



Environmental Product Declaration



Environmental Product Declaration for window fabric covering products produced by Texstyle, a division of Rollease Acmeda

ADMINISTRATIVE INFORMATION

International Certified Environmental Product Declaration

Declared Product:	This Environmental Product Declaration (EPD) covers window covering fabrics produced by Texstyle, a division of Rollease Acmeda. Declared unit: 1 (one) square meter of fabric
Declaration Owner:	Texstyle, a Division of Rollease Acmeda
	750 East Main Street
	Stamford, CT
	www.texstyle.com
Program Operator:	Labeling Sustainability
	575 SE Courances Dr
	Port St. Lucie, FL
	www.labelingsustainability.com
Product Category Rule:	ISO 21930:2017 Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction product and services and Sub Product Category Rule for Flooring: Carpet, Resilient, Lamine, Ceramic, Wood Version 2 (Expires June 23, 2020) No new PCR found.
	PCR Program Operator: NSF International
	PCR review was conducted by: Mr. Jack Geibig, Mt. Thaddeus Owen, Sr. Michael Overcash
Independent LCA Reviewer and EPD Verifier:	This declaration was independently verified in accordance with ISO 14025:2006
	Independent verification of the declaration, according to ISO 14025:2006
	External X
	Third Party Verifier Geoffrey Guest, Certified 3rd Party Verifier under Labeling Sustainability Program (www.labelingsustainability.com), CSA Group (www.csaregistries.ca)
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COMPANY DESCRIPTION

Textstyle is a division of Rollease Acmeda, a world leader in the design and manufacture of hardware systems for the window coverings industry. As such, we represent one of the largest independent supply businesses in the window covering industry. Textstyle was established in Australia in 1996 and has grown to be a leading supplier of window furnishing fabrics to customers throughout the world. Manufacturing in Europe, Asia and Australia, Textstyle has built an enviable reputation as a supplier of high-quality window furnishing fabrics. Our fashionable range is designed for performance and longevity, with an acute environmental awareness.

STUDY GOAL

The intended application of this life cycle assessment (LCA) is to comply with the procedures for creating a Type III environmental product declaration (EPD) and publish the EPD for public review on the website, www.labelingsustainability.com. This level of study is in accordance with EPD Product Category Rule (PCR) for Fabric covering published by the International Standards Organization (ISO) 21930:2017 Sustainability in buildings and civil works - Core rules for EPDs of construction products and services; International Standards Organization (ISO) 14025:2006 Environmental labels and declarations, Type III environmental declarations-Principles and procedures; ISO 14044:2006 Environmental management, Life cycle assessment- Requirements and guidelines; and ISO 14040:2006 Environmental management, Life cycle assessment-Principles and framework. The performance of this study and its subsequent publishing is in alignment with the business-to-business (B2B) communication requirements for the environmental assessment of building products. The study does not intend to support comparative assertions and is intended to be disclosed to the public.

This project report was commissioned to differentiate Textstyle. A Division of Rollease Acmeda from their competition for the following reasons: generate an advantage for the organization; offer customers information to help them make informed product decisions; improve the environmental performance of Textstyle. A Division of Rollease Acmeda by continuously measuring, controlling and reducing the environmental impacts of their products; help project facilitators working on Leadership in Energy and Environmental Design (LEED) projects achieve their credit goal; and to strengthen Textstyle. A Division of Rollease Acmeda's license to operate in the community. The intended audience for this LCA report is Textstyle. A Division of Rollease Acmeda's employees, their suppliers, project specifiers of their products, architects, and engineers. The EPD report is also available for policy makers, government officials interested in sustainability, academic professors, and LCA professionals. This LCA report does not include product comparisons from other facilities.



DESCRIPTION OF PRODUCT AND SCOPE

The technical properties and specifications of the products covered in this study are detailed in the table below.

Table 1: Product's specifications per declared unit.

Parameter	Values	Unit
Products weight	0.170 - 0.575	kg/m ²
Products width	2 - 3.2	m
Main components	Polyester: in majority	kg/m ²
	PVC: in majority	
	Flame retardant: in minority	
	Pigment/dyes: in minority	
	Additives: in minority	
	Others: in minority	
Packaging	Cardboard box: 1.07E-03	kg/m ²
	Cardboard roll: 1.88E-02	
	Plactic wrap: 4.80E-05	
	Wooden pallet: 3.20E-05	
	Packing tape: 1.92E-05	

This EPD reports various fabric products available in widths of 2-3 meters, with openness factors of 1%, 2%, 3%, 5%, and 10%. These premium-quality fabrics are designed to enhance your privacy, ideal for a wide range of applications, from home décor to commercial use, ensuring both durability and aesthetic appeal.

This LCA assumes the impacts from products manufactured in accordance with the standards outlined in this report. This LCA is a cradle-to-gate study, and therefore, stages extending beyond the plant gate are not included in this LCA. Excluded stages include transportation of the manufactured material to the construction site; on-site construction processes and components; building (infrastructure) use and maintenance; and "end-of-life" effects.

FABRIC COVERING DESIGN SUMMARY

The following tables provide a list of the fabric covering products considered in this EPD along with key performance parameters.



Table 2: Declared products with fabric considered in this environmental product declaration

Prod#	Unique name/ID	Unit	Density, dry kg/Unit	bio-carbon content, kg C/FU dry basis
1	3000 NET Privacy	m2	0.518	0
2	3000 NET 1%	m2	0.518	0
3	3000 NET 3%	m2	0.445	0
4	3000 NET 5%	m2	0.42	0
5	3000 NET 10%	m2	0.385	0
6	4000 NET 3%	m2	0.545	0
7	4000 NET 5%	m2	0.52	0
8	3000 HT 3%	m2	0.415	0
9	3000 HT 5%	m2	0.395	0
10	Kleenscreen 1%	m2	0.483	0
11	Kleenscreen 3%	m2	0.475	0
12	Kleenscreen 5%	m2	0.445	0
13	Kleenscreen Blackout	m2	0.575	0
14	Classic Screen 1%	m2	0.482	0
15	Classic Screen 3%	m2	0.465	0
16	Classic Screen 5%	m2	0.42	0
17	Ambient Renew 1%	m2	0.4	0
18	Ambient Renew 5%	m2	0.305	0
19	X-Weave 5%	m2	0.53	0
20	X-Weave 10%	m2	0.47	0
21	Mesa Light Filtering	m2	0.235	0
22	Mesa Blackout & Mesa Façade Blackout	m2	0.41	0
23	Balmoral Light Filtering	m2	0.22	0
24	Balmoral Blackout	m2	0.39	0
25	Sanctuary Light Filtering	m2	0.205	0
26	Sanctuary Blackout	m2	0.43	0
27	OmniaScreen 3%	m2	0.45	0
28	SilverScreen 2%	m2	0.4	0
29	SilverScreen 4%	m2	0.4	0
30	EnviroScreen 2%	m2	0.25	0
31	Tempe Blackout	m2	0.4	0
32	Tusk Light Filtering	m2	0.17	0
33	Tusk Blackout	m2	0.36	0
34	Vasso Blackout	m2	0.41	0
35	Vivid Block	m2	0.35	0



FABRIC COVERING DESIGN COMPOSITION

The following figures provide mass breakdown (kg per functional unit) of the material composition of each metal panel design considered.

