



PERFORMANCE DASHBOARD
 LCA RESULTS & INTERPRETATION
 HOW WE MAKE IT GREENER

SM Transparency Catalog > Applegate — Greenfiber Insulation > SANCTUARY[®] Loose-Fill or Spray-Applied Insulation by Greenfiber[®]





SANCTUARY[®] by Greenfiber[®] Blow-In or Spray-Applied Insulation

SANCTUARY cellulose insulation can be easily installed in attics, walls, floors, and ceilings to significantly improve the comfort, safety and well-being of any home. The first all-in-one fiber insulation that can be blownin, spray-applied or dense-packed, and it's suitable for all climates and conditions. Capable of reducing sound power by 60% and heating and cooling costs by up to 25%, it's made from recycled plant fibers which locks in carbon for the life of the home.





Performance dashboard

Features & functionality

Fills tiny joins, crevices or gaps, creating a dense barrier capable of muffling sound and reducing air infiltration.

Extremely versatile and easy to use.

Exceptional acoustical properties can abate the power of sound by up to 60% when installed in walls.

Capable of reducing heating and cooling costs by up to 25%.

Carries a Class 1/A fire rating and qualifies as a fire-blocking material for advanced fire resistance.

Locks in carbon for the life of the home to reduce global warming.

Visit Greenfiber for more product information Sanctuary[®] Blow-In or Spray-Applied Insulation

Environment & materials

Improved by:

Made with 85% post-consumer recycled paper

Uses low-energy manufacturing and short-haul transportation, resulting in insulation with lower embodied carbon

Free from unhealthy substances such as asbestos and formaldehyde

Lower carbon insulation material with high amount of carbon storage reduces global warming potential

Certifications & rating systems:

ASTM C739 Declare label, Red List Free Canadian Construction Materials Centre Energy Star UL Classified

Health Product Declaration (HPD)

MasterFormat® 07 20 00 SANCTUARY Fact Sheet, Guide Specs For spec help, contact us or call 800.228.0024

See LCA, interpretation & rating systems





SM Transparency Report (EPD)™

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VERIFICATION	L
3rd-party reviewed	•
Transparency Rej	oort (EF
3rd-party verified	

Validity: 2022/12/09 – 2027/12/08 Decl #: AGG – 20221209 – 001 This environmental product declaration (EPD) was externally verified, according to ISO 21930:2017, UL Part A, and ISO 14025:2006, by Jack Geibig, President, Ecoform.

Ecoform, LLC 11903 Black Road, Knoxville, TN 37932 www.ecoform.com

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SUMMARY Reference PCR ULE PCR Part B: Building Envelo

Insulation EPD Requirements v2.0, 2018

Regions; system boundaries North America; Cradle-to-grave

Functional unit / reference service life: $1 m^2$ of installed insulation material, packaging included, with a thickness that gives an average thermal resistance of RSI= $1m^2 \cdot K/W$; 75 years

LCIA methodology: TRACI 2.1

LCA software; LCI database SimaPro Developer 9.4 Ecolnvent 3.8, US-EI 2.2

LCA conducted by: Sustainable Minds

Public LCA:

Life Cycle Assessment of SANCTUARY Insulation for Applegate-Greenfiber Greenfiber 5500 77 Center Drive Suite 100 Charlotte, NC 28217 greenfiber.com (800) 228-0024

Contact us

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SM Transparency Catalog > Applegate — Greenfiber Insulation > SANCTUARY[®] Loose-Fill or Spray-Applied Insulation by Greenfiber[®]

LCA results & interpretation

SANCTUARY® Loose-Fill or Spray-Applied Insulation by Greenfiber®

Life cycle assessment

Scope and summary

○ Cradle to gate ○ Cradle to gate with options **V** Cradle to grave

Application

SANCTUARY is insulation primarily made of postconsumer paper and can be either blown-in or spray-applied in attics, walls, floors, and ceilings. This fiber insulation is suitable for all climates and conditions. SANCTUARY is engineered to fill tiny crevices and gaps, creating a dense, advanced barrier capable of reducing the power of sound and also heating and cooling costs. It can be easily filled over existing insulation and is designed to fill every gap, void, and hard-to-reach place without time consuming cutting and fitting.

Functional unit

Reference service life: 75 years. One square meter of installed insulation material, packaging included, with a thickness that gives an average thermal resistance of RSI=1m2·K/W over a period of 75 years. Reference flow: 0.653 ka Thickness: 0.0378 m

Density: 17.1 kg/m3

Manufacturing data

Reporting period: January--December, 2021

Representing six locations across the US: Mesa, AZ; Norfolk, NE; Salt Lake City, UT; Tampa, FL; Waco, TX; and Wilkes-Barre, PA. After raw materials are transported to the facilities, incoming wastepaper is shredded and placed into a fiber handling system, which is then moved to the finish mills, where the final grind is conducted and the dry fire-retardant chemicals and then a liquid fire retardant are added. That product is moved to the packaging subsystem, which hydraulically compresses the insulation into its final packaging. Each facility has a dust collection system which traps the dust from the wastepaper processing and is later sent for recycling along with production scrap.

Default installation, packaging, and disposal scenarios

At the installation site, insulation products are delivered in 25lb bags, unpackaged, and installed with a blowing machine, assumed to consume 0.003 kWh of electricity during the installation of one square meter. The disposal of packaging waste is modeled using US EPA's landfilling rate of 37.1% and recycling rate of 53.9%. No maintenance or replacement is required to achieve the product's life span. After removal, the insulation is assumed to be landfilled.



Data quality

Primary data was collected for a time period of one year, which represents typical operations of Applegate-Greenfiber facilities. Inventory data is considered to have a good precision and provide a representative depiction of the facilities. Data is also considered to be complete, as no know flows are deliberately excluded from this analysis other than those defined to be outside of the system boundary.

Material composition greater than 1% by weight

FLOW	MASS PERCENTAGE
Wastepaper	83-85%
Boric acid	9%
Calcium sulfate	2-3%
Oil	2%
Starch	1%
Plastic bag (packaging)	1%

Total impacts by life cycle stages [mPts/per func unit]

3.00E-02	LIFE CYCLE STAGE MPTS/	FUNC. UNIT
250E-02	Raw material supply and transport	1.84E-02
	Manufacturing	2.70E-03
2.00E-02	Distribution	4.27E-03
	Installation and use	3.90E-05
1.50E-02 — —	End of life	7.67E-04

What's causing the greatest impacts

All life cycle stages

For SANCTUARY insulation, the cradle-to-gate stage (A1-A3) dominates

the results for most categories. This study assessed a multitude of inventory and environmental indicators. In addition to the six major impact categories (global warming potential, ozone depletion, acidification, smog, eutrophication, and fossil fuel depletion), additional impact categories have also been included. These six impact categories are globally deemed mature enough to be included in Type III environmental declarations. Other categories are being developed and defined, and LCA should continue making advances in their development. However, the EPD users shall not use additional measures for comparative purposes. LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

Overall results are consistent with expectations for SANCTUARY's life cycle, with most of the impacts being generated during cradle-to-gate stages, as insulation is not associated with energy consumption during its installation, use, or disposal stages.

Raw materials acquisition and manufacturing

The primary finding, across the environmental indicators and for the product considered, was that cradle-to-gate impacts contribute the most impacts to most categories. This is mostly driven by the extraction of incoming raw materials (A1) and electricity consumed during manufacturing (A3). Boric acid and oil use are the raw materials that contribute to higher environmental impacts than the others. No substances required to be reported as hazardous are associated with the production of this product.

Transportation

Following the cradle-to-gate stage, the next highest impacts come from the distribution (A4) stage. The impacts associated with outbound transport are comparatively higher than that for inbound due to the further transportation distances.

Installation

Installation accounts for a small fraction of overall life cycle impacts. The only installation impacts are associated with packaging disposal and the energy used for an installation blower machine. No ancillary materials are needed for installation.

End of life

At the end of life, insulation is removed from the building and landfilled. For all products, waste was dominated by the final disposal of the product. Non-hazardous waste also accounts for waste generated during manufacturing and installation. No hazardous waste is created.

Sensitivity analysis

The electricity consumed during production drives the overall impacts in each impact category. Since the manufacturing stage is one of the major contributors to life cycle impacts, a sensitivity analysis was performed to check the robustness of the results when the energy consumed is varied by ±20%. The resulting variation in the total life cycle impacts is less than 10%, implying that the system is not sensitive to this assumed value.

Scaling factors

Scaling factors can be used to determine the impacts of each R-value of SANCTUARY Insulation based on different applications (loose and stabilized, dense pack, or spray-filled application). Loose-fill cellulose insulation is typically applied to enclosed areas, unfinished attic floors, and other hard to reach places, so the results per functional unit are presented for a loose-filled and stabilized application at RSI=1 m²·K/W. The scaling factors are based on the mass and thickness of SANCTUARY and can be used to determine the impacts for each R-value when multiplied by the functional unit. See the scaling factors on Page 4 >

SANCTUARY® Cellulose Insulation is made from living trees that lock in carbon for the life of the product. Couple this with low-energy manufacturing and short-haul transportation, and it's clear why cellulose insulation is the responsible choice for homeowners and the planet. Selecting low-carbon building material options can dramatically reduce emissions while providing the same level of building performance, or higher. As insulation levels in buildings increase to meet higher energy efficiency requirements, choosing insulation products based on their embodied carbon is crucial. Since cellulose insulation is derived from trees, it sequesters carbon in the walls and ceilings of homes, a feature not seen in other types of insulation products that are commercially available.

See how we make it greener

LCA results

1.00E-02

5.00E-03

0.00E+00

LIFE CYCLE STAGE	RAW MATERIAL SUPPLY AND TRANSPORT	MANUFACTURING	DISTRIBUTION	INSTALLATION	USE	END OF LIFE
Information modules: Included (X) Excluded* (MND)	A1 Raw material extraction	A3 Manufacturing operations	A4 Transport to building sites	A5 Installation	B1 Use	C1 Deconstruction
Stages B1-B7, C1, and C3 though included, have no associated activities. *Module D is excluded.	A2 Transport to facilities				B2 Maintenance	C2 Waste transport
					B3 Repair	C3 Waste processing
					B4 Replacements	C4 Disposal
					B5 Refurbishment	
					B6 Operational energy use	
					B7 Operational water use	
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SM Single Score Learn about SM Single Score results

Impacts per functional unit: weighted average of all plants	1.84E-02 mPts	2.70E-03 mPts	4.277E-03 mPts	3.90E-05 mPts	0 mPts	7.67E-04 mPts
Materials or processes contributing >20% to total impacts in each life cycle stage	Extraction of raw materials, especially boric acid and oil.	Electricity required to operate the manufacturing process.	Truck transportation for distribution of the product.	Electricity consumed by the blower during insulation.	No activities contributing to impacts in the use stage.	Truck transportation to the disposal site, and final waste landfill.

Mesa, AZ - TRACI v2.1 results per functional unit

	LIFE CYCLE STAGE	A1-A2 RM SUPPLY & TRANSPORT	A3 MANUFACTURING	A4 DISTRIBUTION	A5 INSTALLATION	B1-B7 USE	C1-C4 END OF LIFE
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Ecological damage

Impact category	Unit							
Acidification	kg SO ₂ eq	0	1.27E-03	3.24E-04	9.28E-05	1.93E-06	0	3.55E-05
Eutrophication	kg N eq	0	1.44E-04	2.72E-05	1.93E-05	4.48E-07	0	5.70E-06
Global warming (embodied carbon)	kg CO ₂ eq	0	2.04E-01	8.33E-02	5.34E-02	7.53E-04	0	1.33E-02
Ozone depletion	kg CFC-11 eq	0	3.34E-08	2.29E-09	1.27E-08	8.70E-11	0	3.03E-09

Human health damage

Impact category	Unit							
Carcinogenics	CTU _h	0	2.76E-09	1.62E-10	4.90E-11	2.66E-12	0	1.03E-11
Non-carcinogenics	CTU _h	0	4.93E-08	2.73E-09	7.49E-09	5.15E-11	0	1.37E-09
Respiratory effects	kg PM _{2.5} eq	0	1.99E-04	1.96E-05	1.87E-05	1.20E-06	0	5.54E-06
Smog	kg O ₃ eq	0	1.25E-02	2.80E-03	1.19E-03	2.40E-05	0	7.20E-04

Additional environmental information

Impact category	Unit							
Fossil fuel depletion	MJ, LHV	0	4.97E-01	1.12E-01	1.13E-01	1.03E-03	0	2.79E-02
Ecotoxicity	CTU _e	0	73.7 %	1.0 %	21.4 %	0.1 %	0 %	3.8 %
See the additional content required by the ULE PCR Part B for building envelope thermal insulation on page 4 of the Transparency Report PDF .								

Norfolk, NE - TRACI v2.1 results per functional unit

LIFE CYCLE STAGE			A1-A2 RM SUPPLY & TRANSPORT	A3 MANUFACTURING	A4 DISTRIBUTION	A5 INSTALLATION	B1-B7 USE	C1-C4 END OF LIFE	
Ecological damage									
Impact category	Unit								
Acidification	kg SO ₂ eq	0	1.28E-03	5.13E-04	1.18E-04	1.91E-06	0	3.52E-05	
Eutrophication	kg N eq	8	1.41E-04	4.85E-05	2.46E-05	4.43E-07	0	5.65E-06	
Global warming (embodied carbon)	kg CO ₂ eq	8	1.90E-01	1.06E-01	6.80E-02	7.46E-04	0	1.31E-02	
Ozone depletion	kg CFC-11 eq	0	2.96E-08	3.16E-09	1.62E-08	8.62E-11	0	3.00E-09	
Human health damage									
Impact category	Unit								
Carcinogenics	CTU _h	0	2.75E-09	2.61E-10	6.24E-11	2.64E-12	0	1.02E-11	
Non-carcinogenics	CTU _h	0	4.76E-08	4.29E-09	9.55E-09	5.10E-11	0	1.36E-09	
Respiratory effects	kg PM _{2.5} eq	0	1.98E-04	2.94E-05	2.38E-05	1.19E-06	0	5.48E-06	
Smog	kg O_3 eq	8	1.35E-02	4.35E-03	1.52E-03	2.38E-05	0	7.13E-04	
Additional environmental information									
Impact category	Unit								
Fossil fuel depletion	MJ, LHV	8	4.65E-01	8.96E-02	1.44E-01	1.02E-03	0	2.77E-02	
Ecotoxicity	CTU	0	67.8 %	1.5 %	26.9 %	0.1 %	0 %	3.7 %	

See the additional content required by the ULE PCR Part B for building envelope thermal insulation on page 4 of the Transparency Report PDF.

LIFE CYCLE STAGE			A1-A2 RM SUPPLY & TRANSPORT	A3 MANUFACTURING	A4 DISTRIBUTION	A5 INSTALLATION	B1-B7 USE	C1-C4 END OF LIFE
Ecological damage								
Impact category	Unit							
Acidification	kg SO ₂ eq	?	1.15E-03	2.05E-04	1.77E-04	1.91E-06	0	3.52E-05
Eutrophication	kg N eq	•	1.16E-04	1.72E-05	3.70E-05	4.43E-07	0	5.65E-06
Global warming (embodied carbon)	kg CO ₂ eq	8	1.23E-01	5.28E-02	1.02E-01	7.46E-04	0	1.31E-02
Ozone depletion	kg CFC-11 eq	0	1.41E-08	1.46E-09	2.43E-08	8.62E-11	0	3.00E-09
Human health dam	age							
Impact category	Unit							
Carcinogenics	CTU _h	0	2.70E-09	1.05E-10	9.37E-11	2.64E-12	0	1.02E-11
Non-carcinogenics	CTU _h	0	4.28E-08	1.74E-09	1.43E-08	5.10E-11	0	1.36E-09
Respiratory effects	kg PM _{2.5} eq	0	1.82E-04	1.26E-05	3.58E-05	1.19E-06	0	5.48E-06
Smog	kg O ₃ eq	•	1.14E-02	1.79E-03	2.28E-03	2.38E-05	0	7.13E-04
Additional environ	nental informati	on						
Impact category	Unit							
Fossil fuel depletion	MJ, LHV	0	3.26E-01	7.32E-02	2.16E-01	1.02E-03	0	2.77E-02
Ecotoxicity	CTU _e	0	55.4 %	0.6 %	40.2 %	0.1 %	0 %	3.7 %
ee the additional conten	t required by the l	JLE P	CR Part B for buil	Iding envelope therr	nal insulation on	page 4 of the Tra r	sparency Repor	t PDF.

LIFE CYCLE STAGE			A1-A2 RM SUPPLY & TRANSPORT	A3 MANUFACTURING	A4 DISTRIBUTION	A5 INSTALLATION	B1-B7 USE	C1-C4 END OF LIFE			
Ecological damage											
Impact category	Unit										
Acidification	kg SO ₂ eq	0	1.16E-03	2.32E-04	1.21E-04	1.93E-06	0	3.55E-05			
Eutrophication	kg N eq	0	1.20E-04	1.75E-05	2.52E-05	4.48E-07	0	5.70E-06			
Global warming (embodied carbon)	kg CO ₂ eq	0	1.37E-01	1.16E-01	6.97E-02	7.53E-04	0	1.33E-02			
Ozone depletion	kg CFC-11 eq	0	1.77E-08	2.36E-09	1.66E-08	8.70E-11	0	3.03E-09			
Human health damage											
Impact category	Unit										
Carcinogenics	CTU _h	0	2.72E-09	1.07E-10	6.39E-11	2.66E-12	0	1.03E-11			
Non-carcinogenics	CTU _h	0	4.51E-08	2.07E-09	9.78E-09	5.15E-11	0	1.37E-09			
Respiratory effects	kg PM _{2.5} eq	0	1.86E-04	1.52E-05	2.44E-05	1.20E-06	0	5.54E-06			
Smog	kg O ₃ eq	0	1.13E-02	2.43E-03	1.55E-03	2.40E-05	0	7.20E-04			
Additional environmental information											
Impact category	Unit										
Fossil fuel depletion	MJ, LHV	0	3.58E-01	2.45E-01	1.48E-01	1.03E-03	0	2.79E-02			
Ecotoxicity	СТИ	0	65.9 %	0.9 %	29.2 %	0.1 %	0 %	4.0 %			

See the additional content required by the ULE PCR Part B for building envelope thermal insulation on page 4 of the Transparency Report PDF.

Waco, TX - TRACI v2.1	results per	func	tional unit					
LIFE CYCLE STAGE			A1-A2 RM SUPPLY & TRANSPORT	A3 MANUFACTURING	A4 DISTRIBUTION	A5 INSTALLATION	B1-B7 USE	C1-C4 END OF LIFE
Ecological damage								
Impact category	Unit							
Acidification	kg SO ₂ eq	0	1.16E-03	2.94E-04	7.81E-05	1.91E-06	0	3.52E-05
Eutrophication	kg N eq	0	1.16E-04	2.47E-05	1.63E-05	4.43E-07	0	5.65E-06
Global warming (embodied carbon)	kg CO ₂ eq	•	1.23E-01	8.43E-02	4.49E-02	7.46E-04	0	1.31E-02
Ozone depletion	kg CFC-11 eq	0	1.40E-08	3.59E-09	1.07E-08	8.62E-11	0	3.00E-09
Human health damage	ge							
Impact category	Unit							
Carcinogenics	CTU _h	0	2.76E-09	1.52E-10	4.12E-11	2.64E-12	0	1.02E-11
Non-carcinogenics	CTU _h	?	4.45E-08	2.63E-09	6.31E-09	5.10E-11	0	1.36E-09
Respiratory effects	kg PM _{2.5} eq	?	1.86E-04	1.83E-05	1.57E-05	1.19E-06	0	5.48E-06
Smog	kg O ₃ eq	0	1.12E-02	2.65E-03	1.00E-03	2.38E-05	0	7.13E-04
Additional environmental information								
Impact category	Unit							
Fossil fuel depletion	MJ, LHV	?	3.26E-01	1.27E-01	9.52E-02	1.02E-03	0	2.77E-02
Ecotoxicity	CTU _e	0	71.3 %	1.3 %	22.5 %	0.1 %	0 %	4.7 %

See the additional content required by the ULE PCR Part B for building envelope thermal insulation on page 4 of the Transparency Report PDF.

