sub>2</sub> eq.	1,41E-01	3,83E-03	7,50E-02	2,19E-01	3,56E-01	5,97E-03	7,58E-02	4,38E-01
	Total	kg CO <sub>2</sub> eq.	4,94E+01	6,23E+00	1,12E+01	6,69E+01	1,24E+02	8,91E+00	3,49E+01	1,68E+02
Photochemical oxidation (POCP)	kg C <sub>2</sub> H <sub>2</sub> eq.	2,06E-02	6,28E-04	2,93E-04	2,15E-02	5,06E-02	1,68E-03	7,00E-04	5,29E-02	
Abiotic depletion, Elements	kg Sb eq.	4,22E-04	7,20E-06	-5,42E-06	4,24E-04	8,44E-04	4,36E-05	5,31E-06	8,93E-04	
Abiotic depletion, fossil fuels	MJ, net calorific value	4,79E+02	3,10E+01	2,56E+01	5,36E+02	1,15E+03	9,60E+01	6,37E+01	1,31E+03	
Water scarcity	m <sup>3</sup> eq.	1,39E+01	1,61E-01	6,25E-01	1,46E+01	3,50E+01	3,29E-01	1,79E+00	3,72E+01	

LULT\* Land use and land transformation

## Other environmental indicators

Table 6 Results for other mandatory impact categories for all the life cycle stages.

1 unit of Table 12:38		Small				Large			
Impact category	Unit	Upstream	Core	Downstream	Total	Upstream	Core	Downstream	Total
Human toxicity, cancer impacts	Cases	3,22E-05	1,65E-07	5,73E-07	3,29E-05	4,99E-05	3,22E-07	1,54E-06	5,17E-05
Human toxicity, non-cancer impacts	Cases.	1,08E-05	3,32E-07	2,02E-06	1,31E-05	2,40E-05	8,09E-07	6,60E-06	3,14E-05
Fresh water ecotoxicity	PAF.m3.day	4,39E+05	1,00E+04	2,74E+05	7,23E+05	9,75E+05	2,48E+04	9,64E+05	1,96E+06
Land use	Species.yr	1,14E-07	6,98E-10	1,23E-09	1,16E-07	3,48E-07	2,09E-09	1,98E-09	3,52E-07

## Use of resources

The results for resource use for 1 unit of small and large Table 12:38 are presented in Table 7.

Table 7 Results for resource use for all the life cycle stages.

1 unit of Table 12:38			Small				Large			
Parameter	Unit		Upstream	Core	Downstream	Total	Upstream	Core	Downstream	Total
<b>Primary energy resources - Renewable</b>	Use as energy carrier	MJ*	2,50E+02	2,61E+00	3,00E+00	2,56E+02	7,32E+02	3,55E+00	3,43E+00	<b>7,39E+02</b>
	Used as raw materials	MJ*	1,36E+02	2,10E+00	0	1,26E+02	4,16E+02	3,15E+00	0	4,20E+02
	<b>TOTAL</b>	<b>MJ*</b>	<b>3,86E+02</b>	<b>4,71E-00</b>	<b>3,00E+00</b>	<b>3,94E+02</b>	<b>1,15E+03</b>	<b>6,70E-00</b>	<b>3,43E+00</b>	<b>1,16E+03</b>
<b>Primary energy resources - Non-renewable</b>	Use as energy carrier	MJ*	6,06E+0	3,67E+01	2,60E+01	6,69E+02	1,52E+03	1,03E+02	6,47E+01	<b>1,69E+03</b>
	Used as raw materials	MJ*	6,36E+01	7,00E+00	0	7,06E+01	8,68E+01	1,05E+01	0	9,73E+01
	<b>TOTAL</b>	<b>MJ*</b>	<b>6,70E+02</b>	<b>4,37E+01</b>	<b>2,60E+01</b>	<b>7,40E+02</b>	<b>1,61E+03</b>	<b>1,14E+02</b>	<b>6,47E+01</b>	<b>1,79E+03</b>
<b>Secondary material</b>	kg	4,37E-01	0	0	<b>4,37E-01</b>	1,50E+00	0	0	<b>1,50E+00</b>	
<b>Renewable secondary fuels</b>	MJ*	0	0	0	<b>0</b>	0	0	0	<b>0</b>	
<b>Non-renewable secondary fuels</b>	MJ*	0	0	0	<b>0</b>	0	0	0	<b>0</b>	
<b>Net use fresh water</b>	m <sup>3</sup>	1,36E+01	1,61E-01	6,25E-01	1,44E+01	3,42E+01	3,29E-01	1,79E+00	<b>3,63E+01</b>	

\*Net calorific value



## Result for 1 kg average of Table 12:38

Results for 1 kg average of Table 12:38 to calculate the impacts for all the tables in the Table 12:38 series.