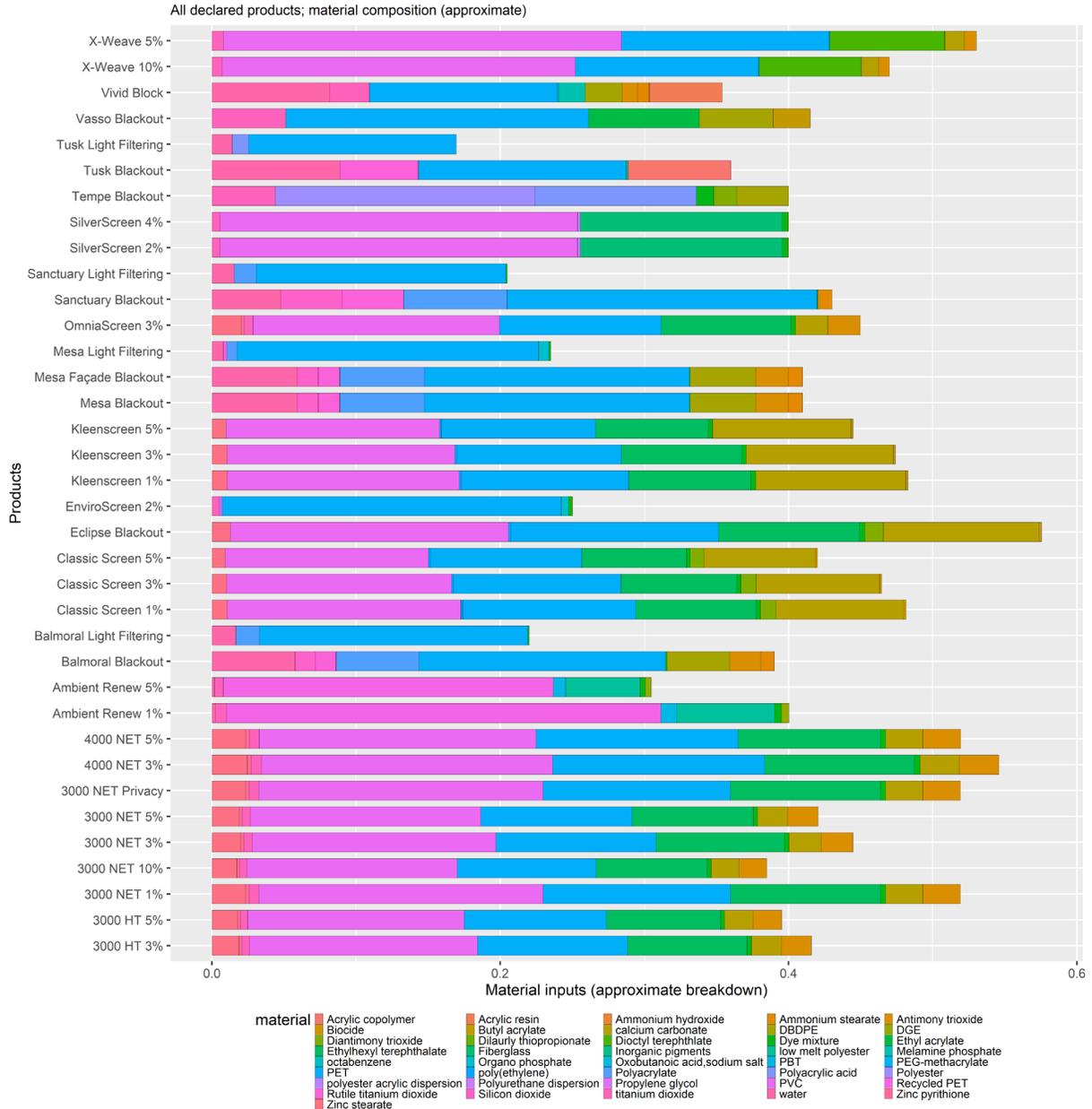


Figure 1: Material composition - fabric per 1 (one) square meter of Fabric



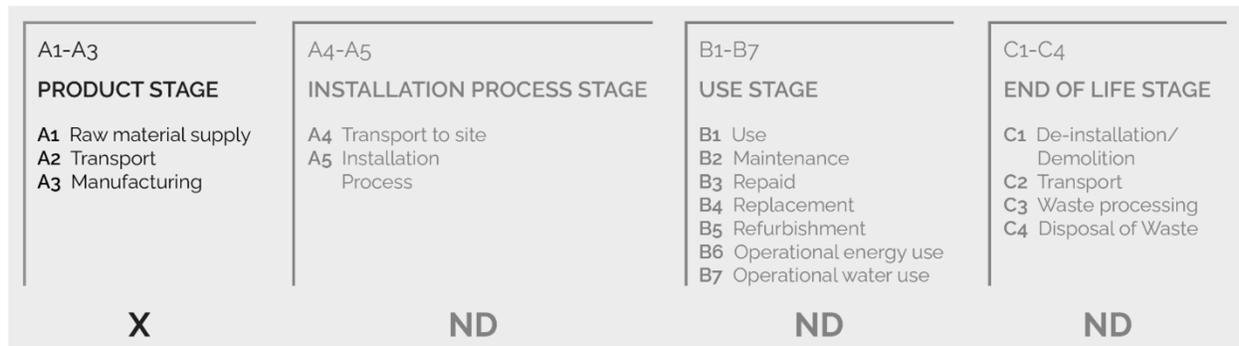
A1 RAW MATERIAL RECYCLED CONTENT AND MATERIAL LOSSES

The following table provides a list of the raw material inputs (module A1) across all products considered, their recyclability content and assumed material losses.

Table 3: **Module A1 raw material inputs, the recyclability content and assumed material losses (dry basis)**

Product.Name	Mix.Category	Primary.Content	Post.Industrial.Content	Post.Consumer.Content	Material.Losses
Recycled PET	Waste polyethylene terephthalate	0%	85%	0%	2%

SYSTEM BOUNDARIES



The following figure depicts the cradle-to-grave system boundary considered in this study:

Life Cycle Impacts

Figure 2: **General life cycle phases for consideration in a construction works system**

This is a Cradle-to-gate life cycle assessment, and the following life cycle stages are included in the study:

- A1: Raw material supply (upstream processes) - Extraction, handling, and processing of the materials used in manufacturing the declared products in this LCA.
- A2: Transportation - Transportation of A1 materials from the supplier to the "gate" of the manufacturing facility (i.e. A3).
- A3: Manufacturing (core processes)- The energy and other utility inputs used to store, move, and manufacture the declared products and to operate the facility.

According to the PCR, the following figure illustrates the general activities and input requirements for producing fabric covering products and is not necessarily exhaustive.