Wilkes-Barr, PA - TRACI v2.1 results per functional unit

LIFE CYCLE STAGE			A1-A2 RM SUPPLY & TRANSPORT	A3 MANUFACTURING	A4 DISTRIBUTION	A5 INSTALLATION	B1-B7 USE	C1-C4 END OF LIFE
Ecological damage								
Impact category	Unit							
Acidification	kg SO ₂ eq	0	1.21E-03	2.24E-04	1.07E-04	1.91E-06	0	3.52E-05
Eutrophication	kg N eq	0	1.27E-04	1.88E-05	2.23E-05	4.43E-07	0	5.65E-06
Global warming (embodied carbon)	kg CO ₂ eq	0	1.53E-01	5.13E-02	6.17E-02	7.46E-04	0	1.31E-02
Ozone depletion	kg CFC-11 eq	?	2.20E-08	2.78E-09	1.47E-08	8.62E-11	0	3.00E-09
Human health damage	je							
Impact category	Unit							
Carcinogenics	CTU _h	0	2.65E-09	1.19E-10	5.66E-11	2.64E-12	0	1.02E-11
Non-carcinogenics	CTU _h	0	4.87E-08	1.82E-09	8.66E-09	5.10E-11	0	1.36E-09
Respiratory effects	kg PM _{2.5} eq	0	2.00E-04	1.36E-05	2.16E-05	1.19E-06	0	5.48E-06
Smog	kg O ₃ eq	?	1.18E-02	1.89E-03	1.38E-03	2.38E-05	0	7.13E-04
Additional environmental information								

Impact category	Unit							
Fossil fuel depletion	MJ, LHV	0	3.74E-01	6.38E-02	1.31E-01	1.02E-03	0	2.77E-02
Ecotoxicity	CTU _e	0	69.4 %	0.8 %	25.8 %	0.1 %	0 %	3.9 %

See the additional content required by the ULE PCR Part B for building envelope thermal insulation on page 4 of the Transparency Report PDF.

References

LCA Background Report

Applegate-Greenfiber SANCTUARY LCA Background Report (public version), Applegate-Greenfiber 2022; SimaPro Analyst 9.4; Ecoinvent v3 and US ecoinvent (US -EI 2.2) database; TRACI 2.1.

PCRs

ISO 21930:2017 serves as the core PCR along UL Part A.

ULE PCR Part A: Life Cycle Assessment Calculation Rules and Report Requirements v3.1

February, 2018. Technical Advisory Panel members reviewed and provided feedback on content written by UL Environment and USGBC. Past and present members of the Technical Advisory Panel are listed in the PCR.

ULE PCR Part B: Building Envelope Thermal Insulation EPD Requirements v2.0

April 2018. PCR review conducted by: Thomas Gloria, PhD (Industrial Ecology Consultants); Christoph Koffler, PhD (thinkstep); and Andre Desjarlais (Oak Ridge National Laboratory).

UL Environment General Program Instructions v2.5, March 2021 (available upon request)

ISO 14025, "Sustainability in buildings and civil engineering works -- Core rules for environmental product declarations of construction products and services"

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Download PDF SM Transparency Report, which includes the additional EPD content required by the UL Environment PCR.

SM Transparency Reports (TR) are ISO 14025 Type III environmental declarations (EPD) that enable purchasers and users to compare the potential environmental performance of products on a life cycle basis. Environmental declarations from different programs (ISO 14025) may not be comparable. Comparison of the environmental performance of Building Envelope Thermal Insulation using EPD information shall be based on the product's use and impacts at the building level, and therefore EPDs may not be used for comparability purposes when not considering the building energy use phase as instructed under this PCR. Full conformance with the PCR for Building Envelope Thermal Insulation allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible". Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared.

Rating systems

The intent is to reward project teams for selecting products from manufacturers who have verified improved life-cycle environmental performance.

LEED BD+C: New Construction v4 - LEED v4	
Building product disclosure and optimization	
Environmental product declarations	
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🔵 Industry-wide (generic) EPD	½ product
V Product-specific Type III EPD	1 product

LEED BD+C: New Construction | v4.1 - LEED v4.1 Building product disclosure and optimization **Environmental product declarations**

O Industry-wide (generic) EPD	½ product
V Product-specific Type III EPD	1 product

Collaborative for High Performance Schools National Criteria MW 7.1 – Environmental Product Declarations

-		
\checkmark	Third-party certified type III EPD	2 points

BREEAM New Construction 2018 Mat 02 - Environmental impacts from construction products **Environmental Product Declarations (EPD)**

O Industry average EPD	.5 points
Multi-product specific EPD	.75 points
Vertific EPD	1 point

SM Transparency Report (EPD)™

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VERIFICATION LCA \heartsuit **3rd-party reviewed** Transparency Report (EPD)

3rd-party verified

Validity: 2022/12/09 - 2027/12/08 Decl #: AGG - 20221209 - 001

Knoxville, TN 37932 (865) 850-1883

11903 Black Road,

Ecoform, LLC

This environmental product

verified, according to ISO

President, Ecoform.

declaration (EPD) was externally

21930:2017, UL Part A, and ISO

14025:2006, by Jack Geibig,



SUMMARY Reference PCR

Regions; system boundaries North America; Cradle-to-grave

Functional unit / reference service life: 1 m² of installed insulation material, packaging included, with a thickness that gives an average thermal resistance of RSI=1m²·K/W; 75 years

LCIA methodology: TRACI 2.1 LCA software; LCI database SimaPro Developer 9.4 Ecolnvent 3.8, US-El 2.2

LCA conducted by: Sustainable Minds

Greenfiber 5500 77 Center Drive Suite 100 Charlotte, NC 28217 (800) 228-0024

Contact us

Public LCA:





SM Transparency Catalog > Applegate — Greenfiber Insulation > SANCTUARY[®] Loose-Fill or Spray-Applied Insulation by Greenfiber[®]

How we make it greener

SANCTUARY[®] Loose-Fill or Spray-Applied Insulation by Greenfiber[®]

Collapse all

RAW MATERIAL ACQUISITION

85% Recycled Content

SANCTUARY® Cellulose Insulation is made from up to 85% recycled paper, and cardboard-higher recycled content than almost any other commonly used building material. This plantbased, or biogenic, material locks more carbon into the paper (and out of the air) than what was emitted in harvesting and manufacturing. This opens up a new category of building materials with carbon removal and storage potential. When added to homes, cellulose insulation traps that carbon for the life of the home, effectively lowering the carbon footprint of homes.



See LCA results by life cycle stage

TRANSPORTATION

Regional Transportation

The Applegate-Greenfiber® supply chain is sustainably focused, as we have a plant in each region of the country to keep the delivery of raw materials and shipping of finished product to within a 500 mile radius of each plant, lowering resulting fuel emissions.

Our SANCTUARY® Insulation is also compressively packaged to 6x, or more, nominal settled density for maximum transportation efficiency. This compressive packaging allows for fewer deliveries and more cellulose insulation on the transportation vehicle.



MANUFACTURING

Low-Energy Manufacturing

Our electric powered plants use low-energy manufacturing processes that generate zero waste, other than dust, which is confined within the production system and filtered out of the air that gets discharged into the atmosphere. We even recycle that dust, and the paper scrap from production, back into the product. Fire retardants used in our insulation are considered to be of low or no toxicity. Improvements in fire retardant processing and infusion technology have resulted in historically low fire retardant



content with no loss of fire safety.

Applegate-Greenfiber's process diverts about 277,000 TONS of paper from landfills each year, equivalent to 157,000 ACRES of forest.

USE AND END OF LIFE

Protecting People and the Environment

With SANCTUARY® Insulation, the same attributes that contribute to the low global warming potential make it a great choice for homeowners who desire more sustainable, healthy homes. If you're torn between cellulose and other insulation alternatives, consider this breakdown of greenhouse gas impact, recycled content and toxic emissions. Non-irritating cellulose insulation requires no special protective clothing during installation. Our insulation products has been tested for VOC emission and have been found to be low VOC sources.

Most construction projects have large dumpsters on site full of construction waste and debris from building products that end up in the waste stream and require shipping to landfills, further impacting the environment. Our insulation is fully recovered and reused on-site when installed, leaving virtually no excess material to return to the waste stream. Special machines used in the blown-in process allow excess or over spayed material to be vacuumed up and be blown back in on site or salvaged for a future installation.



Research on the use of wood-intensive construction and cellulose insulation products in homes shows it is possible to lower the carbon footprint of houses, so they become "carbon sinks" capable of locking in carbon for the life of the dwelling. The carbon rich wood and cellulose wood fiber stays in the home for years effectively trapping the carbon from escaping into the environment.



SM Transparency Report (EPD)™

LCA

 \checkmark

VERIFICATION

3rd-party reviewed Ø

Transparency Report (EPD)

3rd-party verified

Validity: 2022/12/09 - 2027/12/08 Decl #: AGG - 20221209 - 001

This environmental product declaration (EPD) was externally verified, according to ISO 21930:2017, UL Part A, and ISO 14025:2006, by Jack Geibig, President, Ecoform.

Ecoform, LLC 11903 Black Road, Knoxville, TN 37932 (865) 850-1883



SUMMARY

Reference PCR

Regions; system boundaries North America; Cradle-to-grave

Functional unit / reference service life: 1 m² of installed insulation material, packaging included, with a thickness that gives an average thermal resistance of RSI=1m²·K/W; 75 years

LCIA methodology: TRACI 2.1

LCA software; LCI database SimaPro Developer 9.4 Ecolnvent 3.8, US-EI 2.2

LCA conducted by: Sustainable Minds

Public LCA: essment of SANCTUARY

Greenfiber

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Contact us



1 2 3 4 ADDITIONAL EPD CONTENT

Additional EPD content required by:

ULE PCR Part B: Building Envelope Thermal Insulation EPD Requirements

Data

Background This product-specific declaration was created by collecting production data from six Applegate-Greenfiber facilities. Secondary data sources include EcoInvent 3.8 and US-EI 2.2.

Allocation The allocation methods used were examined according to the updated allocation rules in ISO 21930:2017. All facilities provided annual data for the studied product. Manufacturing inputs were allocated by mass using the amount of SANCTUARY produced compared to total production for CY2021. Based on annual production mass, the inventory (material and resources inputs and outputs) was developed for each facility for the production of a 25lb bag of SANCTUARY Insulation, which was later scaled to meet the functional unit. No further allocation was performed.

 $\ensuremath{\textit{Cut-off criteria}}$ for the inclusion of mass and energy flows are 1% of renewable primary resource (energy) usage, 1% nonrenewable primary resource (energy) usage, 1% of the total mass input of that unit process, and 1% of environmental impacts. The total of neglected input flows per module does not exceed 5% of energy usage, mass, and environmental impacts. The only exceptions to these criteria are substances with hazardous and toxic properties, which must be listed even when the given process unit is under the cut-off criterion of 1% of the total mass. No known flows are deliberately excluded from this declaration; therefore, these criteria have been met. Biogenic carbon is included in reported results.

Quality Temporal and technological representativeness are considered to be high. Geographical representativeness is considered to be good. All relevant process steps for the product system were considered and modeled. The process chain is considered sufficiently complete with regards to the goal and scope of this study. The product system was checked for mass balance and completeness of the inventory. Capital equipment was excluded as required by the PCR. Otherwise, no data were knowingly omitted. For more information on data quality, see the LCA background report.

Major system boundary exclusions:

- Capital goods & infrastructure; maintenance and operation of support equipment; • Manufacture & transport of packaging materials not associated with final product; • Human labor and employee transport;
- Building operational energy and water use not associated with final product. Major assumptions and limitations:
- Generic data sets used for material inputs, transport, and waste processing are considered good quality, but actual impacts from material suppliers, transport carriers, and local waste processing may vary.
- The impact assessment methodology categories do not represent all possible environmental impact categories.
- Characterization factors used within the impact assessment methodology may contain varying levels of uncertainty.
- LCA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

Relevant technical properties

Loose-fill applications are in accordance with ASTM C739, and stabilized applications are for professional installers only using specialized equipment in accordance with ASTM C1497. Installation musty comply with ASTM C1015, as applicable, and Applegate-Greenfiber installation instructions for each application. Compliance with model building codes does not always ensure compliance with state or local building codes, which may be amended versions of these model codes. Always check with local building code officials to confirm compliance. The thermal resistance (R-value) is determined by ASTM C518.

Scaling factors

The scaling factors below are based on the mass and thickness of $\ensuremath{\mathsf{SANCTUARY}}$ and can be used to determine the impacts for each R-value. Multiply the results per functional unit by the corresponding scaling factor for the R-value of interest in order to get results for your specific application.

3.82E-08

1.69E-04

43.4%

2.54E-01

CTUh

CTUe

kg PM_{2.5} eq

MJ surplus

1.11E-08

3.05E-05

30.4%

2.43E-01

2.73E-09

1.96E-05

1.0%

1.12E-01

Scaling factors table

SANCTUARY Insulation Scenarios and additional technical information Transport to the building site [A4] Lorry, 16-32 ton

Vehicle type	Lor	ry, 1	6-32 ton		
Fuel type	Die	sel			
Liters of fuel	42		l/100 km	1	
	558	3	km (Mesa, AZ)		
	711		km (Norfolk, NE)		
Distance from manufacturer to installation site	1,06	59	km (Salt Lake City, UT)		
	729	9	km (Tam	ipa, FL)	
	470)	km (Waco, TX)		
		5	km (Wilkes-Barre, PA		
Capacity utilization (mass based)	76	%			
Capacity utilization volume factor	>1				
Gross density of products transported	144		kg/m ³ (co	ompressed in bag)	
Installation into the building [A5]					
Installation scrap assumed		1		%	
Electricity consumption		0.0	03	kWh	
Product loss per functional unit (scrap)		0.0	0649	kg	
Waste materials at the construction site before waste processing (product scrap and packaging waste)	Ð	0.0	109	kg	
Output materials from on-site waste processing Lar	ndfill	0.0	04	kg	

Recycling 0.006 kg Biogenic carbon contained in packaging 0 kg CO₂ VOC emissions 0 $\mu g/m^3$ The final evaluation report addressing all standards required for the testing, evaluation, and approval of the declared product and its application in building assemblies for building code and other regulation compliance is available at: https://www.greenfiber.com/uploads/documents/UL-Evaluation-Report.pdf

Reference service life

Reference	Service	Life (RSL)	

Reference Service Life (RSL)	years	
Declared product properties	Refer to 'Relevant techni	ical properties'
Design application parameters, indoor environment	Installation as recommended by the manufacturer, either blown-in or spray-applied in attics, walls, floors, a ceilings	
Maintenance process information	Not expected to require repair, replacement, or re	maintenance, efurbishment
Use conditions	Expected to be undistur no associated operation water use	bed during use, al energy or

End of life [C1-C4]

Assumptions for scenario development	Manual deconstruc	Manual deconstruction, sent to landfi			
Collection process	Collected separate	ely	0	kg	
	Collected with mixe waste	ed construction	0.648	kg	
	Reuse	0	kg		
Recovery	Recycling	0	kg		
	Landfill	0	kg		
Waste transport			100	km	
Final disposal (landfill)			0.648	kg	
Removals of biogenic carbon (excluding packaging)			0	kg CO ₂	
lication		Dense pao applicatio	ck n	Spray-applie application	

1.86E-11

2.01E-06

<1%

3.41E-03

6.09E-08

2.44E-04

100%

7.51E-01

R-value	11	13	19	22	26	30	32	38	40	44	48	49	50	60	13	21	28	13	21
Scaling factor	1.09	1.10	1.12	1.13	1.18	1.22	1.25	1.33	1.35	1.39	1.43	1.43	1.43	1.51	3.28	3.27	3.28	2.54	2.54

Mesa, AZ: LCIA resu	ults, resource	use, out	put and w	aste flov	vs, and ca	rbon em	ission	s & r	emovals	per fı	Inctional	unit
Parameter	Unit	A1	A2	A3	Α4	A5	B1-B7	C1	C2	СЗ	C4	Total
LCIA results (per m ²	installed inclu	uding pac	kaging, th	at gives a	n average	thermal	resista	nce o	f RSI=1m ²	²∙K/W)		
Ozone depletion	kg CFC-11 eq	6.01E-09	2.73E-08	2.29E-09	1.27E-08	8.70E-11	0	0	2.76E-09	0	2.74E-10	5.15E-08
Global warming	kg CO ₂ eq	8.82E-02	1.16E-01	8.33E-02	5.34E-02	7.53E-04	0	0	1.17E-02	0	1.61E-03	3.55E-01
Smog	kg O ₃ eq	1.02E-02	2.37E-03	2.80E-03	1.19E-03	2.40E-05	0	0	2.53E-04	0	4.68E-04	1.73E-02
Acidification	kg SO ₂ eq	1.07E-03	1.94E-04	3.24E-04	9.28E-05	1.93E-06	0	0	2.00E-05	0	1.55E-05	1.72E-03
Eutrophication	kg N eq	1.02E-04	4.12E-05	2.72E-05	1.93E-05	4.48E-07	0	0	4.18E-06	0	1.52E-06	1.96E-04
Carcinogenics	CTUh	2.67E-09	9.13E-11	1.62E-10	4.90E-11	2.66E-12	0	0	9.85E-12	0	4.71E-13	2.99E-09

7.49E-09

1.87E-05

21.4%

1.13E-01

5.15E-11

1.20E-06

<1%

1.03E-03

0

0

0%

0

0

0

0%

0

1.35E-09

3.52E-06

3.8%

2.45E-02

0

0

0%

0

Non-carcinogenics

Respiratory effects

Fossil fuel depletion

Ecotoxicity

Resource use indicators	i											
Renewable primary energy used as energy carrier (fuel)	MJ, LHV	5.18E-02	1.55E-03	2.33E-01	7.20E-04	6.73E-04	0	0	1.55E-04	0	3.50E-05	2.88E-01
Renewable primary resources with energy content used as material	MJ, LHV	2.00E-01	5.65E-04	2.56E-02	0	2.05E-04	0	0	0	0	0	2.27E-01
Total use of renewable primary resources with energy content	MJ, LHV	2.52E-01	2.11E-03	2.58E-01	7.20E-04	8.78E-04	0	0	1.55E-04	0	3.50E-05	5.14E-01
Non-renewable primary resources used as an energy carrier (fuel)	MJ, LHV	1.98E+00	1.62E+00	1.26E+00	7.55E-01	1.22E-02	0	0	1.62E-01	0	2.23E-02	5.81E+00
Non-renewable primary resources with energy content used as material	MJ, LHV	1.75E-04	4.85E-06	2.37E-06	0	2.40E-08	0	0	0	0	0	1.82E-04
Total use of non-renewable primary resources with energy content	MJ, LHV	1.98E+00	1.62E+00	1.26E+00	7.55E-01	1.22E-02	0	0	1.62E-01	0	2.23E-02	5.81E+00
Secondary materials	kg		0	0	0	0	0	0	0	0	0	5.67E-01
Renewable secondary fuels	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0
Non-renewable secondary fuels	MJ, LHV	0	0	0	0	0	0	0	0	0	0	ο
Recovered energy	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water resources	m ³	1.79E-01	8.05E-03	4.84E-03	3.74E-03	2.98E-03	0	0	8.04E-04	0	3.92E-06	1.99E-01
Output flows and waste	category	indicators	5									
Hazardous waste disposed	kg	0	0	0	0	0	0	0	0	0	0	0
Non-hazardous waste disposed	kg	0	0	1.86E-03	0	8.50E-03	0	0	0	0	0	1.04E-02
High-level radioactive waste, conditioned, to final repository	kg	2.18E-05	5.59E-07	3.06E-06	2.60E-07	8.10E-07	0	0	5.58E-08	0	2.39E-09	2.65E-05
Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	5.09E-08	2.40E-07	3.00E-08	1.12E-07	1.17E-09	0	0	2.40E-08	0	2.52E-11	4.58E-07
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	1.78E-02	0	6.47E-03	0	0	0	0	0	2.43E-02
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0
Exported energy	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0
Carbon emissions and r	emovals											
Biogenic carbon removal from product	kg CO ₂	1.04E+00	0	5.76E-02	0	0	0	0	0	0	0	1.10E+00
Biogenic carbon emission from product	kg CO ₂	0	0	2.06E-02	0	3.69E-03	0	0	0	0	9.98E-01	1.02E+00
Biogenic carbon removal from packaging	kg CO ₂	2.54E-04	0	0	0	0	0	0	0	0	0	2.54E-04
Biogenic carbon emission from packaging	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0

Biogenic carbon emission from combustion of waste from renewable sources used in production processes	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Calcination carbon emissions	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Carbonation carbon removals	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Carbon emissions from combustion of waste from non-renewable sources used in production processes	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0