### Environmental performance

The results are presented for each environmental impact category for 1 kg average of Table 12:38 in Table 10. The bar diagram visualises the relative results within each impact category for all the life cycle stages. The column deviation represents the percentage of deviation in the results for 1 kg small and 1 kg large of Table 12:38 for all the impact categories.

Table 10 Results for each impact category of the life cycle stages.

1 kg average Table 12:38		Upstream	Core	Downstream	Total	Deviation	
Impact category	Unit						
Acidification (AP)	Kg SO <sub>2</sub> eq.	1,62E-02	1,50E-03	4,61E-04	1,82E-02	±4%	
Eutrophication (EP)	kg PO <sub>4</sub> <sup>3-</sup> eq.	7,23E-03	2,40E-04	2,58E-04	7,73E-03	±4%	
Global warming potential (GWP)	Fossil	kg CO <sub>2</sub> eq.	2,71E+00	2,27E-01	4,53E-01	3,39E+00	±1%
	Biogenic	kg CO <sub>2</sub> eq.	7,60E-01	1,14E-01	4,30E-01	1,30E+00	±9%
	Land use and land transformation	kg CO <sub>2</sub> eq.	9,94E-03	2,17E-04	3,66E-03	1,38E-02	±8%
	Total	kg CO <sub>2</sub> eq.	3,48E+00	3,41E-01	8,88E-01	4,70E+00	±3%
Photochemical oxidation (POCP)	kg C <sub>2</sub> H <sub>2</sub> eq.	1,43E-03	4,57E-05	2,01E-05	1,50E-03	±2%	
Abiotic depletion, Elements	kg Sb eq.	2,66E-05	8,76E-07	-1,08E-07	2,74E-05	±6%	
Abiotic depletion, fossil fuels	MJ, net calorific value	3,30E+01	2,45E+00	1,80E+00	3,72E+01	±2%	
Water scarcity	m <sup>3</sup> eq.	9,80E-01	1,03E-02	4,72E-02	1,04E+00	±4%	

## Other environmental impact indicators

The column deviation represents the percentage of deviation in the results for 1 kg small and 1 kg large of Table 12:38 for all the other impact categories.

Table 11 Results for additional mandatory impact categories for all the life cycle stages.

1 kg average Table 12:38		Upstream	Core	Downstream	Total	Deviation
Impact category	Unit					
Human toxicity, cancer impacts	Cases	1,82E-06 	1,03E-08 	4,19E-08 	<b>1,87E-06</b>	<b>±20%</b>
Human toxicity, non-cancer impacts	Cases	7,14E-07 	2,30E-08 	1,65E-07 	<b>9,02E-07</b>	<b>±1%</b>
Fresh water ecotoxicity	PAF.m3.day	2,91E+04 	7,00E+02 	2,33E+04 	<b>5,30E+04</b>	<b>±7%</b>
Land use	Species.yr	8,91E-09 	5,40E-11 	7,05E-11 	<b>9,03E-09</b>	<b>±13%</b>

## Resource use

Table 12 Results for resource use for all the life cycle stages.