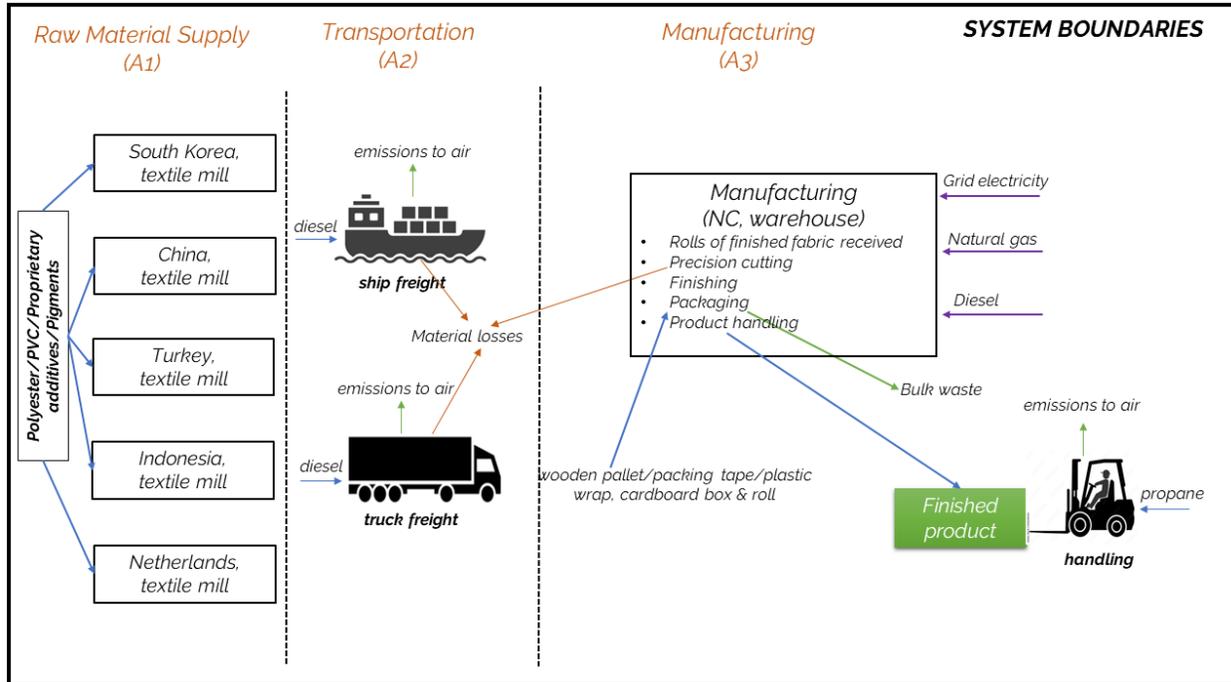


Figure 3: General system inputs considered in the product system and categorized by modules in scope

In addition, as according to the relevant PCR, the following requirements are excluded from this study:

- Production, manufacture and construction of A3 building/capital goods and infrastructure.
- Production and manufacture of steel production equipment, steel delivery vehicles, earth-moving equipment, and laboratory equipment.
- Personnel-related activities (travel, furniture, office supplies).
- Energy use related to company management and sales activities.

For this LCA the manufacturing plant, owned and operated by Texstyle, A Division of Rollease Acmeda, is located at their Fabric facility in Connecticut, USA. All operating data is formulated using the actual data from Texstyle, A Division of Rollease Acmeda’s plant at the above location, including water, energy consumption and waste generation. All inputs for this system boundary are calculated for the plant.

This life cycle inventory was organized in a spreadsheet and was then input into an RStudio environment where pre-calculated LCIA results for relevant products/activities stemming from the ecoinvent v3.10 database and a local EPD database in combination with primary data from Texstyle, A Division of Rollease Acmeda were utilized. Explanations of the contribution of each data source to this study are outlined in the section ‘Data Sources and Quality’. Further LCI details for each declared product are provided in the sections ‘Detailed LCI tables’ and ‘Transport tables’ of the detailed LCA report. A parameter uncertainty analysis was also performed where key statistical results (e.g. min/mean/max etc.) are provided in the detailed LCA report.



No known flows are deliberately excluded from this EPD.

CUT-OFF CRITERIA

ISO 14044:2006 and the focus PCR requires the LCA model to contain a minimum of 95% of the total inflows (mass and energy) to the upstream and core modules be included in this study. The cut-off criteria were applied to all other processes unless otherwise noted above as follows. A 1% cut-off is considered for all renewable and non-renewable primary energy consumption and the total mass of inputs within a unit process where the total of the neglected inputs does not exceed 5%.

DATA SOURCES AND DATA QUALITY ASSESSMENT

No recovered on-site energy occurs at this facility.

No re-used or recycled material for utilization on-site or off-site was reported at this facility.

The following statements explain how the above facility requirements/generation were derived:

Raw material transport: Rollease Acmeda provided all raw material data for the reference year 2023. This includes comprehensive details on raw material consumption and logistics data for the products covered in this study. Rollease Acmeda relied on primary data to document transportation specifics, including the actual distance, mode of transport, and location details such as city, state, and country.

Electricity: The reported electricity consumption is based on the Rollease Acmeda primary information from utility bills for the reporting period. Electricity usage allocation was initially determined by calculating the product percentage of each fabric type relative to the sales volume. Subsequently, the resulting sales percentage values were then multiplied by the total electricity consumption. Thus, giving a specific value for each fabric type to the overall electricity consumption.

Process/space heating: The facility incorporates natural gas within its production processes. The reported consumption of natural gas is based on the Rollease Acmeda primary information derived from utility bills for the reporting period. The conversion factor used for therm to MJ to represent the natural gas heating values in Mega joules (MJ) was 1 therm equating to 105.05 MJ.

Fuel required for machinery: Machinery at this facility uses either propane, reported in the utility bills, or diesel, which was also calculated from direct purchases records for the 2023 reference year.

Waste generation: Waste generation values are reported directly using primary information from the Rollease Acmeda records or vendor bills. Transportation defaults were used because the driver's route and ultimate destination are unknown. Therefore, the exact mileage could not be confirmed by the waste hauler. Transportation for waste in the end-of-life modules also uses default distances set by the PCR.

Recovered energy: No on-site energy is recovered on site.



Recycled/reused material/components: No material waste at on-site manufacturing was quantified in terms of it being reused or recycled.

Module A1 material losses: Default material losses, 2% were used.

Direct A3 emissions accounting: Direct emissions were modeled with the best available ecoinvent processes (see LCI list).

The following tables depict a list of assumed life cycle inventory utilized in the LCA modeling to generate the impact results across the life cycle modules in scope. An assessment of the quality of each LCI activities utilized from various sources is also provided.