Parameter	Unit	A1	A2	A3	Α4	A5	B1-B7	C1	C2	C3	C4	Total
CIA results (per m^2 inc	tallod inclu	uding pac	kaging th	at divos a	n avorado	thormal	rosista		f DSI-1m ²	2. K /\\/\		Total
			kaging, u	at gives a	an average		resista	nce o		• k / vv)	2745 42	
Ozone depletion	kg CFC-11 eq	6.01E-09	2.36E-08	3.16E-09	6 80E-02	8.62E-11	0	0	2.76E-09	0	2.74E-10	5.15E-08
Smog	kg CO_2 eq	1.02E-02	3.36F-03	4.35E-03	1.52E-03	2.38E-05	0	0	2.53E-04	0	4.68F-04	1.73E-02
Acidification	kg SO ₂ eq	1.07E-03	2.10E-04	5.13E-04	1.18E-04	1.91E-06	0	0	2.00E-05	0	1.55E-05	1.72E-03
Eutrophication	kg N eq	1.02E-04	3.82E-05	4.58E-05	2.46E-05	4.43E-07	0	0	4.18E-06	0	1.52E-06	1.96E-04
Carcinogenics	CTUh	2.67E-09	8.27E-11	2.61E-10	6.24E-11	2.64E-12	0	0	9.85E-12	0	4.71E-13	2.99E-09
Non-carcinogenics	CTUh	3.82E-08	9.40E-09	4.29E-09	9.55E-09	5.10E-11	0	0	1.35E-09	0	1.86E-11	6.09E-08
Respiratory effects	kg PM _{2.5} eq	1.69E-04	2.98E-05	2.94E-05	2.38E-05	1.19E-06	0	0	3.52E-06	0	2.01E-06	2.44E-04
Ecotoxicity	CTUe	42.8%	25.1%	1.5%	26.9%	<1%	0%	0%	3.7%	0%	<1%	100%
Fossil fuel depletion	MJ surplus	2.54E-01	2.11E-01	8.96E-02	1.44E-01	1.02E-03	0	0	2.45E-02	0	3.41E-03	7.51E-01
Resource use indicators	i											
Renewable primary energy used as energy carrier (fuel)	MJ, LHV	5.18E-02	2.54E-03	2.23E-01	9.17E-04	6.80E-04	0	0	1.56E-04	0	3.54E-05	2.79E-01
Renewable primary resources with energy content used as material	MJ, LHV	2.00E-01	6.16E-04	1.86E-02	0	2.05E-04	0	0	0	0	0	2.20E-01
Total use of renewable primary resources with energy content	MJ, LHV	2.52E-01	3.16E-03	2.42E-01	9.17E-04	8.85E-04	0	0	1.56E-04	0	3.54E-05	4.99E-01
Non-renewable primary resources used as an energy carrier (fuel)	MJ, LHV	1.98E+00	1.42E+00	1.46E+00	9.62E-01	1.23E-02	0	0	1.64E-01	0	2.26E-02	6.01E+00
Non-renewable primary resources with energy content used as material	MJ, LHV	1.87E-04	1.75E-04	6.22E-06	0	2.87E-06	0	0	0	0	0	3.71E-04
Total use of non-renewable primary resources with energy content	MJ, LHV	1.98E+00	1.42E+00	1.46E+00	9.62E-01	1.23E-02	0	0	1.64E-01	0	2.26E-02	6.01E+00
Secondary materials	kg	5.83E-01	0	0	0	0	0	0	0	0	0	5.83E-01
Renewable secondary fuels	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0
Non-renewable secondary fuels	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0
Recovered energy	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water resources	m ³	1.79E-01	1.27E-02	6.09E-03	4.77E-03	2.98E-03	0	0	8.04E-04	0	3.92E-06	2.06E-01
Output flows and waste	category	indicators	5									
Hazardous waste disposed	kg	0	0	0	0	0	0	0	0	0	0	0
Non-hazardous waste disposed	kg	0	0	1.86E-03	0	8.50E-03	0	0	0	0	0	1.04E-02
High-level radioactive waste, conditioned, to final repository	kg	2.20E-05	1.14E-06	3.33E-06	3.34E-07	8.10E-07	0	0	5.58E-08	0	2.39E-09	2.77E-05
Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	5.14E-08	2.12E-07	3.30E-08	1.44E-07	1.17E-09	0	0	2.40E-08	0	2.52E-11	4.65E-07
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	3.34E-02	0	6.47E-03	0	0	0	0	0	3.98E-02
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0
Exported energy	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0
Carbon emissions and r	emovals											
Biogenic carbon removal from product	kg CO ₂	1.07E+00	0	5.76E-02	0	0	0	0	0	0	0	1.13E+00
Biogenic carbon emission from product	kg CO ₂	0	0	3.85E-02	0	3.69E-03	0	0	0	0	9.98E-01	1.04E+00
Biogenic carbon removal from packaging	kg CO ₂	2.54E-04	0	0	0	0	0	0	0	0	0	2.54E-04
Biogenic carbon emission from packaging	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Biogenic carbon emission from combustion of waste from renewable sources used in production processes	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Calcination carbon emissions	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Carbonation carbon removals	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Carbon emissions from combustion of waste from non-renewable sources used in production processes	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0

Salt Lake City, UT: LCIA results, resource use, output & waste flows, & carbon emissions & removals per functional unit

