

EPD_Environmental Product Declaration

CHAIR TRIM S.50_ TEX TAPIZED BACKREST_WHITE, ARM 2D POL.WHITE,BASE POL.B

Ref_TR5011M14

Report Data 24.04.2019

Certificates

ISO 9001
 ISO 14001
 ISO 14006. Ecodesign
 PEFC. Programme for the Endorsement of Forest Certification
 FSC. Forest Stewardship Council
 GBCe. Green Building Council Spain



1. Details of the system

Type New Product Redesign Year of the study 2019

Declaration Scope: From extraction of raw materials to complete desk solution, including end of life.
 The detail of each of the phases considered and its scope is included below

Materials	Production	Transport	Use	End of life
Including the extraction and processing of raw materials and component sourcing to its delivery at the Actiu Technological Park.	Consider the production and assembly processes used in Actiu.	Includes from the Actiu Technological Park to our customers facilities. Transport is provided through light commercial transport.	This stage has not environmentally relevance for life cycle analysis.	Any product can be disposed of in different ways, or become a resource. Drawing on national average dates, it is supposed that aluminium, wood and cardboard packaging is recycled, while the rest is treated as urban waste.

2. RAW MATERIALS USED FOR THE PRODUCT. Product specifications, including packaging

	KG of product solution	Percentage %	Quality of finishes	
			Production of raw materials	Processed
ALUMINIUM 100% rec.	0,280	1,53%	Bibliographic data	Bibliographic data
STEEL	5,018	27,36%	Bibliographic data	Bibliographic data
PAPERBOARD	2,980	16,25%	Bibliographic data	Bibliographic data
PP	5,936	32,36%	Bibliographic data	Bibliographic data
POLYAMIDE	1,545	8,42%	Bibliographic data	Bibliographic data
TOTAL	18,343	100,00%		
% recycled materials		33,42%		
% recyclable materials		51,63%		

ACTIU product design is made to facilitate the separation of its components and recycling. The product is designed to help companies LEED® certification. You can obtain LEED® credits with our product. On the one hand, contains a high percentage of recycled materials and is manufactured with low emissions to the atmosphere. On the other hand, has been designed with ergonomic standards. Finally, it can be easily recycled because it is designed for disassembly and identification of very simple components. This will help you achieve LEED® credits for employee health and innovation. The verification process life cycle analysis is performed by independent experts in Ecodesign (Consultant Business Area) and using the criteria of the standard ISO 14006 "Ecodesign".

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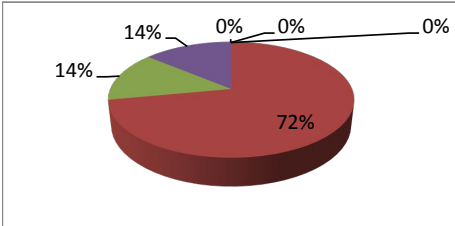
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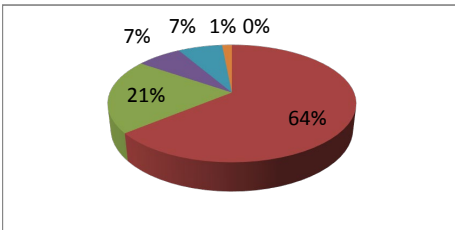
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3. Impacts produced by category. Five substances area included in each category have the greatest impact in each category

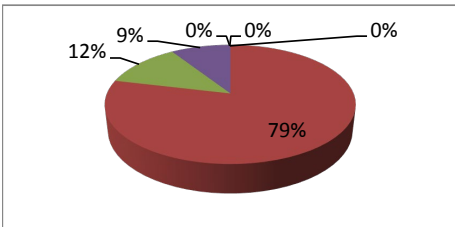
Impact category	Substance	Unit	Total
ACIDIFICATION	Remaining Substances	kg SO2 eq	0
	Sulfur dioxide	kg SO2 eq	0,159083179
	Nitrogen dioxide	kg SO2 eq	0,031025485
	Ammonia	kg SO2 eq	0,030798516
	Sulfur oxides	kg SO2 eq	0
	0	0	0
	TOTAL	kg SO2 eq	0,097661982