Table 4: LCI inputs assumed for module A1 (i.e. raw material supply)

Input	LCI Activity	Data Source	Year	Technology	Time	Geography	Reliability	Completeness
Ethyl acrylate	methyl acrylate production/methyl acrylate/GLO/kg	ecoinvent v3.10 in 2024	2024	1	3	2	3	3
PBT	polyethylene terephthalate production, granulate, bottle grade/polyethylene terephthalate, granulate, bottle grade/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Melamine phosphate	melamine production/melamine/RoW/kg	ecoinvent v3.10 in 2024	2024	1	3	2	3	3
Silicon dioxide	silica sand production/silica sand/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Titanium dioxide	titanium dioxide production, chloride process/titanium dioxide/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Water	tap water production, conventional with biological treatment/tap water/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Butyl acrylate	butyl acrylate production/butyl acrylate/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Water	tap water production, conventional treatment/tap water/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Rutile TiO2	heavy mineral sand quarry operation/rutile, 95% titanium dioxide/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3



Biocide	benzimidazole-compound production/benzimidazole-compound/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Ammonium hydroxide	ammonia production, partial oxidation, liquid/ammonia, anhydrous, liquid/RoW/kg	ecoinvent v3.10 in 2024	2024	1	3	2	3	3
PEG-methacrylate	ethylene glycol production/ethylene glycol/RoW/kg	ecoinvent v3.10 in 2024	2024	1	3	2	3	3
PET	polyester fibre production, finished/fibre, polyester/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Zinc stearate	stearic acid production/stearic acid/GLO/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Propylene glycol	propylene glycol production, liquid/propylene glycol, liquid/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Ethylhexyl terephthalate	chemical production, organic/chemical, organic/GLO/kg	ecoinvent v3.10 in 2024	2024	0	3	2	3	3
Dye mixture	chemical production, inorganic/chemical, inorganic/GLO/kg	ecoinvent v3.10 in 2024	2024	0	3	2	3	3
Polyester acrylic dispersion	acrylic dispersion production, product in 65% solution state/acrylic dispersion, without water, in 65% solution state/RoW/kg	ecoinvent v3.10 in 2024	2024	1	3	2	3	3
DGE	ethylene oxide production/ethylene oxide/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Polyacrylate	methyl methacrylate production/methyl methacrylate/RoW/kg	ecoinvent v3.10 in 2024	2024	1	3	2	3	3
Polyacrylic acid	acrylic acid production/acrylic acid/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Octabenzene	octabenzene production/octabenzene/GLO/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
PVC	polyvinylchloride production, bulk polymerisation/polyvinylchloride, bulk polymerised/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Polyethylene	polyethylene, high density, granulate, recycled to generic market for high density PE granulate/polyethylene, high density, granulate/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3



Acrylic resin	methacrylic acid production/methacrylic acid/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Antimony trioxide	antimony production/antimony/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Organo phosphate	organophosphorus-compound production, unspecified/organophosphorus-compound, unspecified/RoW/kg	ecoinvent v3.10 in 2024	2024	1	3	2	3	3
DBDPE	decabromodiphenyl ether production/decabromodiphenyl ether/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Calcium carbonate	calcium carbonate production, precipitated/calcium carbonate, precipitated/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Fiberglass	glass fibre production/glass fibre/RoW/kg	ecoinvent v3.10 in 2024	2024	2	3	2	3	3
Polyurethane dispersion	methylene diphenyl diisocyanate production/methylene diphenyl diisocyanate/RoW/kg	ecoinvent v3.10 in 2024	2024	1	3	2	3	3
Recycled PET	waste input produced off-site	See A3 inputs	See A3 inputs	2	A3	2	A3	A3

Table 5: LCI inputs assumed for module A2 (i.e. transport of A1 inputs)

Input	LCI Activity	Data Source	Geo	Year	Technology	Time	Geography	Reliability	Completeness
Acrylic copolymer-freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Acrylic copolymer-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3



	metric ton, EURO4/RER/tkm									
Acrylic resin- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3
Acrylic resin- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024		2	3	1	3	3
Ammonim stearate- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3
Ammonim stearate- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024		2	3	1	3	3
Ammonium hydroxide- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5,	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3



	carbon dioxide, liquid refrigerant, cooling/GLO/tkm								
Ammonium hydroxide- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Ammonium stearate- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Ammonium stearate- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Antimony trioxide- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Antimony trioxide- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3



Biocide-freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3
Biocide-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024		2	3	1	3	3
Bis(2-ethylhexyl)terephthalate - freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3
Bis(2-ethylhexyl)terephthalate - freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024		2	3	1	3	3
Bulk waste-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024		2	3	1	3	3
Butyl acrylate-freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3



	refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm								
Butyl acrylate-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Calcium carbonate-freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Calcium carbonate-freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Calcium carbonate-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Calcium carbonate-freight	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport,	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3



transport via Truck	freight, lorry 7.5-16 metric ton, EURO4/RER/tkm								
Cardboard box- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Cardboard roll- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
DBDPE- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
DBDPE- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
DGE- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3



DGE- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Diantimony trioxide- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Diantimony trioxide- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Dilaurly thiopropionate- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Dilaurly thiopropionate- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Diocetyl terephthalate - freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3



	refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm								
Diocetyl terephthalate - freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Dye mixture- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Dye mixture- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Ethyl acrylate- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Ethyl acrylate- freight	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport,	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3



transport via Truck	freight, lorry 7.5-16 metric ton, EURO4/RER/tkm									
Ethylhexyl terephthalate- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3
Ethylhexyl terephthalate- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024		2	3	1	3	3
Fiberglass-freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3
Fiberglass-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024		2	3	1	3	3
Inorganic pigments-freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine,	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3



	3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm								
Inorganic pigments-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Low melt polyester-freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Low melt polyester-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Melamine phosphate-freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Melamine phosphate-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3



Octabenzen e- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3
Octabenzen e- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024		2	3	1	3	3
Organo phosphate- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3
Organo Phosphate- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3
Organo phosphate- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16	ecoinvent v3.10 in 2024	RER	2024		2	3	1	3	3



	metric ton, EURO4/RER/tkm								
Organo Phosphate- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Oxobutanoic acid,sodium salt- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Oxobutanoic acid,sodium salt- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
PBT- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
PBT- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
PEG- methacrylat e- freight	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton,	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3



transport via Ship	EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm								
PEG-methacrylate- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
PET- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
PET- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Plastic wrap- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Polyacrylate - freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3



	refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm								
Polyacrylate - freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Polyacrylic acid- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Polyacrylic acid- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
polyester acrylic dispersion- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
polyester acrylic dispersion- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3