| Parameter | Unit
 | A1 | A2
 | A3
 | A4 | A5
 | B1-B7 | CI
 | C2 | 05
 | C4 | Total |
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LCIA results (per m ² ins	talled inclu
 | uding pac | kaging, th
 | at gives a
 | an average | thermal
 | resista | ince o
 | f RSI=1m ² | ·K/W)
 | | |
| Ozone depletion
Global warming | kg CFC-11 eq
 | 6.01E-09
8.82E-02 | 8.06E-09
3.44E-02
 | 1.46E-09
5.28E-02
 | 2.43E-08
1.02E-01 | 8.62E-11
7.46E-04
 | 0
0 | 0
 | 2.73E-09
1.15E-02 | 0
 | 2.72E-10
1.59E-03 | 4.30E-08
2.91E-01 |
| Smog | kg O ₃ eq
 | 1.02E-02 | 1.24E-03
 | 1.79E-03
 | 2.28E-03 | 2.38E-05
 | 0 | 0
 | 2.50E-04 | 0
 | 4.63E-04 | 1.62E-02 |
| Eutrophication | kg N eq
 | 1.02E-04 | 1.32E-05
 | 1.72E-05
 | 3.70E-05 | 4.43E-07
 | 0 | 0
 | 4.14E-06 | 0
 | 1.50E-06 | 1.76E-04 |
| Carcinogenics
Non-carcinogenics | CTUh
CTUh
 | 2.67E-09
3.82E-08 | 3.24E-11
4.65E-09
 | 1.05E-10
1.74E-09
 | 9.37E-11
1.43E-08 | 2.64E-12
5.10E-11
 | 0 | 0
 | 9.75E-12
1.34E-09 | 0
 | 4.67E-13
1.85E-11 | 2.91E-09
6.03E-08 |
| Respiratory effects Ecotoxicity | kg PM _{2.5} eq
CTUe
 | 1.69E-04
42.5% | 1.31E-05
12.9%
 | 1.26E-05
<1%
 | 3.58E-05
40.2% | 1.19E-06
<1%
 | 0
0% | 0
0%
 | 3.49E-06
3.7%% | 0
0%
 | 1.99E-06
< 1 % | 2.37E-04
100% |
| Fossil fuel depletion | MJ surplus
 | 2.54E-01 | 7.23E-02
 | 7.32E-02
 | 2.16E-01 | 1.02E-03
 | 0 | 0
 | 2.43E-02 | 0
 | 3.38E-03 | 6.45E-01 |
| Renewable primary energy |
 | |
 |
 | |
 | | _
 | | -
 | | |
| used as energy carrier (fuel) | MJ, LHV
 | 5.18E-02 | 9.07E-04
 | 1.46E-01
 | 1.38E-03 | 6.80E-04
 | 0 | 0
 | 1.56E-04 | 0
 | 3.54E-05 | 2.01E-01 |
| Renewable primary
resources with energy
content used as material | MJ, LHV
 | 2.00E-01 | 2.14E-04
 | 1.60E-02
 | 0 | 2.05E-04
 | 0 | 0
 | 0 | 0
 | 0 | 2.17E-01 |
| Total use of renewable
primary resources with
energy content | MJ, LHV
 | 2.52E-01 | 1.12E-03
 | 1.62E-01
 | 1.38E-03 | 8.85E-04
 | 0 | 0
 | 1.56E-04 | 0
 | 3.54E-05 | 4.17E-01 |
| Non-renewable primary |
 | 1005-00 |
 | 0.125 01
 | 1.445+00 | 1 225 02
 | 0 | 0
 | 1045.01 | 0
 | 2 265 02 | 4.025100 |
| carrier (fuel) | MJ, LHV
 | 1.98E+00 | 4.85E-01
 | 8.12E-01
 | 1.44E+00 | 1.23E-02
 | 0 | 0
 | 1.64E-01 | 0
 | 2.26E-02 | 4.92E+00 |
| Non-renewable primary
resources with energy
content used as material | MJ, LHV
 | 1.75E-04 | 2.19E-06
 | 2.36E-06
 | 0 | 2.42E-08
 | 0 | 0
 | 0 | 0
 | 0 | 1.79E-04 |
| Total use of non-renewable
primary resources with
energy content | MJ, LHV
 | 1.98E+00 | 4.85E-01
 | 8.12E-01
 | 1.44E+00 | 1.23E-02
 | 0 | 0
 | 1.64E-01 | 0
 | 2.26E-02 | 4.92E+00 |
| Secondary materials | kg
 | 5.64E-01 | 0
 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 5.64E-01 |
| Renewable secondary fuels | MJ, LHV
 | 0 | 0
 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0 |
| Non-renewable secondary fuels | MJ, LHV
 | 0 | 0
 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0 |
| Recovered energy | MJ, LHV
 | 0 | 0
 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0 |
| Use of net fresh water resources | m ³
 | 1.79E-01 | 4.53E-03
 | 4.23E-03
 | 7.16E-03 | 2.98E-03
 | 0 | 0
 | 8.04E-04 | 0
 | 3.92E-06 | 1.99E-01 |
| Output flows and waste | e category
 | indicators | 5
 |
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 | | |
| Hazardous waste disposed | kg
 | 0 | 0
 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0 |
| Non-hazardous waste
disposed | kg
 | 0 | 0
 | 1.86E-03
 | 0 | 8.50E-03
 | 0 | 0
 | 0 | 0
 | 0 | 1.04E-02 |
| High-level radioactive waste, | ka
 | 2 18E-05 | 4 04F-07
 | 2 07E-06
 | 4 97F-07 | 810F-07
 | 0 | 0
 | 5 58F-08 | 0
 | 2 39F-09 | 2 56F-05 |
| Intermediate | 5
 | |
 |
 | |
 | |
 | |
 | | |
| intermediate- and low-level
radioactive waste,
conditioned, to final
repository | kg
 | 5.09E-08 | 7.16E-08
 | 1.91E-08
 | 2.14E-07 | 1.17E-09
 | 0 | 0
 | 2.40E-08 | 0
 | 2.52E-11 | 3.81E-07 |
| Components for re-use | kg
 | 0 | 0
 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0 |
| Materials for recycling | kg
 | 0 | 0
 | 1.49E-02
 | 0 | 6.47E-03
 | 0 | 0
 | 0 | 0
 | 0 | 2.14E-02 |
| Materials for energy recovery | kg
 | 0 | 0
 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0 |
| Exported energy | MJ, LHV
 | 0 | 0
 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0 |
| Carbon emissions and r | emovals
 | |
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 | |
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 | | |
| Biogenic carbon removal
from product | kg CO ₂
 | 1.04E+00 | 0
 | 5.76E-02
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 1.10E+00 |
| Biogenic carbon emission
from product | kg CO ₂
 | 0 | 0
 | 1.72E-02
 | 0 | 3.69E-03
 | 0 | 0
 | 0 | 0
 | 9.98E-01 | 1.02E+00 |
| Biogenic carbon removal
from packaging | kg CO ₂
 | 2.54E-04 | 0
 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 2.54E-04 |
| Biogenic carbon emission
from packaging | kg CO ₂
 | 0 | 0
 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0 |
| Biogenic carbon emission |
 | |
 |
 | |
 | |
 | |
 | | |
| from renewable sources used
in production processes | kg CO ₂
 | 0 | 0
 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0 |
| Calcination carbon emissions | kg CO ₂
 | 0 | 0
 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0 |
| Carbonation carbon removals | kg CO ₂
 | 0 | 0
 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0 |
| Carbon emissions from
combustion of waste from
non-renewable sources used
in production processes | kg CO ₂
 | 0 | 0
 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0
 | 0 | 0 |
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| ımpa, FL: LCIA results | , resource
 | e use, ou | tput and v
 | waste flo
 | ws, and c | arbon en
 | nissio | ns & r
 | emovals | per f
 | unctional | unit |
| Parameter | , resource
Unit
 | e use, ou
A1 | tput and v
 | A3
 | ws, and c | arbon en
A5
 | nissioi
B1-B7 | ns & r
c1
 | c2 | per f
 | unctional
c4 | l unit
_{Total} |
| ampa, FL: LCIA results
Parameter
-CIA results (per m ² inst
Ozone depletion | Unit
Unit
CFC-11 eq
 | e use, ou
A1
Jding pacl | A2
Kaging, the
1.17E-08
 | A3
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at gives a
2.36E-09
 | ws, and ca
A4
In average | arbon en
A5
thermal 1
8.70E-11
 | B1-B7
resista | ns & r
c1
nce of
 | c2
f RSI=1m²
2.76E-09 | per fo
c3
K/W)
 | c4
2.74E-10 | Total
3.98E-08 |
| Ampa, FL: LCIA results
Parameter
LCIA results (per m ² inst
Ozone depletion
Global warming | talled inclu
 | e use, ou
A1
Jding pack
6.01E-09
8.82E-02
1.02E-02 | A2
A2
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 | A3
A3
at gives a
2.36E-09
1.16E-01
2.43E-03
 | A4
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A4
A4
A4 | arbon en
A5
thermal 1
8.70E-11
7.53E-04
2.40E-05
 | nission
B1-B7
resista
0
0 | ns & r
c1
nce of
0
0
 | c2
f RSI=1m²
2.76E-09
1.17E-02
2.53E-04 | per f
c3
K/W)
0
0
 | 2.74E-10
1.61E-03
4.68E-04 | Unit
Total
3.98E-08
3.37E-01
1.60E-02 |
| Ampa, FL: LCIA results
Parameter
.CIA results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification | kg CFC-11 eq
kg CQ2 eq
kg O3 eq
kg SQ2 eq
 | E USE, OU
A1
Jding pack
6.01E-09
8.82E-02
1.02E-02
1.02E-02
1.07E-03
1.02E-04 | A2
A2
A2
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1.93E-06
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nce of
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f RSI=1m²
2.76E-09
1.17E-02
2.53E-04
2.00E-05
418E-06 | per f
c3
K/W)
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 | 2.74E-10
1.61E-03
4.68E-04
1.55E-05
1.52E-06 | Unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04 |
| Ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics | kg CFC-11 eq
kg CG2 eq
kg O3 eq
kg SO2 eq
kg N eq
CTUh
 | E USE, OU
A1
Jding pack
6.01E-09
8.82E-02
1.02E-02
1.02E-02
1.02E-04
2.67E-09 | A2
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At gives a
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1.16E-01
2.43E-03
2.32E-04
1.75E-05
1.07E-10
2.07E-00
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7.53E-04
2.40E-05
1.93E-06
4.48E-07
2.66E-12
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c2
f RSI=1m²
2.76E-09
1.17E-02
2.53E-04
2.00E-05
4.18E-06
9.85E-12 | per f
c3
K/W)
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 | 2.74E-10
1.61E-03
4.68E-04
1.55E-05
1.52E-06
4.71E-13
1.86E 11 | Unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09 |
| Ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects | kg CFC-11 eq
kg CO2 eq
kg CO2 eq
kg SO2 eq
kg SO2 eq
cTUh
CTUh
kg PM25 eq
 | E USE, OU
A1
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A | A2
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A3
A1 gives a
2.36E-09
1.16E-01
2.43E-03
2.32E-04
1.75E-05
1.07E-10
2.07E-09
1.52E-05
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A6 -08
6 -97E-02
1 .55E-03
1 .21E-04
2 .52E-05
6 .39E-11
9 .78E-09
2 .44E-05 | A5
thermal 1
8.70E-11
7.53E-04
2.40E-05
1.93E-06
4.48E-07
2.66E-12
5.15E-11
1.20E-06
 | B1-B7
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c2
fRSI=1m ²
2.76E-09
1.17E-02
2.53E-04
2.00E-05
4.18E-06
9.85E-12
1.35E-09
3.52E-06 | per f
c3
k/w)
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 | 2.74E-10
1.61E-03
4.68E-04
1.55E-05
1.52E-06
4.71E-13
1.86E-11
2.01E-06 | Unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
5.83E-08
2.32E-04 |
| Arameter
CIA results (per m ² inst
Cia results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion | kg CFC-11 eq
kg CFC-11 eq
kg CO2 eq
kg SO2 eq
kg SO2 eq
cTUh
CTUh
kg PM2.5 eq
CTUe
MJ surplus
 | A1
A1
A1
A1
A1
A1
A1
A1
A1
A1 | A2 A2 A3 A4
 | A3
A3
A1 gives a
2.36E-09
1.16E-01
2.43E-03
2.32E-04
1.75E-05
1.07E-10
2.07E-09
1.52E-05
<1%
2.45E-01
 | A4
A4
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A | A5
thermal 1
8.70E-11
7.53E-04
2.40E-05
1.93E-06
4.48E-07
2.66E-12
5.15E-11
1.20E-06
 | B1-B7
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0 | 2.74E-10
1.61E-03
4.68E-04
1.55E-05
1.52E-06
4.71E-13
1.86E-11
2.01E-06
<1%
3.41E-03
 | Unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
5.83E-08
2.32E-04
100%
7.79E-01 |
| Arameter
CIA results (per m ² inst
CIA results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Resource use indicators | kg CFC-11 eq
kg CFC-11 eq
kg CO2 eq
kg O3 eq
kg SO2 eq
kg N eq
CTUh
CTUh
kg PM2.5 eq
CTUe
MJ surplus
 | e use, out
A1
ding pack
6.01E-09
8.82E-02
1.02E-02
1.07E-03
1.02E-04
2.67E-09
3.82E-08
1.69E-04
45.3%
2.54E-01 | A2 A2 A3 A117E-08 A.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01
 | A3
A3
A1 gives a
2.36E-09
1.16E-01
2.43E-03
2.32E-04
1.75E-05
1.07E-10
2.07E-09
1.52E-05
<1%
2.45E-01
 | A4
A4
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A6 .97 E .02
A1 .21 E .04
A2 .52 E .05
6 .39 E -11
9 .78 E .09
2 .44 E .05
2 9.2%
1 .48 E .01 | A5
thermal 1
8.70E-11
7.53E-04
2.40E-05
1.93E-06
4.48E-07
2.66E-12
5.15E-11
1.20E-06
<1%
1.03E-03
 | B1-B7
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C2
RSI=1m ²
2.76E-09
1.17E-02
2.53E-04
2.00E-05
4.18E-06
9.85E-12
1.35E-09
3.52E-06
4.0%
2.45E-02 | per f
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 | 2.74E-10
1.61E-03
4.68E-04
1.55E-05
1.52E-06
4.71E-13
1.86E-11
2.01E-06
<1%
3.41E-03 | Unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
5.83E-08
2.32E-04
100%
7.79E-01 |
| Arameter
Parameter
CIA results (per m ² inst
CIA results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Resource use indicators
Renewable primary energy
used as energy carrier (fuel) | Lunit
Unit
Unit
Unit
Unit
Unit
Unit
Unit
U
 | e use, out
A1
 | A2 A2 A3 A4
 | A3
A3
A3
A3
A3
A3
A3
A3
A3
A3
 | A4
A4
A4
A4
A
A
A
A
A
A
A
A
A
A
A
A
A | A5
thermal 1
8.70E-11
7.53E-04
2.40E-05
1.93E-06
4.48E-07
2.66E-12
5.15E-11
1.20E-06
<1%
1.03E-03
6.80E-04
 | B1-B7
Cesista
0
0
0
0
0
0
0
0
0
0
0
0
0 | ns & r
c1
nce of
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
 | emovals
C2
C2
C2
C2
C2
C2
C2
C2
C2
C2 | per f
c3
k/w)
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0 | 2.74E-10
1.61E-03
4.68E-04
1.55E-05
1.52E-06
4.71E-13
1.86E-11
2.01E-06
<1%
3.41E-03
 | unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
5.83E-08
2.32E-04
100%
7.79E-01 |
| Ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Resource use indicators
Resource use indicators
Renewable primary energy
used as energy carrier (fuel) | kg CFC-11 eq
kg CO2 eq
kg CO2 eq
kg SO2 eq
kg SO2 eq
kg N eq
CTUh
CTUh
kg PM2.5 eq
CTUe
MJ surplus
 | e use, out
A1
A1
Ading pack
6.01E-09
8.82E-02
1.02E-02
1.02E-04
2.67E-09
3.82E-08
1.69E-04
45.3%
2.54E-01
5.18E-02
2.00E-01 | A2 A2 A2 A3 A490E-03 A49E-11 A49E-11 A49E-01 A4
 | A3
A3
A3
A1 gives a
2.36E-09
1.16E-01
2.43E-03
2.32E-04
1.75E-05
1.07E-10
2.07E-09
1.52E-05
<1%
2.45E-01
1.19E-02
4.68E-02
 | A4
A4
A4
A4
A
A
A
A
A
A
A
A
A
A
A
A
A | A5
thermal 1
8.70E-11
7.53E-04
2.40E-05
1.93E-06
4.48E-07
2.66E-12
5.15E-11
1.20E-06
<1%
1.03E-03
6.80E-04
2.05E-04
 | B1-B7
Cesista
0
0
0
0
0
0
0
0
0
0
0
0
0 | ns & r
c1
nce of
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
 | emovals
C2
FRSI=1m ²
2.76E-09
1.17E-02
2.53E-04
2.00E-05
4.18E-06
9.85E-12
1.35E-09
3.52E-06
4.0%
2.45E-02
1.56E-04 | per f
c3
k/w)
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0 | 2.74E-10
1.61E-03
4.68E-04
1.55E-05
1.52E-06
4.71E-13
1.86E-11
2.01E-06
<1%
3.41E-03
3.54E-05
 | unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
5.83E-08
2.32E-04
100%
7.79E-01
6.61E-02 |
| Arameter
CIA results (per m ² inst
CIA results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Resource use indicators
Renewable primary energy
used as energy carrier (fuel)
Renewable primary
resources with energy
content used as material | kg CFC-11 eq
kg CO2 eq
kg CO2 eq
kg SO2 eq
kg SO2 eq
kg N eq
CTUh
CTUh
Kg PM2.5 eq
CTUe
MJ surplus
 | A1 A2.67E-03 A5.3% A2.54E-01 A5.18E-02 A0.00E-01 | A2 A2 kaging, the 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 2.41E-04
 | A3
A3
A3
A1 gives a
2.36E-09
1.16E-01
2.43E-03
2.32E-04
1.75E-05
1.07E-10
2.07E-09
1.52E-05
<1%
2.45E-01
1.19E-02
4.68E-02
 | A4
n average
1.66E-08
6.97E-02
1.55E-03
1.21E-04
2.52E-05
6.39E-11
9.78E-09
2.44E-05
29.2%
1.48E-01
9.40E-04
0 | A5
thermal 1
8.70E-11
7.53E-04
2.40E-05
1.93E-06
4.48E-07
2.66E-12
5.15E-11
1.20E-06
<
1.03E-03
6.80E-04
2.05E-04
 | B1-B7 cesista 0 | ns & r
c1
nce of
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
 | emovals
c2
c2
c2
c76E-09
1.17E-02
2.53E-04
2.00E-05
4.18E-06
9.85E-12
1.35E-09
3.52E-06
4.0%
2.45E-02
1.56E-04 | c3 K/W) 0 |
2.74E-10
1.61E-03
4.68E-04
1.55E-05
1.52E-06
4.71E-13
1.86E-11
2.01E-06
<1%
3.41E-03
3.54E-05 | unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
5.83E-08
2.32E-04
100%
7.79E-01
6.61E-02 |
| ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Resource use indicators
Renewable primary energy
used as energy carrier (fuel)
Renewable primary resources with energy
content used as material | kg CFC-11 eq
kg CFC-11 eq
kg CO2 eq
kg CO2 eq
kg SO2 eq
kg N eq
CTUh
CTUh
kg PM2.5 eq
CTUe
MJ surplus
MJ, LHV
MJ, LHV
 | A1 A2.67E-03 A3.82E-04 A5.3% A2.60E-01 A1.69E-01 < | A2 kaging, th 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 2.41E-04 9.02E-04
 | A3
A3
A3
A3
A3
A3
A3
A3
A3
A3
 | A4
A4
A4
A4
A4
A
A4
A
A
A
A
A
A
A
A
A
A
A
A
A | A5
thermal 1
8.70E-11
7.53E-04
2.40E-05
1.93E-06
4.48E-07
2.66E-12
5.15E-11
1.20E-06
4.1%
1.03E-03
6.80E-04
2.05E-04
8.85E-04
 | B1-B7
Cesista
0
0
0
0
0
0
0
0
0
0
0
0
0 | c1 nce of 0
 | emovals
C2
C2
C3
C3
C3
C3
C3
C3
C3
C3
C3
C3 | c3 K/W) 0 | c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 1.52E-06 4.71E-13 1.86E-11 2.01E-06 3.41E-03 3.54E-05 0 3.54E-05
 | Unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
2.5.83E-08
2.32E-04
100%
7.79E-01
6.61E-02
6.61E-02
2.48E-01
3.14E-01 |
| Ampa, FL: LCIA results Parameter CIA results (per m ² inst Ozone depletion Global warming Smog Acidification Eutrophication Carcinogenics Non-carcinogenics Respiratory effects Ecotoxicity Fossil fuel depletion Resource use indicators Renewable primary energy used as energy carrier (fuel) Renewable primary resources with energy content Non-renewable primary resources used as an energy Carrier (fuel) Non-renewable primary | , resource
Unit
Unit
Unit
Unit
Unit
Unit
Unit
Unit
 | A1 A2 A5 | A2 kaging, th 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 9.02E-04 6.93E-01
 | A3
A3
A3
A3
A3
A3
A3
A3
A3
A3
 | A4
A4
A4
A
A
A
A
A
A
A
A
A
A
A
A
A | A5 thermal i 8.70E-11 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 5.15E-11 1.20E-06 <1%
 | B1-B7 Cesista 0 | c1 nce of 0
 | emovals
C2
C2
C3
C3
C3
C3
C3
C3
C3
C3
C3
C3 | c3 K/W) 0 | c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 1.52E-06 4.71E-13 1.86E-11 2.01E-06 3.41E-03 3.54E-05 0 3.54E-05 2.26E-02
 | Unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
5.83E-08
2.32E-04
100%
7.79E-01
6.61E-02
2.48E-01
3.14E-01
3.14E-01 |
| Ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Resource use indicators
Renewable primary energy
used as energy carrier (fuel)
Renewable primary
resources with energy
content used as material
Total use of renewable
primary resources with
energy content
Non-renewable primary
resources used as an energy
carrier (fuel) | Unit Unit kg CFC-11 eq kg CPC-11 eq kg CO2 eq kg O3 eq kg N eq CTUh CTUH CTUH MJ, LHV MJ, LHV MJ, LHV MJ, LHV
 | e use, ou
A1
A1
A
A
A
A
A
A
A
A
A
A
A
A
A | A2 A2 A3 A117E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 2.41E-04 9.02E-04 6.93E-01
 | A3
A3
A3
A3
A3
A3
A3
A3
A3
A3
 | A4
A4
A4
A
A
A
A
A
A
A
A
A
A
A
A
A | A5 thermal i 8.70E-11 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 5.15E-11 1.20E-06 <1%
 | B1-B7 0 | c1 nce of 0
 | emovals
C2
FRSI=1m ² -
2.76E-09
1.17E-02
2.53E-04
2.00E-05
4.18E-06
9.85E-12
1.35E-09
3.52E-06
4.0%
2.45E-02
1.56E-04
1.56E-04
1.56E-04 | c3 k/w) 0
 | c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 1.52E-06 4.71E-13 1.86E-11 2.01E-06 <1% | unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
5.83E-08
2.32E-04
100%
7.79E-01
6.61E-02
2.48E-01
3.14E-01
3.14E-01 |
| Ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Resource use indicators
Renewable primary energy
used as energy carrier (fuel)
Renewable primary energy
content used as material
Total use of renewable
primary resources with
energy content | Unit Unit kg CFC-11 eq kg CPC-11 eq kg CO2 eq kg SO2 eq kg PM2.5 eq CTUH CTUH Kg PM2.5 eq MJ, LHV
 | e use, ou
A1
A1
A1
A
C
C
C
C
C
C
C
C
C
C
C
C
C | A2 A2 A3 A4 A5 A6 A6 A6 A6
 | A3
A3
A3
A3
A3
A3
A3
A3
A3
A3
 | A4
A4
A4
A
A
A
A
A
A
A
A
A
A
A
A
A | A5 khermal I 8.70E-11 2.40E-05 1.93E-06 4.48E-07 2.66E-12 5.15E-11 1.20E-06 4.385E-04 2.05E-04 8.85E-04 1.23E-02 2.42E-08
 | B1-B7 0 | c1 nce of 0
 | emovals
C2
FRSI=1m ² -
2.76E-09
1.17E-02
2.53E-04
2.00E-05
4.18E-06
9.85E-12
1.35E-09
3.52E-06
4.0%
2.45E-02
1.56E-04
1.56E-04
1.56E-04
1.56E-04
1.56E-04 | c3 k/w) 0 | c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.718-13 3.41E-03 3.54E-05 0 2.26E-02 0
 | unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
5.83E-08
2.32E-04
3.14E-01
3.14E-01
3.14E-01
5.83E+00
1.79E-04 |
| Ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Resource use indicators
Renewable primary energy
used as energy carrier (fuel)
Renewable primary energy
content used as material
Total use of renewable
primary resources with
energy content
Non-renewable primary
resources with energy
carrier (fuel) | I Unit Unit Unit Lunit Unit Lunit Unit kg CFC-11 eq Kg CFC-11 eq kg CO2 eq Kg SO2 eq kg N eq CTUh CTUh CTUh CTUh CTUH MJ, LHV MJ, LHV MJ, LHV MJ MJ MJ< | A1 A
 | A2 A2 (A3) (A4)
 | A3
A3
2.36E-09
1.16E-01
2.43E-03
2.32E-04
1.75E-05
1.07E-10
2.07E-09
1.52E-05
<1%
2.45E-01
4.68E-02
4.68E-02
1.98E+00
2.38E-06
1.98E+00 | A4
A4
1.66E-08
6.97E-02
1.55E-03
1.21E-04
2.52E-05
6.39E-11
9.78E-09
2.44E-05
29.2%
1.48E-01
9.40E-04
9.40E-04
9.86E-01
 | A5 khermal I 8.70E-11 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 5.15E-11 1.20E-06 <1/03E-03
 | B1-B7 0 | c1 nce of 0 | emovals
c2
2.76E-09
1.17E-02
2.53E-04
2.00E-05
4.18E-06
9.85E-12
1.35E-09
3.52E-06
4.0%
2.45E-02
1.56E-04
1.56E-04
1.56E-04
1.56E-04
1.64E-01
1.64E-01
 | c3 K/W) 0 | c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.718-13 3.41E-03 3.54E-05 0 3.54E-05 2.26E-02 0 2.26E-02
 | unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
5.83E-08
2.32E-04
100%
7.79E-01
6.61E-02
3.14E-01
3.14E-01
5.83E+00 |
| Ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
Cozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Resource use indicators
Renewable primary energy
used as energy carrier (fuel)
Renewable primary energy
content used as material
Total use of renewable
primary resources with
energy content
Non-renewable primary
resources used as an energy
carrier (fuel)
Non-renewable primary
resources with energy
content used as material | I Unit Unit Unit kg CFC-11 eq kg CPC-11 eq kg CPC-11 eq kg CPC-11 eq kg CPC-11 eq kg CPC-11 eq kg SO2 eq E kg N eq CTUh CTUh CTUD MJ, LHV E MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV E MJ H </td <td> A1 A</td> <td>A2 A2 A3 A3 A3 A90E-02 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 9.02E-04 6.93E-01 2.07E-06 0.93E-01</td> <td>A3
A3
2.36E-09
1.16E-01
2.43E-03
2.32E-04
1.75E-05
1.07E-10
2.07E-09
1.52E-05
3.2.45E-01
4.68E-02
5.87E-02
1.98E+00
2.38E-06
1.98E+00</td> <td>A4
A4
1.66E-08
6.97E-02
1.55E-03
1.21E-04
2.52E-05
6.39E-11
9.78E-09
2.44E-05
29.2%
1.48E-01
9.40E-04
9.40E-04
9.86E-01
0
9.86E-01
0</td> <td>A5 Khermal I 8.70E-11 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 5.15E-11 1.20E-06 4.48E-07 2.66E-12 1.03E-03 6.80E-04 6.80E-04 1.23E-02 1.23E-02 1.23E-02 0</td> <td>B1-B7 0</td> <td>c1 nce 0 1 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>emovals
c2
FRSI=1m²-
2.76E-09
1.17E-02
2.53E-04
2.00E-05
4.18E-06
9.85E-12
1.35E-09
3.52E-06
4.0%
2.45E-02
1.56E-04
1.56E-04
1.56E-04
1.56E-04
1.56E-04
1.56E-04
1.56E-04
1.56E-04
1.56E-04</td> <td>c3 K/W) 0</td> <td>c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.71E-03 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0</td> <td>Unit
Total
Total
3.398E-08
3.37E-01
1.60E-02
1.55E-03
2.32E-04
2.32E-04
100%
3.14E-01
3.14E-01
3.14E-01
5.83E+00
1.79E-04
3.33E+00</td> | A1 A
 | A2 A2 A3 A3 A3 A90E-02 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 9.02E-04 6.93E-01 2.07E-06 0.93E-01
 | A3
A3
2.36E-09
1.16E-01
2.43E-03
2.32E-04
1.75E-05
1.07E-10
2.07E-09
1.52E-05
3.2.45E-01
4.68E-02
5.87E-02
1.98E+00
2.38E-06
1.98E+00 | A4
A4
1.66E-08
6.97E-02
1.55E-03
1.21E-04
2.52E-05
6.39E-11
9.78E-09
2.44E-05
29.2%
1.48E-01
9.40E-04
9.40E-04
9.86E-01
0
9.86E-01
0
 | A5 Khermal I 8.70E-11 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 5.15E-11 1.20E-06 4.48E-07 2.66E-12 1.03E-03 6.80E-04 6.80E-04 1.23E-02 1.23E-02 1.23E-02 0
 | B1-B7 0 | c1 nce 0 1 0 0 0 0 0 0 0 0 0 0 0 0 | emovals
c2
FRSI=1m ² -
2.76E-09
1.17E-02
2.53E-04
2.00E-05
4.18E-06
9.85E-12
1.35E-09
3.52E-06
4.0%
2.45E-02
1.56E-04
1.56E-04
1.56E-04
1.56E-04
1.56E-04
1.56E-04
1.56E-04
1.56E-04
1.56E-04
 | c3 K/W) 0 | c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.71E-03 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0
 | Unit
Total
Total
3.398E-08
3.37E-01
1.60E-02
1.55E-03
2.32E-04
2.32E-04
100%
3.14E-01
3.14E-01
3.14E-01
5.83E+00
1.79E-04
3.33E+00 |
| Ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Resource use indicators
Renewable primary energy
used as energy carrier (fuel)
Renewable primary resources with energy
content used as material
Total use of renewable
primary resources with energy
content used as an energy
content used as material
Non-renewable primary
resources with energy
content used as material
Non-renewable primary
resources with energy
content used as an energy
content used as material
Non-renewable primary
resources with energy
content used as material
Renewable primary
Renewable primary
resources with energy
content used as material | Unit Unit kg CFC-11 eq kg CFC-11 eq kg CQ2 eq kg N eq CTUh CTUh CTUH MJ, LHV Kg MJ, LHV Kg MJ, LHV Kg MJ, LHV | A1 <
 | A2 kaging, th 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 9.02E-04 6.93E-01 2.07E-06 0 0
 | A3
A3
2.36E-09
1.16E-01
2.43E-03
2.32E-04
1.75E-05
1.07E-10
2.07E-09
1.52E-05
4.68E-02
4.68E-02
1.98E+00
2.38E-06
1.98E+00
0 | A4
A4
1.66E-08
6.97E-02
1.55E-03
1.21E-04
2.52E-05
6.39E-11
9.78E-09
2.44E-05
29.2%
1.48E-01
9.40E-04
9.40E-04
0
9.86E-01
0
0
0
 | A5 khermal i 8.70E-11 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 5.15E-11 1.20E-06 1.03E-03 6.80E-04 1.03E-03 1.23E-02 1.23E-02 1.23E-02 0 0
 | B1-B7 0 | c1 nce of 0 | c2 c2 c2 c3 c3 <td>c3 k/w) 0</td> <td>c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.71E-03 3.41E-03 3.54E-05 2.26E-02 0 2.26E-02 0</td> <td>unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
5.83E-04
2.32E-04
100%
7.79E-01
6.61E-02
3.14E-01
3.14E-01
5.83E+00
1.79E-04
5.83E+00</td>
 | c3 k/w) 0 | c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.71E-03 3.41E-03 3.54E-05 2.26E-02 0 2.26E-02 0
 | unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
5.83E-04
2.32E-04
100%
7.79E-01
6.61E-02
3.14E-01
3.14E-01
5.83E+00
1.79E-04
5.83E+00 |
| Ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
Coone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Resource use indicators
Renewable primary energy
content used as material
Total use of renewable
primary resources with
energy content
Non-renewable primary
resources used as an energy
carrier (fuel)
Non-renewable primary
resources with energy
content used as material
Content | Unit Unit kg CFC-11 eq kg CFC-11 eq kg CPC-2 eq kg O_2 eq kg N eq CTUh Kg PM2.5 eq MJ, LHV Kg MJ, LHV Kg MJ, LHV Kg MJ, LHV Kg Kg Kg Kg Kg Kg Kg Kg K | A1 <
 | A2 1.17E-08 1.17E-08 1.09E-03 8.51E-05 1.77E-05 4.49E-111 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 9.02E-04 6.93E-01 6.93E-01 0 0 0 0 0 0 0 0 0 0 0 0 0
 | A3
A3
2.36E-09
1.16E-01
2.43E-03
2.32E-04
1.75E-05
1.07E-10
2.07E-09
1.52E-01
4.68E-02
4.68E-02
1.98E+00
1.98E+00
1.98E+00
0
0 | A4
A4
1.66E-08
1.66E-08
1.55E-03
1.21E-04
2.52E-05
6.39E-11
9.78E-09
2.44E-05
4.29.2%
1.48E-01
3.40E-04
3.40E-04
3.40E-04
3.40E-04
3.40E-01
3.40E-01
3.40E-01
3.40E-01
3.40E-01
3.40E-01
3.40E-01
3.40E-01
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3.40E-01
3.40E-01
3.40E-01
3.40E-01
3.40E-01
3.40E-01
3.40E-01
3.40E-01
3.40E-01
3.40E-01
3.40E-01
 | A5 khermal i 8.70E-11 2.40E-05 1.93E-06 4.48E-07 2.66E-12 1.20E-06 1.20E-06 1.03E-03 6.80E-04 1.23E-02 1.23E-02 1.23E-02 0 0 0 0 0 0
 | B1-B7 0 | c1 nce of 0 | c2 c2 c2 c3 c4 c3 c4 c3 c3 c4 c3 c3 c4 c3 c4 c3 c4 c4 c4 c3 c4 c4 c5 c4
 | c3 k/w) 0 | c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 4.71E-13 2.01E-06 4.71E-03 3.41E-03 3.54E-05 2.26E-02 0 | Unit
Total
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
2.90E-09
2.32E-04
2.32E-04
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01
5.83E+00
1.79E-04
5.83E+00
 |
| Ampa, FL: LCIA results Parameter CIA results (per m ² inst CIA results (per m ² inst Core depletion Global warming Smog Acidification Eutrophication Carcinogenics Non-carcinogenics Respiratory effects Ecotoxicity Fossil fuel depletion Resource use indicators Renewable primary energy content used as material Total use of renewable primary resources with energy content Non-renewable primary resources used as an energy carrier (fuel) Non-renewable primary resources with energy content used as material Cotal use of non-renewable primary resources with energy content Secondary materials Renewable secondary fuels Renewable secondary fuels Recovered energy | I Unit Unit Unit kg CFC-11 eq kg CPC-11 eq kg CPC-11 eq kg CPC-11 eq kg CPC-11 eq Kg CPC-11 eq kg O_2 eq Kg kg PM2.5 eq CTUE MJ, LHV MJ, LHV MJ, LHV MJ | A1 A2 A2 A2 A2 A2 A2 A3 A2 A3 A3 A4 A3 A4 <
 | A2 1.17E-08 1.17E-03 1.09E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 9.02E-04 6.93E-01 6.93E-01 0 0 0 0 0 0 0 0 0 </td <td>A3
A3
2.36E-09
1.16E-01
2.43E-03
2.32E-04
1.75E-05
1.07E-10
2.07E-09
1.52E-05
4.68E-02
4.68E-02
1.98E+00
2.38E-06
1.98E+00
0
0
0
0
0</td> <td>A4
A4
1.66E-08
6.97E-02
1.55E-03
1.21E-04
2.52E-05
6.39E-11
9.78E-09
2.44E-05
29.2%
1.48E-01
9.40E-04
9.40E-04
0
9.86E-01
0
0
0
0
0
0
0
0
0
0
0
0