1 kg average Table 12:38			Upstream	Core	Downstream	TOTAL
Parameter	Unit					
Primary energy resources - Renewable	Use as energy carrier	MJ, net calorific value	1,91E+01	1,41E-01	1,52E-01	1,94E+01
	Used as raw materials	MJ, net calorific value	1,07E+01	1,06E-01	0	1,08E+01
	<b>TOTAL</b>	<b>MJ, net calorific value</b>	<b>2,98E+01</b>	<b>2,47E-01</b>	<b>1,52E-01</b>	<b>3,02E+01</b>
Primary energy resources -Non-renewable	Use as energy carrier	MJ, net calorific value	4,27E+01	2,74E+00	1,82E+00	4,73E+01
	Used as raw materials	MJ, net calorific value	3,43E+00	3,91E-01	0	3,82E+00
	<b>TOTAL</b>	<b>MJ, net calorific value</b>	<b>4,61E+01</b>	<b>3,13E+00</b>	<b>1,82E+00</b>	<b>5,11E+01</b>
Secondary material	kg		3,66E-02	0	0	<b>3,66E-02</b>
Renewable secondary fuels	MJ, net calorific value		0	0	0	<b>0</b>
Non-renewable secondary fuels	MJ, net calorific value		0	0	0	<b>0</b>
Net use fresh water	m <sup>3</sup>		9,58E-01	1,03E-02	4,72E-02	<b>1,02E+00</b>

## Waste production and output flows

The results for waste production and output flows for 1 kg average of Table 12:38 are presented in Table 13 and Table 14.

### Waste production

Table 13 Results for waste production from all the life cycle stages.

1 kg average Table 12:38		Upstream	Core	Downstream	TOTAL
Parameter	Unit				
Hazardous waste disposed	kg	1,71E-02	0	0	1,71E-02
Non-hazardous waste disposed	kg	1,79E-01	4,15E-04	9,98E-05	1,80E-01
Radioactive waste disposed	kg	1,95E-05	0	0	1,95E-05

### Output flows

Table 14 Outflows from all the life cycle stages.

1 kg average Table 12:38		Upstream	Core	Downstream	TOTAL
Parameter	Unit				
Materials for reuse	kg	0	0	0	0
Materials for recycling	kg	3,18E-03	3,90E-05	1,53E-02	1,85E-02
Materials for energy recovery	kg	4,97E-02	9,99E-02	5,89E-01	7,38E-01
Exported energy, electricity	MJ	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0

## References

General programme Instructions of the International EPD® System.

Bhalekar, S. (2023) *Lekolar's Table 12:38 series – Life cycle assessment*. DGE Mark och Miljö AB.

Baumann, H., & Tillman, A., 2004. *Liftarens guide till LCA* Lund, Sweden: Studentlitteratur ISBN: 91-44-02364-2.

Blonk Agri-footprint BV. (2019). *Agri-footprint – Part 1 Methodology and basic principles and Part 2 description of data*, Gouda, the Netherlands, 2019. Available at: [www.agri-footprint.com](http://www.agri-footprint.com)

Boulay, Anne-Marie, Jane Bare, Lorenzo Benini, Markus Berger, Michael J. Lathuiliere, Alessandro Manzardo, Manuele Margni, et al. 'The WULCA Consensus Characterization Model for water scarcity footprints: Assessing impacts of water consumption Based on Available Water (AWARE)' *The International Journal of Life Cycle Assessment* 23, no. 2

Carlsson, R., & Pålsson, A.-C., 2011. *Livscykelanalys – ringar på vattnet* SIS Förlag 978-91-7162-652-3.

Gerflor, 2019. *Environmental product declaration, Linoleum Acoustic, Gerflor DLW Linoleum Acoustic sheet flooring*. UL Environment.

Huijbregts, M.A.J. et al. (2016) *ReCiPe2016: a harmonised life cycle impact assessment method at midpoint and endpoint level*, *Int J Life Cycle Assess* (2017) 22:138-147

Interpon, 2018. *Environmental product declaration, Interpon Powder coatings*. International EPD system, S-P-00548.

Industry data 2.0, 2017

PRé, 2020. *SimaPro Database Manual Methods Library*. Available at: <https://simapro.com/wp-content/uploads/2020/06/DatabaseManualMethods.pdf>

Pulver, 202. *Environmental product declaration, Pulver Class 1 Powder Coating*. International EPD system, S-P-04077.

Wernet, G., Bauer, C., Steubing, B., Reinhard, J., Moreno-Ruiz, E., and Weidema, B., 2016. *The ecoinvent database version 3 (part I): overview and methodology*. *The International Journal of Life Cycle Assessment*, [online] 21(9), pp.1218–1230. Available at: <http://link.springer.com/10.1007/s11367-016-1087-8>