<p>Polyethylen e- freight transport via Ship</p>	<p>transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm</p>	<p>ecoinvent v3.10 in 2024</p>	<p>GLO</p>	<p>2024</p>		<p>2</p>	<p>3</p>	<p>1</p>	<p>3</p>	<p>3</p>
<p>Polyethylen e- freight transport via Truck</p>	<p>market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm</p>	<p>ecoinvent v3.10 in 2024</p>	<p>RER</p>	<p>2024</p>		<p>2</p>	<p>3</p>	<p>1</p>	<p>3</p>	<p>3</p>
<p>Polyurethane dispersion- freight transport via Ship</p>	<p>transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm</p>	<p>ecoinvent v3.10 in 2024</p>	<p>GLO</p>	<p>2024</p>		<p>2</p>	<p>3</p>	<p>1</p>	<p>3</p>	<p>3</p>
<p>Polyurethane dispersion- freight transport via Truck</p>	<p>market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm</p>	<p>ecoinvent v3.10 in 2024</p>	<p>RER</p>	<p>2024</p>		<p>2</p>	<p>3</p>	<p>1</p>	<p>3</p>	<p>3</p>
<p>Propylene glycol- freight transport via Ship</p>	<p>transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid</p>	<p>ecoinvent v3.10 in 2024</p>	<p>GLO</p>	<p>2024</p>		<p>2</p>	<p>3</p>	<p>1</p>	<p>3</p>	<p>3</p>



	refrigerant, cooling/GLO/tkm								
Propylene glycol- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
PVC- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
PVC- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Recycled PET- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Recycled PET- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Rutile TiO2- freight	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton,	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3



transport via Ship	EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm								
Rutile TiO₂-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Rutile titanium dioxide-freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Rutile titanium dioxide-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Silicon dioxide-freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3



Silicon dioxide-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Tape-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Titanium dioxide-freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Titanium dioxide-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3
Titanium dioxide-freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024	2	3	1	3	3
Titanium dioxide-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024	2	3	1	3	3



	metric ton, EURO4/RER/tkm									
Water- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3
Water- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024		2	3	1	3	3
Zinc pyrithione- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/GLO/tkm	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3
Zinc pyrithione- freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024		2	3	1	3	3
Zinc stearate- freight transport via Ship	transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5, carbon dioxide, liquid refrigerant, cooling/transport, freight, lorry with refrigeration machine, 3.5-7.5 ton, EURO5,	ecoinvent v3.10 in 2024	GLO	2024		2	3	1	3	3



	carbon dioxide, liquid refrigerant, cooling/GLO/tkm									
Zinc stearate-freight transport via Truck	market for transport, freight, lorry 7.5-16 metric ton, EURO4/transport, freight, lorry 7.5-16 metric ton, EURO4/RER/tkm	ecoinvent v3.10 in 2024	RER	2024		2	3	1	3	3

Table 6: LCI inputs assumed for module A3

Input	LCI Activity	Data Source	Geo	Year	Technology	Time	Geography	Reliability	Completeness	
Bulk waste	process-specific burdens, residual material landfill/process-specific burdens, residual material landfill/RoW/kg	ecoinvent v3.10 in 2024	North Carolina	2024		2	3	2	3	3
Cardboard box	market for corrugated board box/corrugated board box/RoW/kg	ecoinvent v3.10 in 2024	North Carolina	2024	2	3	2	3	3	
Cardboard roll	market for kraft paper/kraft paper/RoW/kg	ecoinvent v3.10 in 2024	North Carolina	2024	2	3	2	3	3	
Diesel	diesel, burned in building machine/diesel, burned in building machine/GLO/MJ	ecoinvent v3.10 in 2024	Multiple locations	2024	2	3	2	3	3	
Diesel	diesel, burned in building machine/diesel, burned in building machine/GLO/MJ	ecoinvent v3.10 in 2024	Multiple locations	2024	2	3	2	3	3	
Electricity (NC warehouse)	market for electricity, medium voltage/electricity, medium voltage/US-SERC/kWh	ecoinvent v3.10 in 2024	Multiple locations	2024	2	3	2	3	3	
Natural gas	market for heat, district or industrial, natural gas/heat, district or industrial, natural gas/RoW/MJ	ecoinvent v3.10 in 2024	Multiple locations	2024	2	3	2	3	3	



Pallets	market for EUR-flat pallet/EUR-flat pallet/RoW/unit	ecoinvent v3.10 in 2024	North Carolina	2024	2	3	2	3	3
Plastic wrap	market for packaging film, low density polyethylene/packaging film, low density polyethylene/GLO/kg	ecoinvent v3.10 in 2024	North Carolina	2024	2	3	2	3	3
Propane	propane, burned in building machine/propane, burned in building machine/GLO/MJ	ecoinvent v3.10 in 2024	North Carolina	2024	2	3	2	3	3
Tape	market for packaging film, low density polyethylene/packaging film, low density polyethylene/GLO/kg	ecoinvent v3.10 in 2024	North Carolina	2024	2	3	2	3	3

DATA QUALITY ASSESSMENT

Data quality/variability requirements, as specified in the PCR, are applied. This section describes the achieved data quality relative to the ISO 14044:2006 requirements. Data quality is judged based on its precision (measured, calculated or estimated), completeness (e.g., unreported emissions), consistency (degree of uniformity of the methodology applied within a study serving as a data source) and representativeness (geographical, temporal, and technological).

Precision: Through measurement and calculation, the manufacturers collected and provided primary data on their annual production. For accuracy, the LCA practitioner and 3rd Party Verifier validated the plant gate-to-gate data.

Completeness: All relevant specific processes, including inputs (raw materials, energy and ancillary materials) and outputs (emissions and production volume) were considered and modeled to represent the specified and declared products. Most relevant background materials and processes were taken from ecoinvent v3.10 LCI datasets where relatively recent region-specific electricity inputs were utilized. The most relevant EPDs requiring key A1 inputs were also utilized where readily available.

Consistency: To ensure consistency, the same modeling structure across the respective product systems was utilized for all inputs, which consisted of raw material inputs and ancillary material, energy flows, water resource inputs, product and co-products outputs, returned and recovered Fabric covering materials, emissions to air, water and soil, and waste recycling and treatment. The same background LCI datasets from the ecoinvent v3.10 database were used across all product systems. Crosschecks concerning the plausibility of mass and energy flows were continuously conducted. The LCA team conducted mass and energy balances at the plant and selected process levels to maintain a high level of consistency.

Reproducibility: Internal reproducibility is possible since the data and the models are stored and available in a machine-readable project file for all foreground and background processes, and in



Labeling Sustainability's proprietary Fabric covering LCA calculator* for all production facility and product-specific calculations. A considerable level of transparency is provided throughout the detailed LCA report as the specifications and material quantity make-up for the declared products are presented and key primary and secondary LCI data sources are summarized. The provision of more detailed publicly accessible data to allow full external reproducibility was not possible due to reasons of confidentiality.

*Labeling Sustainability has developed a proprietary tool that allows the calculation of PCR-compliant LCA results for Fabric covering product designs. The tool auto-calculates results by scaling base-unit technosphere inputs (i.e. 1 kg sand, 1 kWh electricity, etc.) to replicate the reference flow conversions that take place in any typical LCA software like openLCA or SimaPro. The tool was tested against several LCAs performed in openLCA and the tool generated identical results to those realized in openLCA across every impact category and inventory metric (where comparisons could be readily made).

Representativeness: The representativeness of the data is summarized as follows.