0</td> <td>A5 8.70E-11 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 1.93E-06 4.48E-07 2.66E-12 5.15E-11 1.20E-06 4.385E-04 1.03E-03 1.23E-02 1.23E-02 0 0.32E-02 0 0.32E-02</td> <td>B1-B7 0</td> <td>c1 nce of 0</td> <td>c2 c2 c2 c3 c4 c3 c3 c3 c4 c3 c3 c3 c3 c4 c3 c3 c4 c3 c4 c3 c4 c4 c5</td> <td>c3 K/W) 0</td> <td>c4 2.74E-10 1.61E-03 4.68E-04 1.52E-05 4.71E-13 1.86E-11 2.01E-06 4.718-13 3.54E-05 3.54E-05 2.26E-02 0 0 0 0 0 0 1.226E-02 0 1.226E-02 0 1.226E-02 0 1.226E-02 0 1.226E-02 0 1.226E-02 1.226E-02 1.226E-02 1.226E-02 1.226E-02 1.226E-02</td> <td>Unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
2.32E-04
3.14E-01
6.61E-02
6.61E-02
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01</td>
 | A3
A3
2.36E-09
1.16E-01
2.43E-03
2.32E-04
1.75E-05
1.07E-10
2.07E-09
1.52E-05
4.68E-02
4.68E-02
1.98E+00
2.38E-06
1.98E+00
0
0
0
0
0 | A4
A4
1.66E-08
6.97E-02
1.55E-03
1.21E-04
2.52E-05
6.39E-11
9.78E-09
2.44E-05
29.2%
1.48E-01
9.40E-04
9.40E-04
0
9.86E-01
0
0
0
0
0
0
0
0
0
0
0
0
0
 | A5 8.70E-11 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 1.93E-06 4.48E-07 2.66E-12 5.15E-11 1.20E-06 4.385E-04 1.03E-03 1.23E-02 1.23E-02 0 0.32E-02
 | B1-B7 0 | c1 nce of 0 | c2 c2 c2 c3 c4 c3 c3 c3 c4 c3 c3 c3 c3 c4 c3 c3 c4 c3 c4 c3 c4 c4 c5
 | c3 K/W) 0 | c4 2.74E-10 1.61E-03 4.68E-04 1.52E-05 4.71E-13 1.86E-11 2.01E-06 4.718-13 3.54E-05 3.54E-05 2.26E-02 0 0 0 0 0 0 1.226E-02 0 1.226E-02 0 1.226E-02 0 1.226E-02 0 1.226E-02 0 1.226E-02 1.226E-02 1.226E-02 1.226E-02 1.226E-02 1.226E-02 | Unit
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.90E-09
2.32E-04
3.14E-01
6.61E-02
6.61E-02
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01
 |
| Ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
CIA results (per m ² inst
Carcinogenion
Eutrophication
Eutrophication
Carcinogenics
Non-carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Renewable primary energy
content used as material
Renewable primary energy
content used as material
Non-renewable primary
resources with energy
content used as an energy
content used as material
Non-renewable primary
resources with energy
content used as material
Renewable secondary fuels
Renewable secondary fuels
Recovered energy
Use of net fresh water
resources | I Unit Unit Unit kg CFC-11 eq kg CO2 eq kg O3 eq kg SO2 eq kg N eq CTUh CTUh CTUh Kg PM2.5 eq MJ, LHV MJ, LHV MJ MJ MJ | A1 A2 A2 A2 A2 A2 A2 A3 A2 A3 A3 A3 A4 A5 A3 A2 A4 A5 A3 A2 A3 A2 A3 A4 <
 | A2 1.17E-08 1.17E-08 1.09E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 6.61E-04 9.02E-04 6.93E-01 6.93E-01 0 0.3E-01 0 0.3.44E-03
 | A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.45E-01 1.98E+00 1.98E+00 1.98E+00 0 0.125E-02 1.98E+00 1.98E+00 <td>A4 1.66E-08 6.97E-02 1.55E-03 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 29.2% 1.48E-01 9.40E-04 9.36E-01 0 9.86E-01 0 0.</td> <td>A5 8.70E-11 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 1.93E-06 4.48E-07 2.66E-12 1.20E-06 4.385E-04 1.03E-03 1.23E-02 1.23E-02 1.23E-02 0 0. 2.99E-03</td> <td>B1-B7 0</td> <td>c1 nce 0</td> <td>c2 c2 2.76E-09 1.17E-02 2.53E-04 2.53E-04 2.00E-05 4.18E-06 9.85E-12 1.35E-09 3.52E-06 4.0% 2.45E-02 1.56E-04 0 1.56E-04 0 1.64E-01 0</td> <td>c3 K/W) 0</td> <td>c4 2.74E-10 1.61E-03 1.63E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.718-13 3.54E-05 3.54E-05 2.26E-02 0 1.54E-04</td> <td>Total Total 3.98E-08 3.37E-01 1.60E-02 1.69E-04 2.90E-09 2.32E-04 100% 2.32E-04 3.14E-01 3.38E+00 5.83E+00 5.83E+00 5.83E+00 5.83E+00 0 0.314E-01</td> | A4 1.66E-08 6.97E-02 1.55E-03 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 29.2% 1.48E-01 9.40E-04 9.36E-01 0 9.86E-01 0 0.
 | A5 8.70E-11 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 1.93E-06 4.48E-07 2.66E-12 1.20E-06 4.385E-04 1.03E-03 1.23E-02 1.23E-02 1.23E-02 0 0. 2.99E-03
 | B1-B7 0 | c1 nce 0 | c2 c2 2.76E-09 1.17E-02 2.53E-04 2.53E-04 2.00E-05 4.18E-06 9.85E-12 1.35E-09 3.52E-06 4.0% 2.45E-02 1.56E-04 0 1.56E-04 0 1.64E-01 0
 | c3 K/W) 0 | c4 2.74E-10 1.61E-03 1.63E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.718-13 3.54E-05 3.54E-05 2.26E-02 0 1.54E-04 | Total Total 3.98E-08 3.37E-01 1.60E-02 1.69E-04 2.90E-09 2.32E-04 100% 2.32E-04 3.14E-01 3.38E+00 5.83E+00 5.83E+00
 5.83E+00 5.83E+00 0 0.314E-01 |
| Impa, FL: LCIA results Parameter LCIA results (per m ² inst Ozone depletion Global warming Smog Acidification Eutrophication Carcinogenics Non-carcinogenics Respiratory effects Ecotoxicity Fossil fuel depletion Renewable primary energy
content used as material Total use of renewable
primary resources with energy
content used as an energy
carrier (fuel) Non-renewable primary
resources with energy
content used as an energy
carrier (fuel) Non-renewable primary
resources with energy
content used as an energy
carrier (fuel) Non-renewable primary
resources with energy
content used as an energy
carrier (fuel) Non-renewable primary
resources with energy
content used as an energy
carrier (fuel) Non-renewable primary
resources with energy
content used as material Total use of non-renewable
primary resources with
energy content Secondary materials Renewable secondary fuels Non-renewable secondary fuels Non-renewable secondary
fuels Recovered energy Use of net fresh water Use of net fresh water | I Unit Unit Unit kg CFC-11 eq Kg CFC-11 eq kg O_2 eq Kg SO_2 eq kg N eq CTUh CTUh CTUh MJ, LHV MJ, LHV MJ, LHV MJ MJ MJ MJ MJ | A1 A2 A1 A1 A2 A2 A2 A3 A2 A3 A2 A3 A3 A4 A3 A4 A3 A4 A4 A3 A4 A4 A4
A4 A3 A4 A | A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 9.02E-04 6.93E-01 6.93E-01 0 0.344E-03
 | A3 A3 2.36E-09 1.16E-01 2.43E-03 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.45E-01 1.98E+00 1.98E+00 0 0.125E-02 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.98E+00 | A4 1.66E-08 6.97E-02 1.55E-03 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 29.2% 1.48E-01 9.40E-04 9.86E-01 0 9.86E-01 0 0.3 0.3 0.3 0.3 0.3
 | A5 8.70E-11 8.70E-11 2.40E-03 1.93E-06 4.48E-07 2.66E-12 1.93E-06 4.48E-07 2.66E-12 1.03E-03 6.80E-04 1.03E-03 6.80E-04 1.23E-02 1.23E-02 0 0.32E-02 0 2.99E-03
 | B1-B7 0 | c1 0 <t< td=""><td>c2 c2 c3 c3</td><td>c3 K/W) 0</td><td>c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.71E-03 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 1.54E-04</td><td>Unit
Total
Total
3.398E-08
3.37E-01
1.60E-02
1.69E-04
2.90E-09
2.32E-04
2.32E-04
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.33E+00
3.33E+00
3.33E+00
3.33E+00
3.33E+00
3.33E+00</td></t<> | c2 c2 c3
 | c3 K/W) 0 | c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.71E-03 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 1.54E-04
 | Unit
Total
Total
3.398E-08
3.37E-01
1.60E-02
1.69E-04
2.90E-09
2.32E-04
2.32E-04
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.33E+00
3.33E+00
3.33E+00
3.33E+00
3.33E+00
3.33E+00 |
| Ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Careinogenics
Renewable primary energy
used as energy carrier (fuel)
Renewable primary energy
content used as material
Total use of renewable
primary resources with
energy content
Non-renewable primary
resources used as an energy
carrier (fuel)
Non-renewable primary
resources with energy
content used as material
Cotal use of renewable
primary resources with
energy content
Non-renewable primary
resources used as an energy
content used as material
Non-renewable primary
content used as material
Non-renewable primary
content used as material
Cotal use of non-renewable
primary resources with
energy content
Secondary materials
Renewable secondary fuels
Non-renewable secondary fuels | I Unit Unit Unit kg CFC-11 eq Kg CFC-11 eq kg CO2 eq Kg CFC-11 eq kg O3 eq Kg CFC-11 eq kg O3 eq Kg CFC-11 eq kg O3 eq Kg CFC-11 eq kg O1 eq CTUh kg O1 eq CTUD CTUH CTUE MJ, LHV CTU Kg CTU MJ, LHV CTU Kg CTU Kg <td< td=""><td>E USE, OUI A1 A2 A1 A2 A2<td>A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 9.02E-04 6.93E-01 6.93E-01 0 0.3.44E-03 0</td><td>A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.45E-01 1.98E+00 1.98E+00 1.98E+00 0 1.25E-02 0</td><td>A4 1.66E-08 1.55E-03 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 9.78E-09 1.48E-01 9.40E-04 9.86E-01 0 0.366E-01 0 0.40E-04 0 0.366E-01 0 0.436E-01 0 0.436E-01 0 0.366E-01 0 0.366E-01 <</td><td>A5 8.70E-11 8.70E-11 2.40E-03 1.93E-06 4.48E-07 2.66E-12 1.93E-06 1.20E-06 1.03E-03 6.80E-04 1.03E-03 1.23E-02 1.23E-02 1.23E-02 0 0.30E-03 0.23E-02 1.23E-02 0 0.23E-02 0 0.23E-02 0</td><td>B1-B7 0</td><td>c1 0 <t< td=""><td>c2 c2 c3 c3</td><td>c3 c3 k/w) 0</td><td>c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.718-13 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 1.54E-04 0</td><td>Unit
Total
Total
3.98E-08
3.37E-01
1.60E-02
1.69E-04
2.90E-09
2.32E-04
3.14E-01
6.61E-02
6.61E-02
3.14E-01
3.14E-01
3.14E-01
3.33E+00
1.79E-04
3.33E+00
1.79E-04
3.33E+00
1.79E-04
3.33E+00
1.79E-04</td></t<></td></td></td<> | E USE, OUI A1 A2 A1 A2 <td>A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 9.02E-04 6.93E-01 6.93E-01 0 0.3.44E-03 0</td> <td>A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.45E-01 1.98E+00 1.98E+00 1.98E+00 0 1.25E-02 0</td> <td>A4 1.66E-08 1.55E-03 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 9.78E-09 1.48E-01 9.40E-04 9.86E-01 0 0.366E-01 0 0.40E-04 0 0.366E-01 0 0.436E-01 0 0.436E-01 0 0.366E-01 0 0.366E-01 <</td> <td>A5 8.70E-11 8.70E-11 2.40E-03 1.93E-06 4.48E-07 2.66E-12 1.93E-06 1.20E-06 1.03E-03 6.80E-04 1.03E-03 1.23E-02 1.23E-02 1.23E-02 0 0.30E-03 0.23E-02 1.23E-02 0 0.23E-02 0 0.23E-02 0</td> <td>B1-B7 0 0
 0 0</td> <td>c1 0 <t< td=""><td>c2 c2 c3 c3</td><td>c3 c3 k/w) 0</td><td>c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.718-13 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 1.54E-04 0</td><td>Unit
Total
Total
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1.60E-02
1.69E-04
2.90E-09
2.32E-04
3.14E-01
6.61E-02
6.61E-02
3.14E-01
3.14E-01
3.14E-01
3.33E+00
1.79E-04
3.33E+00
1.79E-04
3.33E+00
1.79E-04
3.33E+00
1.79E-04</td></t<></td> | A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 9.02E-04 6.93E-01 6.93E-01 0 0.3.44E-03 0
 | A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.45E-01 1.98E+00 1.98E+00 1.98E+00 0 1.25E-02 0 | A4 1.66E-08 1.55E-03 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 9.78E-09 1.48E-01 9.40E-04 9.86E-01 0 0.366E-01 0 0.40E-04 0 0.366E-01 0 0.436E-01 0 0.436E-01 0 0.366E-01 0 0.366E-01 <
 | A5 8.70E-11 8.70E-11 2.40E-03 1.93E-06 4.48E-07 2.66E-12 1.93E-06 1.20E-06 1.03E-03 6.80E-04 1.03E-03 1.23E-02 1.23E-02 1.23E-02 0 0.30E-03 0.23E-02 1.23E-02 0 0.23E-02 0 0.23E-02 0
 | B1-B7 0 | c1 0 <t< td=""><td>c2 c2 c3 c3</td><td>c3 c3 k/w) 0</td><td>c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.718-13 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 1.54E-04 0</td><td>Unit
Total
Total
3.98E-08
3.37E-01
1.60E-02
1.69E-04
2.90E-09
2.32E-04
3.14E-01
6.61E-02
6.61E-02
3.14E-01
3.14E-01
3.14E-01
3.33E+00
1.79E-04
3.33E+00
1.79E-04
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1.79E-04
3.33E+00
1.79E-04</td></t<> | c2 c2 c3
 | c3 c3 k/w) 0 | c4 2.74E-10 1.61E-03 4.68E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.718-13 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 1.54E-04 0 | Unit
Total
Total
3.98E-08
3.37E-01
1.60E-02
1.69E-04
2.90E-09
2.32E-04
3.14E-01
6.61E-02
6.61E-02
3.14E-01
3.14E-01
3.14E-01
3.33E+00
1.79E-04
3.33E+00
1.79E-04
3.33E+00
1.79E-04
3.33E+00
1.79E-04
 |
| Ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Renewable primary energy
used as energy carrier (fuel)
Renewable primary energy
resources with energy
content used as material
Total use of renewable
primary resources with
energy content
Non-renewable primary
resources used as an energy
carrier (fuel)
Non-renewable primary
resources used as an energy
carrier (fuel)
Non-renewable primary
resources with energy
content used as material
Non-renewable primary
resources with energy
content used as material
Non-renewable primary
resources used as an energy
carrier (fuel)
Non-renewable primary
resources with energy
content used as material
Non-renewable primary
resources used as an energy
carrier fuel)
Non-renewable primary
resources used as material
Cotal use of non-renewable
primary resources with
energy content
Secondary materials
Renewable secondary fuels
Non-renewable secondary fuels
Non-renewable secondary fuels
Actionary fuels
Cutput flows and waste
Hazardous waste disposed | I Unit Unit Unit kg CFC-11 eq Kg CFC-11 eq kg CPC-2 eq Kg SO2 eq kg N eq CTUh CTUh CTUA Kg PM2.5 eq CTUA MJ, LHV CTUA MJ <td< td=""><td> A1 A2 A2 A2 A2 A2 A2 A2 A3 A2 A3 A2 A3 A4 <</td><td>A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 6.61E-04 1.03E-01 6.93E-01 6.93E-01 0 3.44E-03 0</td><td>A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.43E-01 1.98E+00 1.98E+00 1.98E+00 0 1.25E-02 0 1.38E-02 1.98E+00 1.98E+00 0 1.25E-02 0 1.25E-02 0 1.25E-02 0 1.86E-03</td><td>A4 1.66E-08 6.97E-02 1.55E-03 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 29.2% 1.48E-01 9.40E-04 9.86E-01 0 9.86E-01 0 0.</td><td>A5 8.70E-11 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 1.93E-06 4.48E-07 2.66E-12 1.20E-06 4.385E-04 1.23E-02 1.23E-02 1.23E-02 0 0.23E-02 0.23E-02 0.23E-02 0.23E-02 0.23E-02 0.23E-02 0.23E-02 0.23E-02 0.23E-02 0.3<</td><td>B1-B7 0</td><td>c1 c1 nce 0</td><td>c2 c2 2.76E-09 1.77E-02 2.53E-04 2.00E-05 4.18E-06 9.85E-12 1.35E-09 3.52E-06 4.0% 2.45E-02 1.56E-04 0 1.56E-04 0 1.64E-01 0</td><td>c3 K/W/) 0</td><td>c4 2.74E-10 1.61E-03 1.61E-03 1.52E-06 4.71E-13 1.52E-06 4.71E-03 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 1.54E-04 0</td><td>Unit
Total
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.32E-04
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01
1.79E-04
3.14E-01
1.79E-04
1.232E-01
1.232E-01
0</td></td<> | A1 A2 A2 A2 A2 A2 A2 A2 A3 A2 A3 A2 A3 A4 <
 | A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 6.61E-04 1.03E-01 6.93E-01 6.93E-01 0 3.44E-03 0
 | A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.43E-01 1.98E+00 1.98E+00 1.98E+00 0 1.25E-02 0 1.38E-02 1.98E+00 1.98E+00 0 1.25E-02 0 1.25E-02 0 1.25E-02 0 1.86E-03 | A4 1.66E-08 6.97E-02 1.55E-03 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 29.2% 1.48E-01 9.40E-04 9.86E-01 0 9.86E-01 0 0.
 | A5 8.70E-11 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 1.93E-06 4.48E-07 2.66E-12 1.20E-06 4.385E-04 1.23E-02 1.23E-02 1.23E-02 0 0.23E-02 0.23E-02 0.23E-02 0.23E-02 0.23E-02 0.23E-02 0.23E-02 0.23E-02 0.23E-02 0.3<
 | B1-B7 0 | c1 c1 nce 0 | c2 c2 2.76E-09 1.77E-02 2.53E-04 2.00E-05 4.18E-06 9.85E-12 1.35E-09 3.52E-06 4.0% 2.45E-02 1.56E-04 0 1.56E-04 0 1.64E-01 0
 | c3 K/W/) 0 | c4 2.74E-10 1.61E-03 1.61E-03 1.52E-06 4.71E-13 1.52E-06 4.71E-03 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 1.54E-04 0 | Unit
Total
Total
3.98E-08
3.37E-01
1.60E-02
1.55E-03
1.69E-04
2.32E-04
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01
3.14E-01
1.79E-04
3.14E-01
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0
 |
| Ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
Ozone depletion
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Resewable primary energy
content used as material
Total use of renewable
primary resources with energy
content used as material
Total use of renewable
primary resources with
energy content
Non-renewable primary
resources used as an energy
carrier (fuel)
Non-renewable primary
resources with energy
content used as material
Total use of non-renewable
primary resources with
energy content
Secondary materials
Renewable secondary fuels
Renewable secondary fuels
Non-renewable secondary
fuels
Action of the fresh water
Hazardous waste disposed
High-level radioactive waste,
High-level radioactive waste,
High-level radioactive waste,
Secondary material | I Unit Unit Unit kg CFC-11 eq Kg CPC-20 eq kg O3_eq Kg CPC-11 eq Kg O3_eq Kg CTUh CTU Kg PM2_5 eq G MJ, LHV G Kg G MJ, LHV G Kg G | A1 <
 | A2 A2 A3 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 9.02E-04 6.93E-01 6.93E-01 0 3.44E-03 0 0.344E-03 0 0.338E-07
 | A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.45E-01 1.98E+00 1.98E+00 0 1.25E-02 1.98E+00 1.386E-02 1.98E+00 1.388E-02 1.988E+00 1.988E+00 1.988E+00 1.388E-02 1.988E+00 1.988E+00 1.388E-02 1.988E+00 1.388E-02 1.388E-03 1.388E-04 1.388E-05 1.388E-06 1.388E-06 1.388E-06 1.388E-07 1.388E-08 | A4 1.66E-08 6.97E-02 1.55E-03 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 29.2% 1.48E-01 9.40E-04 9.36E-01 0 9.86E-01 0 0.
 | A5 kbermal i 8.70E-11 2.40E-03 1.93E-06 4.48E-07 2.66E-12 1.93E-06 4.48E-07 2.66E-12 1.03E-03 6.80E-04 1.03E-03 6.80E-04 1.23E-02 1.23E-02 0 0.23E-02 0 0.23E-02 0 0.3 <t< td=""><td>B1-B7 0</td><td>c1 nce o 0 0 0 <t< td=""><td>c2 c2 2.76E-09 1.17E-02 2.53E-04 2.53E-04 2.00E-05 4.18E-06 9.85E-12 1.35E-09 3.52E-06 4.0% 2.45E-02 1.56E-04 0 1.56E-04 0 1.64E-01 0</td><td>c3 K/W) 0</td><td>c4 2.74E-10 1.61E-03 1.63E-04 1.55E-05 4.71E-13 1.86E-11 2.01E-06 4.71E-03 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 1.54E-04 0
2.39E-09</td><td>Unit
Total
Total
3.398E-08
3.37E-01
1.60E-02
1.69E-04
2.90E-09
2.32E-04
100%
3.14E-01
3.14E-01
3.14E-01
3.33E+00
1.79E-04
3.33E+00
1.79E-04
3.33E+00
1.79E-04
3.33E+00
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Global warming
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Respiratory effects
Ecotoxicity
Fossil fuel depletion
Renewable primary energy
used as energy carrier (fuel)
Renewable primary energy
content used as material
Total use of renewable
primary resources with
Parimary resources with
con-renewable primary
resources used as an energy
carrier (fuel)
Non-renewable primary
resources with energy
content used as material
Secondary materials
Renewable secondary fuels
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 | A2 1.17E-08 1.17E-03 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 9.02E-04 6.93E-01 6.93E-01 0 3.44E-03 0 3.344E-03 0 2.338E-07
 | A3 A3 2.36E-09 1.16E-01 2.43E-03 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.45E-01 1.98E+00 1.98E+00 1.98E+00 0 1.25E-02 1.98E+00 1.98E+00 1.386E-03 0 1.25E-02 0 1.25E-02 0 1.25E-02 | A4 1.66E-08 6.97E-02 1.55E-03 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 29.2% 1.48E-01 9.40E-04 9.86E-01 0 0.366E-01 0 0.366E-01 0 0.386E-01 0 1.389E-03 0 3.39E-07
 | A5 kbermal i 8.70E-11 2.40E-03 1.93E-06 4.48E-07 2.66E-12 1.93E-06 4.48E-07 2.66E-12 1.03E-03 6.80E-04 1.03E-03 6.80E-04 1.23E-02 1.23E-02 1.23E-02 0 0.103 0.104 0.105 0.105 0.106 0.107 0.108 0.108 0.108 0.109 0.109
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3.5.83E-03
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 | A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 20.5% 1.04E-01 6.61E-04 9.02E-04 0 0.32E-01 0 0.344E-03 0 0.338E-07 0 1.03E-07
 | A3 A3 2.36E-09 1.16E-01 2.43E-03 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.45E-01 1.98E+00 1.98E+00 1.25E-02 0 1.25E-03 1.98E+00 1.38E-06 1.38E-06 1.388E-06 | A4 1.66E-08 6.97E-02 1.55E-03 1.21E-04 9.78E-09 2.44E-05 9.78E-01 9.40E-04 9.40E-04 9.86E-01 0 0 0 0.30E-01 0 0.339E-01 0 1.48E-03 1 1.439E-03 1 1.339E-07 1.46E-07
 | A5 kbermal i 8.70E-11 2.40E-03 1.93E-06 4.48E-07 2.66E-12 1.93E-06 4.48E-07 2.66E-12 1.03E-03 6.80E-04 1.03E-03 6.80E-04 1.23E-02 1.23E-02 0 0.32E-02 0.32E-03 0.32E-03 0.32E-03 0.32E-03 0.32E-03 0.32E-03 0.32E-03 0.32E-03 0.32E-03 0.32E-
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| Ampa, FL: LCIA results Parameter CIA results (per m ² inst
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content Secondary materials Renewable secondary fuels Non-renewable secondary fuels Non-renewable secondary fuels Recovered energy Use of net fresh water Ques of net fresh water Hazardous waste disposed Non-hazardous waste disposed Non-hazardous waste, condary evel Condictive waste, condictinal cow, to final cow, level | I Unit Unit Unit kg CFC-11 eq Kg CFC-11 eq kg O_2 eq Kg SO_2 eq kg N eq CTUh CTUh CTUP MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ MJ, LHV MJ Kg MJ MJ, LHV MJ MJ, LHV MJ MJ, LHV MJ Kg MJ MJ, LHV MJ Kg MJ MJ, LHV MJ Kg M | A1 A2 A2 A2 A3 A2 A3 A3
A4 A3 A4 A3 A4 A3 A4 A4 A3 A4 < | A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 6.61E-04 1.03E-07 6.93E-01 0 3.44E-03 0 1.03E-07 1.03E-07 0 1.03E-07 0 1.03E-07 0
 | A3 A3 2.36E-09 1.16E-01 2.43E-03 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-01 1.98E-02 1.98E+00 1.98E+00 0 1.25E-02 1.98E+00 1.98E+00 1.38E-06 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.98E+00 0 1.98E+00 0 0. 1.98E+00 0 1.98E-02 0 1.98E-03 0 | A4 1.66E-08 1.55E-03 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 9.40E-04 9.40E-04 9.40E-04 9.86E-01 0 0.36E-01 0.339E-07 0.339E-07 1.46E-07 1.46E-07 0.3
 | A5 8.70E-111 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 1.93E-06 4.48E-07 2.66E-12 1.20E-06 2.05E-04 1.23E-02 1.23E-02 1.23E-02 1.23E-02 0 2.99E-03 0 1.17E-09 0
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| Ampa, FL: LCIA results Parameter CLA results (per m ² inst Cozone depletion Global warming Smog Acidification Eutrophication Carcinogenics Non-carcinogenics Respiratory effects Ecotoxicity Fossil fuel depletion Resed as energy carrier (fuel) Renewable primary energy content Secontent used as material Primary resources with energy content used as material Renewable primary energy content used as material Renewable secondary fuels Renewable secondary fuels Cotoxices Renewable secondary fuels Renewable secondary fuels Cotoxices Cot | I Unit Unit Unit kg CFC-11 eq Kg CFC-11 eq kg O_2 eq Kg SO_2 eq kg N eq CTUh CTUh CTUP MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ Kg CTUP MJ, LHV MJ MJ, LHV MJ MJ, LHV MJ Kg MJ MJ, LHV MJ Kg MJ | A1 A2 A2 A2 A3 A2 A3 A4 A3 A4 A3 A4 A3 A4 A3 A4 A3 A4 A4 A3 A4 <
 | A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 6.61E-04 1.03E-07 6.93E-01 0 3.44E-03 0 1.03E-07 1.03E-07 0 1.03E-07 0 0.0 1.03E-07 0 0.0 1.03E-07 0 0.0 0.0 1.03E-07 0 0.0 <
 | A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-01 1.98E-02 1.98E+00 0 1.25E-02 1.98E+00 1.38E-02 1.98E+00 1.38E-02 1.98E+00 1.98E+00 0 1.38E-02 0 1.98E+00 0 1.98E+00 0 0 1.386E-03 0 1.386E-03 0 1.386E-03 0 1.386E-03 0 1.386E-03 0 1.386E-03 1.386E-03 1.386E-03 1.386E-03 1.386E-03 1.334E-02 | A4 1.66E-08 6.97E-02 1.55E-03 1.21E-04 9.78E-09 2.44E-05 9.40E-04 9.40E-04 9.40E-04 9.36E-01 0 0.339E-07 0.339E-07 1.46E-07 1.46E-07 0.339E-07 0.40E-04
 | A5 8.70E-111 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 1.93E-06 4.48E-07 1.20E-08 6.80E-04 1.23E-02 0 1.23E-02 0 1.23E-02 1.23E-02 1.23E-03
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 | c3 K/W/) 0 | c4 2.74E-10 1.61E-03 1.61E-03 1.52E-06 4.71E-13 1.86E-11 2.01E-06 3.54E-05 3.54E-05 0 2.26E-02 0 2.35E-05 0 2.36E-02 0 2.26E-02 0 2.39E-09 2.52E-11 0 0 0 |
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| Impa, FL: LCIA resultsParameterCIA results (per m² instOzone depletionGlobal warmingSmogAcidificationEutrophicationCarcinogenicsNon-carcinogenicsRespiratory effectsEcotoxicityFossil fuel depletionRenewable primary energyWarder use of renewablePrimary resources with energyContent use of senewable primaryPresources used as an energyContent use of a materialTotal use of renewablePrimary resources with energyContent used as materialNon-renewable primaryPresources with energyContent used as materialRenewable secondary fuelsRenewable secondary fuelsNon-renewable secondary fuelsNon-renewable secondary fuelsNon-renewable secondary fuelsNon-renewable secondaryPrimary resources with energyContent used as materialContent used as materialSecondary materialsRenewable secondary fuelsNon-renewable secondaryNon-renewable secondaryPresourcesPrimary resources with energyContent flows and wasteConponents for re-useMaterials for recyclingMaterials for energy recovery | I Unit Unit Unit kg CFC-11 eq Kg CFC-11 eq kg O_2 eq Kg SO_2 eq kg N eq CTUh CTUh CTUA Kg PM2.5 eq CTUA MJ, LHV CTUA Kg CTUA MJ, LHV CTUA Kg CTU | E USE, OU A1 6.01E-09 8.82E-02 1.07E-03 1.07E-03 1.07E-03 1.07E-03 1.07E-04 2.67E-01 3.82E-02 1.69E-01 2.52E-01 1.98E+00
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 | A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.38E-02 1.98E+00 1.98E+00 0 1.25E-02 1.98E+00 1.38E-06 1.98E+00 0 1.38E-02 0 1.38E-02 0 1.38E-03 0 1.38E-03 0 1.38E-03 0 1.38E-03 0 1.38E-03 0 1.386E-03 0 1.386E-03 0 1.386E-03 0 1.386E-03 0 1.334E-02 0 1.34E-02 | A4 1.66E-08 6.97E-02 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 9.40E-04 9.40E-04 9.86E-01 0 0.339E-07
 0.339E-03 1.48E-03 0 1.339E-07 0.339E-07 0.46E-07 0.339E-07 0.339E-07 0.46E-07 0.339E-07 0.339E-07 | A5 8.70E-111 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 1.93E-06 4.48E-07 2.66E-12 1.20E-06 1.20E-04 1.23E-02 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.17E-09 1.17E-09 1.23E-03 1.17E-03
 | B1-B7 0 | c1 c1 0 < | c2 2.76E-09 1.77E-02 2.53E-04 2.00E-05 4.18E-06 9.85E-12 1.35E-09 3.52E-06 4.0%
2.45E-02 1.56E-04 0 1.56E-04 0 1.56E-04 0 1.64E-01 0 < | c3 c3 k/w/) 0 | c4 2.74E-10 1.61E-03 1.63E-04 1.52E-06 4.71E-13 1.86E-11 2.01E-06 3.54E-05 3.54E-05 0 2.26E-02 0 2.39E-09 2.39E-09 0 2.52E-11 0
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1.35E-01
1.32E-01
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| Parameter CIA results (per m ² inst
CIA results (per m ² inst
Core depletion Ozone depletion Global warming Smog Acidification Eutrophication Carcinogenics Non-carcinogenics Respiratory effects Ecotoxicity Fossil fuel depletion Renewable primary energy
used as energy carrier (fuel) Renewable primary resources with energy
content used as material Non-renewable primary
resources with energy
content used as material Non-renewable primary
content used as material Renewable secondary fuels Renewable secondary fuels Non-renewable secondary fuels Recovered energy Quartificationed, to final
repository Non-hazardous waste disposed Materials for energy recovery Components for re-use Materials for energy | I Unit Unit Unit kg CFC-11 eq Kg CPC-20 a kg O_2 eq A kg O_2 eq A kg N eq CTUh CTUh CTUC Kg PM2.5 eq A MJ, LHV A Kg A MJ, LHV A Kg A MJ, LHV A Kg | A1 A2 A2 A2 A2 A3 A2 A3 A4 <
 | A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 6.61E-04 1.03E-07 6.93E-01 6.93E-01 0 1.03E-07 0 1.03E-07 0 1.03E-07 0 0.0 <td>A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.38E-01 1.98E+00 1.98E+00 0 1.25E-02 1.98E+00 1.36E-03 1.98E+00 1.36E-03 0 1.36E-03 <</td> <td>A4 1.66E-08 6.97E-02 1.55E-03 1.21E-04 9.78E-09 2.44E-05 29.2% 1.48E-01 9.40E-04 9.36E-01 0 0.339E-07 0 1.48E-03 0 1.339E-07 0 1.46E-07 0 0.339E-07 0 0.339E-07</td> <td>A5 8.70E-111 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 1.20E-06 1.20E-04 1.20E-04 1.23E-02 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.17E-09 1.17E-03 1.17E-03 1.17E-03 1.17E-03 1.17E-03 1.17E-03 <td< td=""><td>B1-B7 0</td><td>c1 c1 0 <</td><td>c2 RSI=1m² 2.76E-09 1.17E-02 2.53E-04 2.35E-03 3.52E-06 4.0% 2.43E-01 1.56E-04 1.56E-04 0 1.64E-01 0 0.1</td><td>c3 c3 k/w/) 0</td><td>c4 2.74E-10 1.61E-03 1.63E-04 1.52E-06 4.71E-13 1.86E-11 2.01E-06 3.54E-05 3.54E-05 0 2.26E-02 0 2.354E-05 0 2.26E-02 0 2.354E-05 0 2.26E-02 0 2.39E-09 2.39E-09 2.39E-09 0 2.52E-11 0
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Total
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 | A5 8.70E-111 7.53E-04 2.40E-05 1.93E-06 4.48E-07 2.66E-12 1.20E-06 1.20E-04 1.20E-04 1.23E-02 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.17E-09 1.17E-03 1.17E-03 1.17E-03 1.17E-03 1.17E-03 1.17E-03 <td< td=""><td>B1-B7 0</td><td>c1 c1 0 <</td><td>c2 RSI=1m² 2.76E-09 1.17E-02 2.53E-04 2.35E-03 3.52E-06 4.0% 2.43E-01 1.56E-04 1.56E-04 0 1.64E-01 0 0.1</td><td>c3 c3 k/w/) 0</td><td>c4 2.74E-10 1.61E-03 1.63E-04 1.52E-06 4.71E-13 1.86E-11 2.01E-06 3.54E-05 3.54E-05 0 2.26E-02 0 2.354E-05 0 2.26E-02 0 2.354E-05 0 2.26E-02 0 2.39E-09 2.39E-09 2.39E-09 0 2.52E-11 0
<td>Unit
Total
Total
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 | c3 c3 k/w/) 0 | c4 2.74E-10 1.61E-03 1.63E-04 1.52E-06 4.71E-13 1.86E-11 2.01E-06 3.54E-05 3.54E-05 0 2.26E-02 0 2.354E-05 0 2.26E-02 0 2.354E-05 0 2.26E-02 0 2.39E-09 2.39E-09 2.39E-09 0 2.52E-11 0
<td>Unit
Total
Total
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3.37E-01
1.60E-02
1.60E-02
1.62E-04
1.00%
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| Impa, FL: LCIA results Parameter CIA results (per m ² instance) Ozone depletion Global warming Smog Acidification Eutrophication Carcinogenics Non-carcinogenics Respiratory effects Ecotoxicity Fossil fuel depletion Renewable primary energy used as energy carrier (fuel) Renewable primary energy content Renewable primary resources with energy content Non-renewable primary resources with energy content Non-renewable primary resources with energy content Renewable secondary fuels Renewable secondary fuels Renewable secondary fuels Non-renewable secondary fuels Renewable secondary fuels Renewable secondary fuels Non-renewable secondary fuels Renewable secondary fuels Non-renewable secondary fuels Non-renewable secondary fuels Renewable secondary fuels Non-renewable secondary fuels Non-renewable secondary fuels Non-renewable secondary fuels Non-hazardous waste disposed Non-hazardous wa | I Unit Unit Unit kg CFC-11 eq Kg GO2 eq kg O3 eq A kg O2 eq A kg O12 eq A kg PM2.5 eq A CTUh A Kg PM2.5 eq A MJ, LHV A Kg A Kg A MJ, LHV A Kg A | A1 A2 A2 A3 A2 A3 A4 A3 A3 A4
A3 A4 A3 A4 A4 A3 A4 < | A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 6.61E-04 1.04E-01 6.93E-01 6.93E-01 0 1.04E-03 1.03E-07 1.03E-07 1.03E-07 0 1.03E-07 0 1.03E-07 0 1.03E-07 0 0 1.03E-07 0 0 0 1.03E-07 0 0 1.03E-07
 | A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.36E-02 1.19E-02 1.38E-02 1.98E+00 0 1.25E-02 1.98E+00 1.38E-06 1.38E-06 0 1.25E-02 0 1.38E-06 1 0 1.38E-06 0 1.38E-08 0 1.386E-03 0 1.386E-03 0 1.36E-03 0 1.36E-03 0 1.334E-02 0 1.34E-02 | A4 1.66E-08 6.97E-02 1.21E-04 9.78E-09 2.44E-05 2.44E-05 9.40E-04 9.40E-04 9.86E-01 0 0.339E-07 0.339E-03 1.48E-03 0 1.439E-03 0 1.439E-03 0 1.439E-03 0 1.439E-03 0 1.439E-03 0 1.439E-03 0 0 0 0 0 1.439E-03 0 0 0 1.439E-03 0 0 1.439E-03 0 0 0
 | A5 8.70E-111 8.70E-11 2.40E-03 1.93E-04 4.48E-07 2.66E-12 1.93E-04 1.20E-08 6.80E-04 1.23E-02 1.23E-02 1.23E-02 0 2.99E-03 1.17E-09 0.17E-03 0.17E-03
 | B1-B7 0 | c1 0 <t< td=""><td>c2 RSI=1m² 2.76E-09 1.17E-02 2.53E-04 9.85E-12 1.35E-09 3.52E-06 4.0% 2.40E-01 1.56E-04 0 1.56E-04 0 1.56E-04 0 1.56E-04 0 1.56E-04 0 1.64E-01 0</td></t<> <td>c3 c3 K/W/) 0</td> <td>c4 2.74E-10 1.61E-03 1.61E-03 1.55E-05 4.71E-13 1.86E-11 2.01E-06 3.54E-05 3.54E-05 0 2.26E-02 0 2.354E-05 0 2.26E-02 0 2.26E-02 0 2.26E-02 0 2.39E-09 2.39E-09 2.52E-11 0 0 0 0 0 0 0 0 0 0 0 0 1.54E-04 0</td> <td>Unit
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1.60E-02
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1.69E-04
2.32E-04
3.32E-01
3.14E-01
3.14E-01
3.34E-01
3.33E+00
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1.79E-04
1.232E-01
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 | c3 c3 K/W/) 0 | c4 2.74E-10 1.61E-03 1.61E-03 1.55E-05 4.71E-13 1.86E-11 2.01E-06 3.54E-05 3.54E-05 0 2.26E-02 0 2.354E-05 0 2.26E-02 0 2.26E-02 0 2.26E-02 0 2.39E-09 2.39E-09 2.52E-11 0 0 0 0 0 0 0 0 0 0 0 0 1.54E-04 0
 | Unit
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1.60E-02
1.69E-04
2.32E-04
3.32E-01
3.14E-01
3.14E-01
3.34E-01
3.33E+00
1.79E-04
1.79E-04
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1.79E-04
1.232E-01
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| Impa, FL: LCIA results Parameter CIA results (per m ² instance) Cozone depletion Global warming Smog Acidification Eutrophication Carcinogenics Non-carcinogenics Respiratory effects Ecotoxicity Fossil fuel depletion Resewable primary energy Renewable primary energy resources with energy content used as material Porimary resources with energy content Non-renewable primary energy content Non-renewable primary energy content Non-renewable primary energy content Non-renewable primary energy content Secondary materials Renewable secondary fuels Non-renewable secondary Parameter Recovered energy Cutput flows and waste High-level radioactive waste, conditioned, to final Components for re-use Materials for energy recovery Carbon emissions and re Biogenic | I Unit Unit Unit kg CFC-11 eq Kg GO2 eq kg O3 eq Kg kg N eq CTUh CTUh CTUC Kg PM2.5 eq G MJ, LHV G Kg G MJ, LHV G Kg G MJ, LHV G Kg G K | A1 6.01E-09 8.82E-02 1.02E-03 1.02E-03 1.02E-03 1.02E-04 2.67E-03 1.69E-04
2.52E-01 1.98E+00 1.98E+00 1.98E+00 1.02E-04 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.02E-01 0 1.03E-01 0 1.03E-01 0 1.03E-01 0 1.03E-01 0 1.03E-01 0 1.03E-03 1.03E | A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 6.61E-04 1.03E-07 6.93E-01 0 1.03E-07 1.03E-07 0 1.03E-07 0 1.03E-07 0 0.0 <td>A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-01 1.98E-02 1.98E+00 1.35E-02 1.98E+00 1.38E-02 1.38E-03 1.38E-03 1.3.34E-02 1.3.34E-02</td> <td>A4 1.66E-08 6.97E-02 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 9.40E-04 9.40E-04 9.36E-01 0 0.339E-07 0 1.48E-03 0 1.339E-07 1.46E-07 1.46E-07 0 1.46E-07 0 0.339E-07 0 0.3 0 0 0 0 0 0 0 0 0 0 0 1.46E-07 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>A5 8.70E-111 7.53E-04 2.40E-05 1.93E-06 2.66E-12 1.93E-06 2.66E-12 1.20E-08 6.80E-04 1.23E-02 0 1.23E-02 0 1.23E-02 0 1.23E-02 0 0 1.17E-09 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>B1-B7 0</td> <td>c1 c1 0 <</td> <td>c2 RSI=1m² 2.76E-09 1.77E-02
2.53E-04 9.85E-12 1.35E-09 3.52E-06 4.0% 2.43E-01 1.56E-04 1.56E-04 0 1.56E-04 0 1.56E-04 0 1.64E-01 0</td> <td>c3 c3 k/w) 0</td> <td>c4 2.74E-10 1.61E-03 1.61E-03 1.52E-06 4.71E-13 1.86E-11 2.01E-03 3.54E-05 3.54E-05 2.26E-02 0 2.36E-02 0 2.39E-09 2.39E-09 0 2.52E-11 0</td> <td>Iunit Total 3.98E-08 3.37E-01 1.60E-02 1.69E-04 2.90E-09 2.32E-04 1.00% 2.32E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.33E-00 3.34E-01 3.34E-02 3.34E-03 3.34E-03 3.34E-03 3.34E-03</td> | A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-01 1.98E-02 1.98E+00 1.35E-02 1.98E+00 1.38E-02 1.38E-03 1.38E-03 1.3.34E-02 1.3.34E-02 | A4 1.66E-08 6.97E-02 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 9.40E-04 9.40E-04 9.36E-01 0 0.339E-07 0 1.48E-03 0 1.339E-07 1.46E-07 1.46E-07 0 1.46E-07 0 0.339E-07 0 0.3 0 0 0 0 0 0 0 0 0 0 0 1.46E-07 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 | A5 8.70E-111 7.53E-04 2.40E-05 1.93E-06 2.66E-12 1.93E-06 2.66E-12 1.20E-08 6.80E-04 1.23E-02 0 1.23E-02 0 1.23E-02 0 1.23E-02 0 0 1.17E-09 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 | B1-B7 0 | c1 c1 0 < | c2 RSI=1m ² 2.76E-09 1.77E-02 2.53E-04 9.85E-12 1.35E-09 3.52E-06 4.0% 2.43E-01 1.56E-04 1.56E-04 0 1.56E-04 0 1.56E-04 0 1.64E-01 0
 | c3 c3 k/w) 0 | c4 2.74E-10 1.61E-03 1.61E-03 1.52E-06 4.71E-13 1.86E-11 2.01E-03 3.54E-05 3.54E-05 2.26E-02 0 2.36E-02 0 2.39E-09 2.39E-09 0 2.52E-11 0
 | Iunit Total 3.98E-08 3.37E-01 1.60E-02 1.69E-04 2.90E-09 2.32E-04 1.00% 2.32E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.33E-00 3.34E-01 3.34E-02 3.34E-03 3.34E-03 3.34E-03 3.34E-03 |
| Parameter CIA results (per m ² instance) Cozone depletion Global warming Smog Acidification Eutrophication Carcinogenics Non-carcinogenics Respiratory effects Ecotoxicity Fossil fuel depletion Resewable primary energy
content used as material Renewable primary renergy
content used as material Non-renewable primary resources with
energy content Non-renewable primary
resources with energy
content used as an energy Non-renewable primary
resources with energy
content used as material Renewable secondary fuels Recovered energy Use of net fresh water
conditioned, to final
repository Components for re-use Materials for energy recovery Carbon emissions and re Biogenic carbon removal Biogenic carbon emission | I Unit Unit Unit kg CFC-11 eq Kg CFC-11 eq kg OQ_ eq Kg SOQ_ eq kg N eq CTUh CTUh CTUC kg PM2_5 eq CTUC MJ, LHV CTUC MJ CTUC | A1 A2 A2 A3 A2 A3 A4 <
 | A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 6.61E-04 1.03E-07 6.93E-01 6.93E-01 0 1.03E-07 0 1.03E-07 0 1.03E-07 0 1.03E-07 0 0 0 0 0 0 0 0 0 0 0 0 0 1.03E-07 0 0 0 0 0 0 0 0 0 1.03E-07 0 0 0 0 0 0 0
 | A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.38E-02 1.98E+00 1.98E+00 0 1.35E-02 1.98E+00 1.98E+00 1.38E-06 1.38E-02 0 1.38E-02 0 1.38E-02 0 1.38E-02 0 1.38E-02 0 1.38E-02 0 3.38E-02 0 3.34E-02 0 3.34E-02 0 3.385E-02 | A4 I.66E-08 6.97E-02 1.55E-03 1.21E-04 9.78E-09 2.44E-05 9.40E-04 9.40E-04 9.86E-01 0 0.339E-07 0 1.48E-01 0 1.31E-04 0 1.48E-01 0 1.330E-01 0 1.46E-07 1.46E-07 0
 | A5 8.70E-111 8.70E-111 2.40E-03 1.93E-06 4.48E-07 2.66E-12 1.93E-06 1.20E-08 6.80E-04 1.23E-02 1.23E-03 1.23E-03 1.23E-03 1.17E-09 1.17E-09 1.17E-03 1.17E-03 <t< td=""><td>B1-B7 0</td><td>c1 c1 0 <t< td=""><td>c2 2.76E-09 1.77E-02 2.53E-04 2.35E-03 3.52E-06 4.0% 2.43E-01 3.52E-04 1.35E-04 1.35E-04 1.35E-04 1.35E-04 1.35E-04 1.35E-04 1.35E-04 1.56E-04. 1.56E-04.</td><td>c3 K/W) 0</td><td>c4 2.74E-10 1.61E-03 1.63E-04 1.52E-05 4.71E-13 1.86E-11 2.01E-06 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 2.39E-01 2.39E-01</td><td>Iunit Total Iotal 3.98E-08 3.37E-01 1.60E-02 1.63E-03 2.90E-04 2.90E-04 1.00% 2.32E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 1.04E-02 0 3.34E-01 1.04E-02 0 1.04E-02 1.13E+00 1.04E+02 1.04E+02</td></t<></td></t<>
 | B1-B7 0 | c1 c1 0 <t< td=""><td>c2 2.76E-09 1.77E-02 2.53E-04 2.35E-03 3.52E-06 4.0% 2.43E-01 3.52E-04 1.35E-04 1.35E-04 1.35E-04 1.35E-04 1.35E-04 1.35E-04 1.35E-04 1.56E-04. 1.56E-04.</td><td>c3 K/W) 0</td><td>c4 2.74E-10 1.61E-03 1.63E-04 1.52E-05 4.71E-13 1.86E-11 2.01E-06 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 2.39E-01 2.39E-01</td><td>Iunit Total Iotal 3.98E-08 3.37E-01 1.60E-02 1.63E-03 2.90E-04 2.90E-04 1.00% 2.32E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 1.04E-02 0 3.34E-01 1.04E-02 0 1.04E-02 1.13E+00 1.04E+02 1.04E+02</td></t<> | c2 2.76E-09 1.77E-02 2.53E-04 2.35E-03 3.52E-06 4.0% 2.43E-01 3.52E-04 1.35E-04 1.35E-04 1.35E-04 1.35E-04 1.35E-04 1.35E-04 1.35E-04 1.56E-04.
 | c3 K/W) 0 | c4 2.74E-10 1.61E-03 1.63E-04 1.52E-05 4.71E-13 1.86E-11 2.01E-06 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 2.39E-01 2.39E-01 | Iunit Total Iotal 3.98E-08 3.37E-01 1.60E-02 1.63E-03 2.90E-04 2.90E-04 1.00% 2.32E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 3.34E-01 1.04E-02 0 3.34E-01 1.04E-02 0 1.04E-02 1.13E+00 1.04E+02 1.04E+02
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| mpa, FL: LCIA results Parameter CIA results (per m ² instatts) Coone depletion Global warming Smog Acidification Eutrophication Carcinogenics Respiratory effects Ecotoxicity Fossil fuel depletion Resource use indicators Renewable primary energy. Renewable primary energy. Content used as material Fosources with energy. Content used as material Foral use of non-renewable primary resources with energy. Content used as material Foral use of non-renewable primary resources with energy. Content used as material Foral use of non-renewable primary resources with energy. Content used as material Renewable secondary fuels Secondary materials Renewable secondary fuels Parameditive waste disposed Non-renewable secondary fuels Couponents for re-use Components for re-use Materials for recycling Materials for recycling Materials for nengry recovery Carabon emis | I Unit Unit Unit kg CFC-11 eq Kg CFC-11 eq kg O_2 eq Kg SO_2 eq kg N eq CTUh CTUh CTUC kg PM2.5 eq CTUC MJ, LHV CTUA Kg | A1 6.01E-09 8.82E-02 1.02E-03 1.02E-04 2.67E-09 3.82E-03 1.69E-04 2.52E-01 2.52E-01 1.98E+00 1.98E+00 2.07E-01 2.07E-01 0 2.18E-02 0 1.98E+00 1.98E+00
 1.98E+00 1.98E+00 1.07E-01 0 1.07E-03 1.038E+00 1.038E+00 0 1.038E+00 0 1.038E+00 1.038E+00 1.038E+00 1.038E+00 1.038E+00 1.038E+00 1.01 1.02 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03 | A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 6.381-01 1.03E-07 6.93E-01 0 0.344E-03 0 0.344E-03 0 0.33E-01 0 0.33E-01 0 0.344E-03 0 0.3 0
 | A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.38E-06 1.98E+00 1.98E+00 0 1.25E-02 1.98E+00 1.36E-03 1.36E-03 1.38E-06 1.38E-02 0 1.38E-02 1.38E-03 1.38E-03 1.38E-03 1.386E-03 | A4 1.66E-08 6.97E-02 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 29.2% 1.48E-01 9.40E-04 9.36E-01 0 9.86E-01 0 0.339E-07 0 1.46E-07 0 0.339E-07 0
 0.339E-07 0 0.3 0 | A5 8.70E-111 8.70E-11 2.40E-03 1.93E-04 4.48E-07 2.66E-12 1.93E-04 1.20E-08 1.23E-02 1.23E-03 1.17E-09 1.17E-09 1.17E-09 1.17E-09 1.17E-09 1 1.17E-09 1.17E-
 | B1-B7 0 | C1 C1 0 <t< td=""><td>c2 C2 2.76E-09 1.17E-02 2.53E-04 2.35E-03 3.52E-06 4.0% 2.43E-01 1.56E-04 1.56E-04 0 1.56E-04 1.56E-04 1.56E-04 1.56E-04 1.56E-04 1.56E-04</td><td>c3 K/W) 0</td><td>c4 2.74E-10 1.61E-03 1.63E-04 1.52E-06 4.71E-13 1.86E-11 2.01E-06 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 2.39E-09 2.39E-09 0 2.39E-09 0</td><td>UUNIT
Total
3.398E-08
3.37E-01
1.60E-02
1.69E-04
2.32E-04
1.00%
3.14E-01
3.14E-01
3.33E+00
1.79E-04
3.33E+00
1.79E-04
1.32E-01
0
1.04E-02
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 | c3 K/W) 0 | c4 2.74E-10 1.61E-03 1.63E-04 1.52E-06 4.71E-13 1.86E-11 2.01E-06 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 2.39E-09 2.39E-09 0 2.39E-09 0
 | UUNIT
Total
3.398E-08
3.37E-01
1.60E-02
1.69E-04
2.32E-04
1.00%
3.14E-01
3.14E-01
3.33E+00
1.79E-04
3.33E+00
1.79E-04
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| Ampa, FL: LCIA results Parameter CLA results (per m ² instatemeter) Cozone depletion Global warming Smog Acidification Eutrophication accordingenics Respiratory effects Ecotoxicity Fossil fuel depletion Renewable primary renergy content used as material Total use of renewable primary resources with energy content used as material Ron-renewable primary resources with energy content used as material Non-renewable primary resources with energy content used as material Renewable secondary fuels Renewable secondary fuels Renewable secondary fuels Renewable secondary fuels Non-renewable secondary fuels Renewable secondary fuels Renewable secondary fuels Recovered energy Utaput flows and waste Materials for recycling Materials for energy recovery Components for re-use Resported energy Carbon emissions and frail Biogenic carbon removal Resported energy Carbon emission from product Biogenic carbon removal | I Unit Unit Unit kg CFC-11 eq Kg GO2_eq kg O3_eq Kg kg N eq CTUh CTUDA CTUDA Kg PM2_5 eq MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV MJ, LHV Kg Category kg MJ, LHV kg Category MJ, LHV MJ kg Category | A1 6.01E-09 8.82E-02 1.02E-03 1.02E-03 1.02E-04 2.67E-09
3.82E-03 1.09E-04 2.52E-01 1.98E+00 1.98E+00 0 2.07E-01 0 2.07E-01 0 2.07E-01 0 0 1.098E+00 0 0 1.098E+00 0 0 1.01EE 0 0 0 1.01E 0 1.027E-04 0 1.037E-04 0 1.01E 0 1.027E-03 0 1.037E+00 0 1.037E+00 0 | A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 6.381E-03 1.04E-01 6.61E-04 9.02E-04 0 6.93E-01 0 0.344E-03 0 1.03E-07 0 0.33E-07 0 0.3 0
 | A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 2.37E-01 1.98E+00 1.98E+00 0 1.25E-02 1.98E+00 1.38E-02 0 1.25E-02 0 1.38E-06 1 0 1.38E-06 0 1.38E-02 0 1.385E-02 0 3.34E-02 0 3.34E-02 0 3.34E-02 0 3.34E-02 0 1.385E-02 0
 | A4 1.66E-08 6.97E-02 1.21E-04 9.78E-09 2.44E-05 2.44E-05 9.40E-04 9.36E-01 0 0.300 <t< td=""><td>AS AS EXPORE 8.70E-111 2.40E-03 1.93E-04 4.48E-07 2.66E-12 1.93E-04 1.20E-05 4.48E-07 2.66E-12 1.20E-04 1 6.80E-04 1 2.05E-04 1 2.32E-02 1 2.32E-02 0 2.99E-03 1 2.05E-04 1 2.32E-02 0 3.10E-07 1 0 1.17E-09 1 0 0 1.17E-09 1 0 1 1.17E-09 1 1.17E-09 1 1.17E-09 1 1.17E-09 1 1.17E-09 1 1.17E-09 1</td><td>B1-B7 0</td><td>C1 C1 0 <t< td=""><td>c2 C2 C3 2.76E-09 1.17E-02 2.53E-04 2.35E-03 3.52E-06 4.0% 2.43E-01 1.56E-04 1.56E-04 1.56E-04 1.56E-04 0 1.56E-04 0 1.56E-04 0 1.64E-01 0</td><td>per f c3 K/W/) 0</td><td>c4 2.74E-10 1.61E-03 1.61E-03 1.52E-05 4.71E-13 2.01E-06 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 2.39E-09 2.39E-09 0 2.39E-09 0 <td>Unit
Total
Total
3.398E-08
1.60E-02
1.60E-03
1.69E-04
2.32E-04
3.32E-04
3.14E-01
3.34E-01
3.33E+00
1.79E-04
3.33E+00
1.79E-04
1.04E-02
0
1.04E-02
1
3.32E-01
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1.04E-02
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1.04E-02
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1.04E-02
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 | B1-B7 0 | C1 C1 0 <t< td=""><td>c2 C2 C3 2.76E-09 1.17E-02 2.53E-04 2.35E-03 3.52E-06 4.0% 2.43E-01 1.56E-04 1.56E-04 1.56E-04 1.56E-04 0 1.56E-04 0 1.56E-04 0 1.64E-01 0</td><td>per f c3 K/W/) 0</td><td>c4 2.74E-10 1.61E-03 1.61E-03 1.52E-05 4.71E-13 2.01E-06 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 2.39E-09 2.39E-09 0 2.39E-09 0 <td>Unit
Total
Total
3.398E-08
1.60E-02
1.60E-03
1.69E-04
2.32E-04
3.32E-04
3.14E-01
3.34E-01
3.33E+00
1.79E-04
3.33E+00
1.79E-04
1.04E-02
0
1.04E-02
1
3.32E-01
1
1.04E-02
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1.04E-02
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 | c2 C2 C3 2.76E-09 1.17E-02 2.53E-04 2.35E-03 3.52E-06 4.0% 2.43E-01 1.56E-04 1.56E-04 1.56E-04 1.56E-04 0 1.56E-04 0 1.56E-04 0 1.64E-01 0 | per f c3 K/W/) 0 | c4 2.74E-10 1.61E-03 1.61E-03 1.52E-05 4.71E-13 2.01E-06 3.54E-05
3.54E-05 2.26E-02 0 2.26E-02 0 2.39E-09 2.39E-09 0 2.39E-09 0 <td>Unit
Total
Total
3.398E-08
1.60E-02
1.60E-03
1.69E-04
2.32E-04
3.32E-04
3.14E-01
3.34E-01
3.33E+00
1.79E-04
3.33E+00
1.79E-04
1.04E-02
0
1.04E-02
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3.32E-01
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1.04E-02
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Total
Total
3.398E-08
1.60E-02
1.60E-03
1.69E-04
2.32E-04
3.32E-04
3.14E-01
3.34E-01
3.33E+00
1.79E-04
3.33E+00
1.79E-04
1.04E-02
0
1.04E-02
1
3.32E-01
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| Ampa, FL: LCIA results Parameter CIA results (per m ² instance) Ozone depletion Global warming Smog Acidification Eutrophication Carcinogenics Non-carcinogenics Respiratory effects Ecotoxicity Fossil fuel depletion Renewable primary renergy carrier (fuel) Renewable primary resources with energy content used as material Ron-renewable primary resources with energy content used as material Non-renewable primary resources with energy content used as material Primary resources with energy content used as material Renewable secondary fuels Renewable secondary fuels Non-renewable secondary fuels Recovered energy Ques of net fresh water Presources interials Recovered energy Use of net secondary fuels Non-hazardous waste disposed Non-hazardous waste Recovered energy Use of net fresh water Components for re-use Materials for energy recovery Components for re-use Materials for energy recove | I Unit Unit Unit kg CFC-11 eq Kg GO2_eq kg O3_eq Kg kg O3_eq Kg kg PM2_5 eq Kg MJ, LHV Kg MJ, LHV Kg MJ, LHV Kg kg Kg MJ, LHV Kg kg Kg | A1 6.01E-09 8.82E-02 1.02E-03 1.02E-03 1.02E-03 1.02E-03 1.03E-03
 | A2 1.17E-08 4.90E-02 1.09E-03 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 20.5% 1.04E-01 6.61E-04 9.02E-04 6.93E-01 6.93E-01 0 0.344E-03 0 1.03E-07 1 0 0 0 1.03E-07 0
 | A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-01 1.07E-10 2.33E-01 1.98E+00 1.98E+00 1.36E-02 1.98E+00 1.33E-02 | A4 1.66E-08 6.97E-02 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 9.40E-04 9.36E-01 9.36E-01 0 0.339E-07 1.46E-03 0 1.46E-07 0 1.46E-07 0 1.46E-07 0
 | A3 A5 8.70E-111 2.40E-03 1.93E-06 2.66E-122 3.102E-03 1.20E-04 1.20E-04 1.20E-04 1.20E-04 1.20E-04 1.20E-04 1.20E-04 1.20E-04 1.23E-02 0 1.23E-02 0 1.23E-02 1.17E-09 1.17E-09 1.17E-03
 | B1-B7 0 | C1 C1 0 <t< td=""><td>c2 C2 C3 2.76E-09 1.77E-02 2.53E-04 9.85E-12 1.35E-09 3.52E-06 4.0% 2.43E-01 1.56E-044 1.56E-04 0 1.56E-04 0 1.56E-04 0 1.64E-01 0</td><td>c3 C3 K/W) 0</td></t<> <td>c4 2.74E-10 1.61E-03 1.61E-03 4.71E-13 1.52E-06 4.71E-13 2.01E-03 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 2.39E-09 1.54E-04 0 2.39E-09 0 2.39E-09 0</td> <td>Unit
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1.60E-02
1.00%
3.232E-04
6.61E-02
6.61E-02
6.33E+00
6.33E+00
1.79E-04
1.79E-04
1.32E-01
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 | c3 C3 K/W) 0 | c4 2.74E-10 1.61E-03 1.61E-03 4.71E-13 1.52E-06 4.71E-13 2.01E-03 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 2.39E-09 1.54E-04 0 2.39E-09 0 2.39E-09 0
 | Unit
Total
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1.60E-02
1.60E-02
1.00%
3.232E-04
6.61E-02
6.61E-02
6.33E+00
6.33E+00
1.79E-04
1.79E-04
1.32E-01
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| | I Unit Unit Unit kg CFC-11 eq Kg GO2 eq kg O3 eq Kg GO2 eq kg O12 eq Kg O12 eq kg O12 eq Kg kg C02 eq Kg | A1 6.01E-09 8.82E-02 1.02E-03 1.02E-04 2.67E-03 1.69E-04 2.52E-01 1.98E+00 1.98E+00
 1.98E+00 1.98E+00 1.02E-04 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.98E+00 1.02E-04 1.03E-01 | A2 1.17E-08 4.90E-02 1.09E-03 8.51E-05 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 6.61E-04 1.03E-07 6.93E-01 6.93E-01 0 1.03E-07 0 1.03E-07 0 1.03E-07 0
 | A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-01 1.09E-02 1.98E+00 1.98E+00 1.98E+00 0 1.35E-02 1.98E+00 1.98E+00 0 1.35E-02 1.366E-03 1.366E-03 0 1.364E-03 1.364E-03 0 1.364E-03 0 1.364E-03 | A4 1.66E-08 6.97E-02 1.21E-04 2.52E-05 6.39E-11 9.78E-09 2.44E-05 9.40E-04 9.36E-01 9.36E-01 0 1.48E-01 0 1.339E-07 1.46E-07 1.46E-07 1.46E-07 0 1.46E-07 0 0 0 0 0 0 0
 0 | A5 8.70E-111 8.70E-121 2.40E-03 1.93E-06 4.48E-07 2.66E-122 1.93E-04 1.20E-04 1.20E-04 1.23E-02 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.17E-09 1.17E-03 <
 | B1-B7 0 | C1 C1 0 <t< td=""><td>c2 C2 C3 2.76E-09 1.17E-02 2.53E-04 9.85E-12 1.35E-09 3.52E-06 4.0% 2.43E-01 1.56E-044 1.56E-04 0 1.56E-04 0 1.56E-04 0 1.64E-01 0</td><td>c3 K/W/) 0</td></t<> <td>c4 2.74E-10 1.61E-03 1.61E-03 1.52E-05 4.71E-13 1.86E-11 2.01E-03 3.54E-05 3.54E-05 3.54E-05 2.26E-02 0 2.35E-01 0 2.39E-09 1.54E-04 0 2.39E-09 0 2.39E-09 0</td> <td>UUNIT
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1.79E-04
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| Ampa, FL: LCIA results
Parameter
CIA results (per m ² inst
Global warming
Smog
Acidification
Eutrophication
Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Carcinogenics
Renewable primary energy
content used as material
Content from product
High-level radioactive waste,
Conditioned, to final
repository
Components for re-use
Materials for recycling
Materials for recycling
Materials for recycling
Materials for nengy recovery
Components for re-use
Materials for nengy recovery
Components for re-use
Biogenic carbon removal
from product
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Calcinatio | I Unit Unit Unit kg CFC-11 eq Kg GO2 eq kg O3 eq Kg O3 eq kg O3 eq Kg O12 eq kg O12 eq Kg kg C02 eq Kg | A1 6.01E-09 8.82E-02 1.02E-03 1.02E-04 2.67E-03 1.69E-04 2.52E-01 2.52E-01 1.98E+00 1.98E+00 2.07E-01 2.18E-02 0 2.07E-01 0 2.07E-01 0 2.18E-02 0 1.098E+00 0 1.098E+00 0 1.07E-01 0 1.07E-03 0 1.07E-04 0 1.038E+00 0 1.07E-04 0 1.07E-04 0 1.07E-03 0 1.07E-03 0 1.07E-03 0 1.07E-03 0 1.07E+00 0 1.07E+00 0 1.07E+00 0 1
 | A2 1.17E-08 4.90E-02 1.09E-03 4.49E-11 6.88E-09 1.72E-05 1.04E-01 6.393E-01 2.07E-06 6.93E-01 6.93E-01 0 1.04E-03 0 1.03E-01 0 1.03E-01 0 1.03E-07 0 1.03E-07 0
 | A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.52E-05 1.07E-101 2.07E-02 1.52E-02 1.98E+00 1.98E+00 1.98E+00 0 1.25E-02 1.98E+00 1.38E-06 1.38E-06 0 1.38E-02 0 2.38E-02 0 3.385E-02 3.85E-02 0 3.85E-02 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 | A4 1.66E-08 6.97E-02 1.21E-04 9.78E-09 2.44E-05 9.40E-04 9.40E-04 9.36E-01 9.86E-01 0 1.48E-01 9.306E-01 0 1.436E-03 1.436E-01 0 1.46E-07 1.46E-07 0 <td>A5 8.70E-111 8.70E-121 2.40E-03 1.93E-04 4.48E-07 2.66E-12 1.20E-04 1.20E-04 1.23E-02 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.17E-09 1.17E-09 1.17E-03 <t< td=""><td>B1-B7 0
 0 0</td><td>c1 c1 0</td><td>c2 C2 C3 2.76E-09 1.17E-02 2.53E-04 2.35E-03 1.35E-09 3.52E-06 4.0% 2.43E-01 1.56E-044 1.56E-044 0 1.56E-041 0 1.56E-041 0 1.56E-041 0 1.64E-01 0 0 0 1.56E-044 0 1.56E-041 0 1.56E-041 0 1.64E-01 0 0 1.64E-01 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0<!--</td--><td>c3 K 0 <td< td=""><td>c4 2.74E-10 1.61E-03 1.61E-03 1.52E-05 4.71E-13 1.86E-11 2.01E-03 3.54E-05 3.54E-05 2.26E-02 0 2.26E-02 0 2.39E-03 0 2.39E-03 0 2.39E-03 0 2.39E-03 0</td><td>UUNIT
Total
3.398E-08
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Smog
Acidification
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Carcinogenics
Non-carcinogenics
Respiratory effects
Ecotoxicity
Fossil fuel depletion
Resource use indicators
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content used as material
Resources with energy
content used as material
Non-renewable primary
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Renewable secondary fuels
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Recovered energy
Cuse of net fresh water
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1.02E-03 1.02E-04 2.67E-03 1.69E-04 2.52E-01 2.52E-01 1.98E+00 1.98E+00 1.98E+00 2.07E-01 0 2.13E-01 0 2.07E-01 0 2.138E-02 0 0 1.98E+00 1 0 1.07E-04 0 1.038E+00 0 1.038E+00 0 1.038E+00 0 1.038E+00 0 1.038E+00 0 1.038E+00 0 1.037E+00 0 1.037E+00 0 1.037E+00 0 1.037E+00 0 1.037E+00 0 1.037E+00 0 <t< td=""><td>A2 1.17E-08 1.17E-03 1.09E-03 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 20.5% 1.04E-01 6.93E-01 6.93E-01 0 0.3.44E-03 0 0.3.44E-03 0 0.3.54E-07 0 0.3.64AE-03 0 0.3.64AE-03 0 </td></t<> <td>A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.07E-101 2.07E-02 1.07E-101 2.07E-02 1.07E-101 2.07E-02 1.07E-101 2.07E-02 1.07E-102 1.098E+000 1.98E+001 0 1.25E-02 0 1.25E-02 0 1.36E-03 1 0 1.36E-03 0 1.36E-03 0 1.36E-03 0 1.36E-03 0 1.36E-03 0 1.36E-03 0 1.385E-02 1.385E-02 0 1.0 1.0 1.10 1.10 1.10 1.10 1.10 1.10</td> <td>A4 1.66E-08 6.97E-02 1.21E-04 2.52E-05 0.78E-09 2.44E-05 29.2% 1.48E-01 9.40E-04 9.36E-01 0 0.339E-07 0.339E-07</td> <td>A5 8.70E-111 8.70E-111 2.40E-03 1.93E-04 4.48E-07 2.66E-12 1.93E-04 1.20E-08 1.23E-02 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.17E-09 1.17E-09 1.17E-03 <t< td=""><td>B1-B7 0</td><td>C1 C1 0</td><td>c2 C2 C3 2.76E-09 1.17E-02 2.53E-04 9.85E-12 1.35E-09 3.52E-06 4.0% 2.43E-01 1.56E-044 1.56E-04 1.56E-04 0 1.56E-04 0 1.56E-04 0 1.64E-01 0</td><td>per f c3 K/W/) 0 <</td><td>c4 2.74E-10 1.61E-03 1.61E-03 1.52E-05 4.71E-13 2.01E-06 4.71E-13 2.01E-03 3.54E-05 3.54E-05 0 2.26E-02 0 2.26E-02 0 2.26E-02 0 2.39E-09 0 2.39E-09 0 2.39E-09 0</td><td>Iunit Total Iotal 3.98E-08 3.37E-01 1.60E-02 1.63E-03 1.63E-03 2.90E-04 1.00% 2.32E-01 3.34E-01 5.83E+00 5.83E+00 5.83E+00 0 1.04E-02 0 0 1.04E-02 0 0 0 0 0 0 0 0 0 0 0 0<</td></t<></td> | A2 1.17E-08 1.17E-03 1.09E-03 1.77E-05 4.49E-11 6.88E-09 1.72E-05 1.04E-01 20.5% 1.04E-01 6.93E-01 6.93E-01 0 0.3.44E-03 0 0.3.44E-03 0 0.3.54E-07 0 0.3.64AE-03 0 0.3.64AE-03 0
 | A3 A3 2.36E-09 1.16E-01 2.32E-04 1.75E-05 1.07E-10 2.07E-09 1.07E-101 2.07E-02 1.07E-101 2.07E-02 1.07E-101 2.07E-02 1.07E-101 2.07E-02 1.07E-102 1.098E+000 1.98E+001 0 1.25E-02 0 1.25E-02 0 1.36E-03 1 0 1.36E-03 0 1.36E-03 0 1.36E-03 0 1.36E-03 0 1.36E-03 0 1.36E-03 0 1.385E-02 1.385E-02 0 1.0 1.0 1.10 1.10 1.10 1.10 1.10 1.10 | A4 1.66E-08 6.97E-02 1.21E-04 2.52E-05 0.78E-09 2.44E-05 29.2% 1.48E-01 9.40E-04 9.36E-01 0 0.339E-07
 | A5 8.70E-111 8.70E-111 2.40E-03 1.93E-04 4.48E-07 2.66E-12 1.93E-04 1.20E-08 1.23E-02 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.23E-03 1.17E-09 1.17E-09 1.17E-03 1.17E-03 <t< td=""><td>B1-B7 0</td><td>C1 C1 0</td><td>c2 C2 C3 2.76E-09 1.17E-02 2.53E-04 9.85E-12 1.35E-09 3.52E-06 4.0% 2.43E-01 1.56E-044 1.56E-04 1.56E-04 0 1.56E-04 0 1.56E-04 0 1.64E-01 0</td><td>per f c3 K/W/) 0 <</td><td>c4 2.74E-10 1.61E-03 1.61E-03 1.52E-05 4.71E-13 2.01E-06 4.71E-13 2.01E-03 3.54E-05 3.54E-05 0 2.26E-02 0 2.26E-02 0 2.26E-02 0 2.39E-09 0 2.39E-09 0 2.39E-09 0</td><td>Iunit Total Iotal 3.98E-08 3.37E-01 1.60E-02 1.63E-03
 1.63E-03 2.90E-04 1.00% 2.32E-01 3.34E-01 5.83E+00 5.83E+00 5.83E+00 0 1.04E-02 0 0 1.04E-02 0 0 0 0 0 0 0 0 0 0 0 0<</td></t<> | B1-B7 0 | C1 C1 0 | c2 C2 C3 2.76E-09 1.17E-02 2.53E-04 9.85E-12 1.35E-09 3.52E-06 4.0% 2.43E-01 1.56E-044 1.56E-04 1.56E-04 0 1.56E-04 0 1.56E-04 0 1.64E-01 0
 | per f c3 K/W/) 0 < | c4 2.74E-10 1.61E-03 1.61E-03 1.52E-05 4.71E-13 2.01E-06 4.71E-13 2.01E-03 3.54E-05 3.54E-05 0 2.26E-02 0 2.26E-02 0 2.26E-02 0 2.39E-09 0 2.39E-09 0 2.39E-09 0
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Waco, TX: LCIA results, resource use, output and waste flows, and carbon emissions & removals per functional unit Unit **A1** A2 А3 **A4 A5** B1-B7 C1 C2 С3 **C4** Total Parameter