- Time related coverage of the manufacturing processes' primary collected data from 2022-07-01 to 2023-06-30.
- Upstream (background) LCI data was either the PCR specified default (if applicable) or more appropriate LCI datasets as found in the country-adjusted ecoinvent v3.10 database.
- Geographical coverage for inputs required by the A3 facility(ies) is representative of its region of focus; other upstream and background processes are based on US, North American, or global average data and adjusted to regional electricity mixes when relevant.
- Technological coverage is typical or average and specific to the participating facilities for all primary data.

ENVIRONMENTAL INDICATORS AND INVENTORY METRICS

Per the PCR, this EPD supports the life cycle impact assessment indicators and inventory metrics as listed in the tables below. As specified in the PCR, the most recent US EPA Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI), impact categories were utilized as they provide a North American context for the mandatory category indicators to be included in the EPD. Additionally, the PCR requires a set of inventory metrics to be reported with the LCIA indicators (see tables below).

Table 7: Life cycle impact categories and life cycle inventory metrics

ID	LCIA.indicators	Abbreviations	Units
1	Climate change: global warming potential (GWP100)	GWP100	kg CO2-eq
2	Ozone depletion: ozone depletion potential (ODP)	ODP	kg CFC-11-eq
3	Acidification: acidification potential (AP)	AP	kg SO2-eq
4	Eutrophication: eutrophication potential	EP	kg N-eq
5	Smog formation potential	SFP	kg O3-eq
6	Energy resources: non-renewable: abiotic depletion potential (ADP): fossil fuels	ADP _{fossil}	MJ



Inventory metrics			
7	Inventory indicators ISO21930: Cumulative Energy Demand - renewable energy resources	RPRE	MJ
8	Inventory indicators ISO21930: Renewable primary resources with energy content used as material (i.e., PERM)	PRM	MJ
9	Inventory indicators ISO21930: Cumulative Energy Demand - non-renewable energy resources	NRPRE	MJ
10	Inventory indicators ISO21930: Non-renewable primary resources with energy content used as material (i.e., PENRM)	NRPRM	kg
11	Inventory indicators ISO21930: use of secondary material	SM	MJ
12	Inventory indicators ISO21930: use of renewable secondary fuels	RSF	MJ
13	Inventory indicators ISO21930: recovered energy	RE	MJ
14	Inventory indicators ISO21930: use of net fresh water	FW	m3
15	Inventory indicators ISO21930: hazardous waste disposed	HWD	kg
16	Inventory indicators ISO21930: non-hazardous waste disposed	NHWD	kg
17	Inventory indicators ISO21930: high-level radioactive waste disposed	HLRW	kg
18	Inventory indicators ISO21930: intermediate and low-level radioactive waste disposed	ILLRW	kg
19	Inventory indicators ISO21930: materials for recycling	MR	kg
20	Inventory indicators ISO21930: materials for energy recovery	MER	kg
21	Inventory indicators ISO21930: exported energy - electricity	EEel	MJ
22	Inventory indicators ISO21930: exported energy - heat	EEheat	MJ

It should be noted that emerging LCA impact categories and inventory items are still under development and can have high levels of uncertainty that preclude international acceptance pending further development. Use caution when interpreting data in any of the following categories.

- Renewable primary energy resources as energy (fuel);
- Renewable primary resources as material;
- Non-renewable primary resources as energy (fuel);
- Non-renewable primary resources as material;
- Secondary Materials;
- Renewable secondary fuels;
- Non-renewable secondary fuels;
- Recovered energy;
- Abiotic depletion potential for non-fossil mineral resources.
- Land use related impacts, for example on biodiversity and/or soil fertility;
- Toxicological aspects;
- Emissions from land use change [GWP 100 (land-use change)];
- Hazardous waste disposed;
- Non-hazardous waste disposed;



- High-level radioactive waste;
- Intermediate and low-level radioactive waste;
- Components for reuse;
- Materials for recycling;
- Materials for energy recovery;
- Recovered energy exported from the product system.

TOTAL IMPACT SUMMARY

Interpretation

The life cycle assessment of Texstyle, a division of Rollease Acmeda, encompassing 36 distinct products, reveals a carbon footprint ranging from 1.38 to 3.66 kilograms of carbon dioxide equivalent (KgCO₂ eq).

A significant proportion of the environmental impact, approximately 18-25% and 15-16%, respectively, is attributed to the utilization of Polyethylene Terephthalate (PET) and antimony trioxide as raw materials. This suggests that the extraction and processing of these materials have a substantial environmental effect.

In the A3 stage, which represents the manufacturing process, energy consumption is the primary contributor to environmental impact, with electricity and natural gas accounting for approximately 15-20% and 10-12%, respectively, of the overall KgCO₂ eq, depending on the specific product. This underscores the importance of optimizing energy efficiency and transitioning to renewable energy sources to mitigate the environmental footprint of Texstyle's manufacturing operations.

The following table reports the total LCA results for each product produced at the given fabric covering facility on a per 1 (one) square meter of Fabric basis.

Table 8: **Total life cycle (across modules in scope) impact results for all declared products, assuming the geometric mean point values on a per 1 (one) square meter of fabric basis**

a) Midpoint Impact Categories:

Indicator/LCI Metric	GWP100	ODP	AP	EP	SFP	ADP _{fossil}
Unit	kg CO ₂ -eq	kg CFC-11-eq	kg SO ₂ -eq	kg N-eq	kg O ₃ -eq	MJ
Minimum	2.57	2.55e-07	0.00691	0.00507	0.138	35.5
Maximum	8.11	1.12e-06	0.0285	0.0227	0.574	114
Mean	5.66	4.86e-07	0.0192	0.0139	0.387	78.5
Median	6.03	4.62e-07	0.0206	0.015	0.416	82.8
3000 NET Privacy	7.05	5.32e-07	0.0273	0.0206	0.548	98.4
3000 NET 1%	7.05	5.32e-07	0.0273	0.0206	0.548	98.4
3000 NET 3%	6.19	4.59e-07	0.0237	0.018	0.476	86.5
3000 NET 5%	5.9	4.34e-07	0.0225	0.0171	0.452	82.4
3000 NET 10%	5.5	3.99e-07	0.0208	0.0159	0.418	76.7
4000 NET 3%	7.34	5.76e-07	0.0285	0.0212	0.574	102
4000 NET 5%	7.05	5.5e-07	0.0273	0.0204	0.549	98.3