LCIA results (per m ² ins	talled inclu	uding pac	<mark>kaging, t</mark> h	lat gives a	in average	thermal	resista	nce o	f RSI=1m ²	² ∙K/W))	
Ozone depletion	kg CFC-11 eq	6.21E-09	7.81E-09	3.59E-09	1.07E-08	8.62E-11	0	0	2.73E-09	0	2.72E-10	3.14E-08
Global warming	kg CO, eq	9.01E-02	3.28E-02	8.43E-02	4.49E-02	7.46E-04	0	0	1.15E-02	0	1.59E-03	2.66E-01
Smog	kg O ₂ eg	1.05E-02	7.31E-04	2.65E-03	1.00E-03	2.38E-05	0	0	2.50E-04	0	4.63E-04	1.56E-02
Acidification	kg SO, eq	1.10E-03	5.70E-05	2.94E-04	7.81E-05	1.91E-06	0	0	1.98E-05	0	1.54E-05	1.57E-03
Eutrophication	kg N eq	1.04E-04	1.19E-05	2.47E-05	1.63E-05	4.43E-07	0	0	4.14E-06	0	1.50E-06	1.63E-04
Carcinogenics	CTUh	2.73E-09	3.01E-11	1.52E-10	4.12E-11	2.64E-12	0	0	9.75E-12	0	4.67E-13	2.97E-09
Non-carcinogenics	CTUh	3.99E-08	4.60E-09	2.63E-09	6.31E-09	5.10E-11	0	0	1.34E-09	0	1.85E-11	5.49E-08
Respiratory effects	kg PM _{2 5} eq	1.74E-04	1.15E-05	1.83E-05	1.57E-05	1.19E-06	0	0	3.49E-06	0	1.99E-06	2.26E-04
Ecotoxicity	CTUe	54.9%	16.4%	1.3%	22.5%	<1%	0%	0%	4.7%	0%	<1%	100%
Fossil fuel depletion	MJ surplus	2.57E-01	6.95E-02	1.27E-01	9.52E-02	1.02E-03	0	0	2.43E-02	0	3.38E-03	5.77E-01
Resource use indicators	i											
Demoviable avienant energy												
used as energy carrier (fuel)	MJ, LHV	5.35E-02	4.42E-04	2.54E-02	6.06E-04	6.80E-04	0	0	1.56E-04	0	3.54E-05	8.08E-02
Renewable primary resources with energy content used as material	MJ, LHV	2.01E-01	1.61E-04	3.45E-02	0	2.05E-04	0	0	0	0	0	2.36E-01
Total use of renewable primary resources with energy content	MJ, LHV	2.54E-01	6.04E-04	5.99E-02	6.06E-04	8.85E-04	0	0	1.56E-04	0	3.54E-05	3.16E-01
Non-renewable primary resources used as an energy carrier (fuel)	MJ, LHV	2.00E+00	4.64E-01	1.61E+00	6.35E-01	1.23E-02	0	0	1.64E-01	0	2.26E-02	4.91E+00
Non-renewable primary resources with energy content used as material	MJ, LHV	1.80E-04	1.39E-06	2.38E-06	0	2.42E-08	0	0	0	0	0	1.84E-04
Total use of non-renewable primary resources with energy content	MJ, LHV	2.00E+00	4.64E-01	1.61E+00	6.35E-01	1.23E-02	0	0	1.64E-01	0	2.26E-02	4.91E+00
Secondary materials	kg	5.83E-01	0	0	0	0	0	0	0	0	0	5.83E-01
Renewable secondary fuels	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0
Non-renewable secondary fuels	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0
Recovered energy	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0
Use of net fresh water resources	m ³	1.85E-01	2.30E-03	4.86E-03	3.15E-03	2.98E-03	0	0	8.04E-04	0	3.92E-06	1.99E-01
Output flows and waste	category	indicators	5									
Hazardous waste disposed	kg	0	0	0	0	0	0	0	0	0	0	0
Non-hazardous waste disposed	kg	0	0	1.65E-03	0	8.50E-03	0	0	0	0	0	1.01E-02
High-level radioactive waste, conditioned, to final repository	kg	2.25E-05	1.60E-07	6.88E-06	2.19E-07	8.10E-07	0	0	5.58E-08	0	2.39E-09	3.07E-05
Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	5.26E-08	6.86E-08	7.31E-08	9.41E-08	1.17E-09	0	0	2.40E-08	0	2.52E-11	3.14E-07
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	3.31E-02	0	6.47E-03	0	0	0	0	0	3.96E-02
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0
Exported energy	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0
Carbon emissions and r	emovals											
Biogenic carbon removal from product	kg CO ₂	1.07E+00	0	5.76E-02	0	0	0	0	0	0	0	1.13E+00
Biogenic carbon emission from product	kg CO ₂	0	0	3.82E-02	0	3.69E-03	0	0	0	0	9.98E-01	1.04E+00
Biogenic carbon removal from packaging	kg CO ₂	2.54E-04	0	0	0	0	0	0	0	0	0	2.54E-04
Biogenic carbon emission from packaging	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Biogenic carbon emission from combustion of waste from renewable sources used in production processes	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Calcination carbon emissions	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Carbonation carbon removals	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Carbon emissions from combustion of waste from non-renewable sources used in production processes	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0

Wilkes-Barre, PA: LCIA results, resource use, output & waste flows, and carbon emissions & removals per functional unit Unit Parameter **A1** A2 А3 **A**4 A5 B1-B7 C1 C2 C3 C4 Total

I CIA results (per m² installed including packaging, that gives an average thermal resistance of PSI-1m² K/W)

LCIA results (per m ⁻ ins	talled incli	uding pac	kaging, th	lat gives a	in average	thermal	resista	nce o		⁻•K/₩)		
Ozone depletion	kg CFC-11 eq	6.29E-09	1.58E-08	2.78E-09	1.47E-08	8.62E-11	0	0	2.73E-09	0	2.72E-10	4.26E-08
Global warming	kg CO ₂ eq	8.65E-02	6.61E-02	5.13E-02	6.17E-02	7.46E-04	0	0	1.15E-02	0	1.59E-03	2.79E-01
Smog	kg O ₃ eq	1.03E-02	1.47E-03	1.89E-03	1.38E-03	2.38E-05	0	0	2.50E-04	0	4.63E-04	1.58E-02
Acidification	kg SO ₂ eq	1.10E-03	1.15E-04	2.24E-04	1.07E-04	1.91E-06	0	0	1.98E-05	0	1.54E-05	1.58E-03
Eutrophication		2 59E-09	2.39L-03	1.88L-03	5.66E-11	4.43L-07	0	0	975E-12	0	4.67E-13	2.84F-09
Non-carcinogenics	CTUh	3.94E-08	9.28E-09	1.82E-09	8.66E-09	5.10E-11	0	0	1.34E-09	0	1.85E-11	6.06E-08
Respiratory effects	kg PM _{a =} eq	1.77E-04	2.32E-05	1.36E-05	2.16E-05	1.19E-06	0	0	3.49E-06	0	1.99E-06	2.42E-04
Ecotoxicity	CTUe	41.7%	27.6%	<1%	25.8%	<1%	0%	0%	3.9%	0%	<1%	100%
Fossil fuel depletion	MJ surplus	2.34E-01	1.40E-01	6.38E-02	1.31E-01	1.02E-03	0	0	2.43E-02	0	3.38E-03	5.97E-01
Resource use indicators	5											
Renewable primary energy used as energy carrier (fuel)	MJ, LHV	5.38E-02	8.92E-04	1.54E-02	8.32E-04	6.80E-04	0	0	1.56E-04	0	3.54E-05	7.18E-02
Renewable primary resources with energy content used as material	MJ, LHV	2.01E-01	3.25E-04	1.05E-02	0	2.05E-04	0	0	0	0	0	2.12E-01
Total use of renewable primary resources with energy content	MJ, LHV	2.55E-01	1.22E-03	2.59E-02	8.32E-04	8.85E-04	0	0	1.56E-04	0	3.54E-05	2.84E-01
Non-renewable primary resources used as an energy carrier (fuel)	MJ, LHV	1.84E+00	9.35E-01	1.04E+00	8.73E-01	1.23E-02	0	0	1.64E-01	0	2.26E-02	4.89E+00
Non-renewable primary resources with energy content used as material	MJ, LHV	1.84E-04	2.80E-06	2.37E-06	0	2.42E-08	0	0	0	0	0	1.89E-04
Total use of non-renewable primary resources with energy content	MJ, LHV	1.84E+00	9.35E-01	1.04E+00	8.73E-01	1.23E-02	0	0	1.64E-01	0	2.26E-02	4.89E+00
Secondary materials	kg	5.74E-01	0	0	0	0	0	0	0	0	0	5.74E-01
Renewable secondary fuels	MJ, LHV	0	0	0	0	0	0	0	0	0	0	o
Non-renewable secondary fuels	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0
Recovered energy	MJ, LHV	0	0	0	0	0	0	0	0	0	0	ο
Use of net fresh water resources	m ³	2.12E-01	4.64E-03	3.70E-02	4.33E-03	2.99E-03	0	0	8.04E-04	0	1.54E-04	2.62E-01
Output flows and waste	category	indicators	5									
Hazardous waste disposed	kg	0	0	0	0	0	0	0	0	0	0	0
Non-hazardous waste disposed	kg	0	0	1.27E-03	0	8.50E-03	0	0	0	0	0	9.77E-03
High-level radioactive waste, conditioned, to final repository	kg	2.29E-05	3.22E-07	5.24E-06	3.00E-07	8.10E-07	0	0	5.58E-08	0	2.39E-09	2.97E-05
Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	5.28E-08	1.38E-07	5.44E-08	1.29E-07	1.17E-09	0	0	2.40E-08	0	2.52E-11	4.00E-07
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	1.86E-02	0	6.47E-03	0	0	0	0	0	2.51E-02
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0
Exported energy	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0
Carbon emissions and r	emovals											
Biogenic carbon removal from product	kg CO ₂	1.05E+00	0	5.76E-02	0	0	0	0	0	0	0	1.11E+00
Biogenic carbon emission from product	kg CO ₂	0	0	2.15E-02	0	3.73E-03	0	0	0	0	1.01E+00	1.03E+00
Biogenic carbon removal from packaging	kg CO ₂	2.54E-04	0	0	0	0	0	0	0	0	0	2.54E-04
Biogenic carbon emission from packaging	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Biogenic carbon emission from combustion of waste from renewable sources used in production processes	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Calcination carbon emissions	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Carbonation carbon removals	kg CO ₂	0	0	0	0	0	0	0	0	0	0	0
Carbon emissions from combustion of waste from non-renewable sources used	kg CO ₂	0	0	0	0	0	0	0	0	0	0	o

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