3000 HT 3%	5.84	4.29e-07	0.0222	0.0169	0.447	81.6
3000 HT 5%	5.61	4.09e-07	0.0213	0.0162	0.427	78.3
Kleenscreen 1%	6.54	4.72e-07	0.0183	0.0151	0.378	92.7
Kleenscreen 3%	6.44	4.64e-07	0.018	0.0149	0.372	91.3
Kleenscreen 5%	6.09	4.36e-07	0.017	0.0141	0.351	86.4
Kleenscreen Blackout	8.11	6.04e-07	0.0274	0.0201	0.547	114
Classic Screen 1%	6.77	4.83e-07	0.0222	0.0167	0.452	94.9
Classic Screen 3%	6.52	4.48e-07	0.0219	0.0161	0.437	91.2
Classic Screen 5%	5.92	4.27e-07	0.0185	0.0144	0.385	83.1
Ambient Renew 1%	3.98	1.12e-06	0.0105	0.0077	0.223	55.3
Ambient Renew 5%	3.27	8.57e-07	0.00846	0.0064	0.18	45.5
X-Weave 5%	7.17	6.28e-07	0.0225	0.0184	0.462	102
X-Weave 10%	6.48	5.58e-07	0.0202	0.0165	0.414	92.2
Mesa Light Filtering	3.37	4.7e-07	0.00913	0.00702	0.188	46.3
Mesa Blackout & Mesa Façade Blackout	6.82	4.72e-07	0.0275	0.013	0.545	90.2
Balmoral Light Filtering	3.22	4.19e-07	0.00826	0.00528	0.176	44.2
Balmoral Blackout	6.54	4.41e-07	0.0263	0.0125	0.52	86.6
Sanctuary Light Filtering	3.06	3.92e-07	0.00783	0.00507	0.167	42.2
Sanctuary Blackout	5.53	5.09e-07	0.0153	0.00799	0.318	75.7
OmniaScreen 3%	4.79	4.41e-07	0.02	0.0164	0.391	67.9
SilverScreen 2%	4.23	2.55e-07	0.0131	0.0102	0.249	60.1
SilverScreen 4%	4.23	2.55e-07	0.0131	0.0102	0.249	60.1
EnviroScreen 2%	2.57	5.09e-07	0.00691	0.00613	0.138	35.5
Tempe Blackout	6.16	4.61e-07	0.0235	0.0171	0.464	82.4
Tusk Light Filtering	3.19	3.38e-07	0.00798	0.00548	0.177	43.8
Tusk Blackout	5.97	3.75e-07	0.0165	0.0083	0.346	81.2
Vasso Blackout	6.92	5.29e-07	0.0216	0.0227	0.432	93.7
Vivid Block	5.57	3.4e-07	0.0203	0.0132	0.39	73.5

b) Resource Inventory Metrics:

Indicator/LCI Metric	RPRE	PRM	NRPRE	NRPRM	SM	RSF	RE	FW
Unit	MJ	MJ	MJ	kg	MJ	MJ	MJ	m3
Minimum	1.97	0.271	1.97	0.667	0.0133	0.000249	0.0302	0.00808
Maximum	4.23	1.21	4.22	7.8	0.0541	0.000718	0.083	0.0299
Mean	3.2	0.621	3.2	4.11	0.0345	0.000502	0.0592	0.0201
Median	3.43	0.646	3.42	5.01	0.0369	0.000542	0.0625	0.0224
3000 NET Privacy	4.1	1.16	4.1	6.57	0.0468	0.000688	0.0737	0.0288
3000 NET 1%	4.1	1.16	4.1	6.57	0.0468	0.000686	0.0737	0.0288
3000 NET 3%	3.72	1.04	3.72	5.65	0.0407	0.000609	0.0651	0.0252
3000 NET 5%	3.6	0.998	3.6	5.33	0.0386	0.000581	0.0622	0.024
3000 NET 10%	3.41	0.938	3.42	4.89	0.0357	0.000535	0.0581	0.0222
4000 NET 3%	4.23	1.21	4.22	6.73	0.049	0.000718	0.0766	0.0299
4000 NET 5%	4.1	1.17	4.1	6.42	0.0469	0.000675	0.0737	0.0287
3000 HT 3%	3.57	0.989	3.57	5.27	0.0382	0.000586	0.0616	0.0237
3000 HT 5%	3.47	0.955	3.47	5.01	0.0366	0.000544	0.0593	0.0227



Kleenscreen 1%	3.18	0.684	3.18	5.43	0.0401	0.000548	0.0671	0.0189
Kleenscreen 3%	3.15	0.677	3.15	5.34	0.0394	0.000541	0.0661	0.0186
Kleenscreen 5%	3.04	0.652	3.04	5.01	0.0372	0.000523	0.0628	0.0176
Kleenscreen Blackout	4.06	0.789	4.06	6.67	0.0541	0.000582	0.083	0.0272
Classic Screen 1%	3.53	0.68	3.52	5.43	0.0439	0.00059	0.0698	0.0226
Classic Screen 3%	3.44	0.678	3.43	5.19	0.043	0.000458	0.0672	0.0219
Classic Screen 5%	3.17	0.574	3.17	4.68	0.0356	0.000402	0.0614	0.0193
Ambient Renew 1%	2.4	0.271	2.39	1.68	0.0221	0.000353	0.0443	0.0115
Ambient Renew 5%	2.17	0.271	2.16	1.29	0.0177	3e-04	0.0369	0.00955
X-Weave 5%	3.78	0.271	3.78	7.8	0.0437	0.000611	0.0751	0.0242
X-Weave 10%	3.51	0.271	3.51	6.92	0.0391	0.000558	0.0681	0.0219
Mesa Light Filtering	2.13	0.271	2.13	0.793	0.0184	0.000307	0.0368	0.00965
Mesa Blackout & Mesa Façade Blackout	3.61	0.646	3.61	2.16	0.0412	0.000617	0.0694	0.0252
Balmoral Light Filtering	2.01	0.271	2.01	0.995	0.0172	0.000302	0.0342	0.00848
Balmoral Blackout	3.51	0.628	3.5	2.09	0.0393	0.000591	0.0666	0.0242
Sanctuary Light Filtering	1.97	0.271	1.97	0.928	0.0163	0.00028	0.0328	0.00813
Sanctuary Blackout	2.53	0.649	2.52	2.61	0.0296	0.00044	0.0522	0.0156
OmniaScreen 3%	3.42	1.05	3.42	5.71	0.0315	0.000487	0.0528	0.0227
SilverScreen 2%	2.9	0.271	2.9	5.23	0.0221	0.000343	0.0452	0.0151
SilverScreen 4%	2.9	0.271	2.9	5.23	0.0221	0.000343	0.0452	0.0151
EnviroScreen 2%	1.97	0.271	1.97	0.713	0.0133	0.000249	0.0302	0.0082
Tempe Blackout	3.58	0.271	3.57	2.94	0.0356	0.00058	0.0651	0.0236
Tusk Light Filtering	2.01	0.271	2.01	0.667	0.0177	0.000297	0.0346	0.00808
Tusk Blackout	2.59	0.271	2.59	2.4	0.0326	0.000476	0.056	0.0166
Vasso Blackout	3.47	0.271	3.46	3.34	0.0358	0.000567	0.0764	0.0248
Vivid Block	3.22	0.578	3.22	1.95	0.032	0.000504	0.0579	0.0266



c) Waste/output Inventory Metrics:

Indicator/LCI Metric	HWD	NHWD	HLRW	ILLRW	MR	MER	EEel	EEheat
Unit	kg	kg	kg	kg	kg	kg	MJ	MJ
Minimum	0.104	2.71	1.18e-05	4.46e-05	0.0114	3.02e-06	0.016	0.014
Maximum	0.572	16.2	2.14e-05	6.88e-05	0.0505	1.22e-05	0.0312	0.0518
Mean	0.329	9.5	1.72e-05	5.81e-05	0.0314	7.54e-06	0.0246	0.0345
Median	0.354	10.7	1.8e-05	6.02e-05	0.0341	8.24e-06	0.0259	0.037
3000 NET Privacy	0.548	14	2.09e-05	6.75e-05	0.039	1.05e-05	0.03	0.0437
3000 NET 1%	0.548	14	2.09e-05	6.75e-05	0.039	1.05e-05	0.03	0.0437
3000 NET 3%	0.477	12.2	1.92e-05	6.34e-05	0.0335	9.06e-06	0.0274	0.0377
3000 NET 5%	0.453	11.6	1.87e-05	6.21e-05	0.0316	8.58e-06	0.0266	0.0356
3000 NET 10%	0.419	10.7	1.79e-05	6.01e-05	0.0291	7.92e-06	0.0253	0.0328
4000 NET 3%	0.572	14.5	2.14e-05	6.88e-05	0.041	1.09e-05	0.0308	0.0458
4000 NET 5%	0.548	13.9	2.08e-05	6.75e-05	0.0391	1.05e-05	0.0299	0.0438
3000 HT 3%	0.448	11.5	1.86e-05	6.18e-05	0.0313	8.49e-06	0.0264	0.0352
3000 HT 5%	0.429	11	1.81e-05	6.07e-05	0.0298	8.1e-06	0.0257	0.0336
Kleenscreen 1%	0.232	10.8	1.75e-05	5.89e-05	0.0414	7.69e-06	0.0262	0.0408
Kleenscreen 3%	0.229	10.7	1.74e-05	5.85e-05	0.0407	7.56e-06	0.0259	0.0401
Kleenscreen 5%	0.217	10.1	1.69e-05	5.73e-05	0.0381	7.12e-06	0.025	0.0377
Kleenscreen Blackout	0.43	13.8	2.1e-05	6.81e-05	0.0505	1.06e-05	0.0312	0.0518
Classic Screen 1%	0.358	11.5	1.87e-05	6.2e-05	0.0413	8.72e-06	0.0275	0.0423
Classic Screen 3%	0.349	11	1.82e-05	6.06e-05	0.0394	8.39e-06	0.0267	0.0405
Classic Screen 5%	0.299	10	1.71e-05	5.78e-05	0.0354	7.36e-06	0.025	0.0364
Ambient Renew 1%	0.157	4.59	1.4e-05	4.97e-05	0.0225	4.87e-06	0.0193	0.0249
Ambient Renew 5%	0.131	3.78	1.29e-05	4.7e-05	0.0173	3.85e-06	0.0175	0.0193



X-Weave 5%	0.373	16.2	2.01e-05	6.55e-05	0.042	9.46e-06	0.0301	0.045
X-Weave 10%	0.336	14.5	1.88e-05	6.25e-05	0.0373	8.46e-06	0.028	0.0401
Mesa Light Filtering	0.119	3.31	1.26e-05	4.66e-05	0.0187	3.71e-06	0.0174	0.0193
Mesa Blackout & Mesa Façade Blackout	0.461	7.08	1.84e-05	6.15e-05	0.0362	8.83e-06	0.0267	0.0427
Balmoral Light Filtering	0.109	2.83	1.2e-05	4.51e-05	0.0175	3.23e-06	0.0164	0.0176
Balmoral Blackout	0.441	6.8	1.8e-05	6.03e-05	0.0344	8.42e-06	0.026	0.0406
Sanctuary Light Filtering	0.104	2.71	1.18e-05	4.46e-05	0.0163	3.04e-06	0.0161	0.0165
Sanctuary Blackout	0.164	7.17	1.42e-05	5.04e-05	0.0338	5.64e-06	0.0203	0.0317
OmniaScreen 3%	0.442	11.5	1.79e-05	6.01e-05	0.0206	7.28e-06	0.025	0.0278
SilverScreen 2%	0.195	13.1	1.64e-05	5.6e-05	0.0183	4.87e-06	0.0233	0.0219
SilverScreen 4%	0.195	13.1	1.64e-05	5.6e-05	0.0183	4.87e-06	0.0233	0.0219
EnviroScreen 2%	0.109	3.06	1.2e-05	4.49e-05	0.0114	3.02e-06	0.016	0.014
Tempe Blackout	0.482	8.04	1.86e-05	6.12e-05	0.0299	1.05e-05	0.0259	0.0392
Tusk Light Filtering	0.11	2.77	1.21e-05	4.51e-05	0.0181	3.31e-06	0.0165	0.018
Tusk Blackout	0.174	8.05	1.45e-05	5.11e-05	0.0379	6.09e-06	0.0209	0.0349
Vasso Blackout	0.349	8.35	1.86e-05	6.13e-05	0.0365	1.22e-05	0.0274	0.0489
Vivid Block	0.376	6.52	1.7e-05	5.72e-05	0.0279	8.89e-06	0.0236	0.0343

ADDITIONAL ENVIRONMENTAL INFO

No regulated substances of very high concern are utilized on site.

REFERENCES

ISO Standards:

- ISO 6707-1: 2014 Buildings and Civil Engineering Works - Vocabulary - Part 1: General Terms
- ISO 14021:1999 Environmental Labels and Declarations - Self-declared Environmental Claims (Type II Environmental Labeling)
- ISO 14025:2006 Environmental Labels and Declarations - Type III Environmental Declarations - Principles and Procedures



- ISO 14040:2006 Environmental Management - Life Cycle Assessment - Principles and Framework
- ISO 14044:2006 Environmental Management - Life Cycle Assessment - Requirements and Guidelines
- ISO 14067:2018 Greenhouse Gases – Carbon Footprint of Products – Requirements and Guidelines for Quantification
- ISO 14050:2009 Environmental Management - Vocabulary
- ISO 21930:2017 Sustainability in Building Construction - Environmental Declaration of Building Products

EN Standards:

- EN 16757 Sustainability of construction works - Environmental product declarations – Product Category Rules for concrete and concrete elements
- EN 15804 Sustainability of construction works - Environmental product declarations -Core rules for the product category of construction products

Other References:

- USGBC LEED v4 for Building Design and Construction, 11 Jan 2019 available at <https://www.usgbc.org/resources/pcr-committee-process-resources-part-b>
- USGBC PCR Committee Process & Resources: Part B, USGBC, 7 July 2017 available at <https://www.usgbc.org/resources/pcr-committee-process-resources-part-b>.
- US EPA (2020) Advancing Sustainable Materials Management: 2018 Fact Sheet, https://www.epa.gov/sites/production/files/2021-01/documents/2018_ff_fact_sheet_dec_2020_fnl_508.pdf