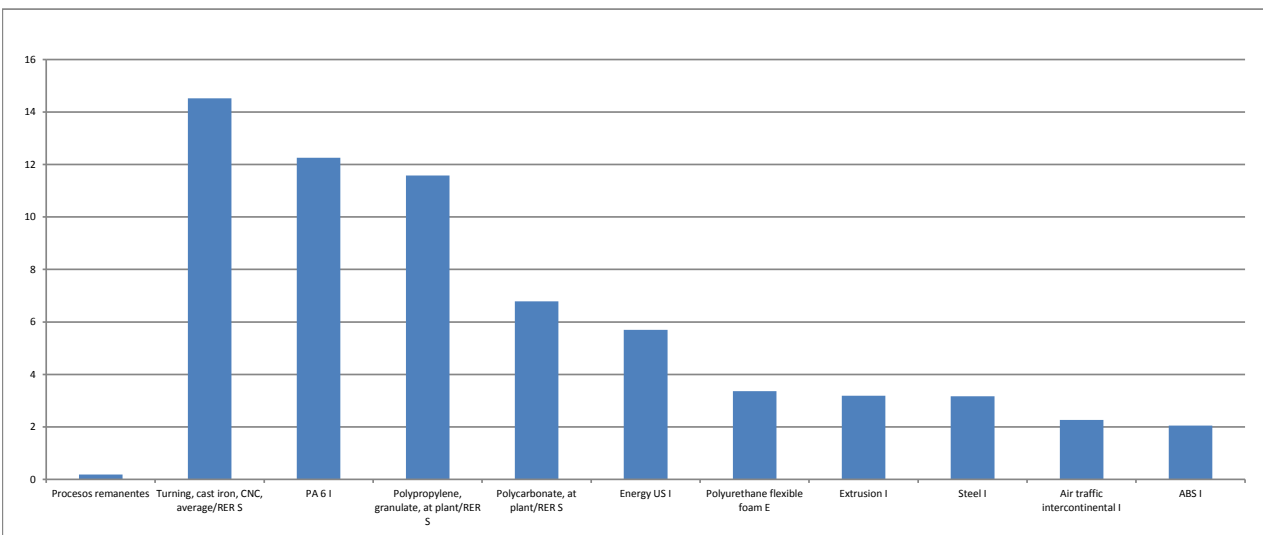
Impact category	Substance	Unit	Total
EUTROPHICATION	Remaining Substances	kg PO4--- eq	0
	Nitrogen dioxide	kg PO4--- eq	0,020099838
	Dinitrogen monoxide	kg PO4--- eq	0,006438535
	Ammonia	kg PO4--- eq	0,002195012
	Ammonium, ion	kg PO4--- eq	0,002164296
	Phosphate	kg PO4--- eq	0,000477132
	TOTAL	kg SO2 eq	0,013773091



Impact category	Substance	Unit	Total
GLOBAL WARMING	Remaining Substances	kg CO2 eq	0
	Carbon monoxide, fossil	kg CO2 eq	43,62334663
	Carbon dioxide	kg CO2 eq	6,720149643
	Carbon dioxide, fossil	kg CO2 eq	5,099499768
	Dinitrogen monoxide	kg CO2 eq	0
	0	0	0
	TOTAL	kg CO2 eq	18,57335336



Impact of group elements (materials, processes, energy, use, transport and waste)



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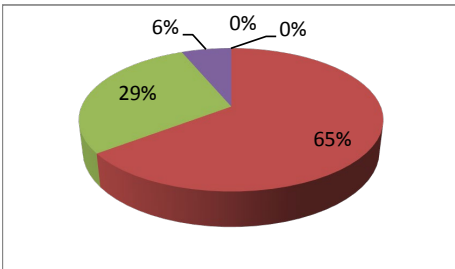
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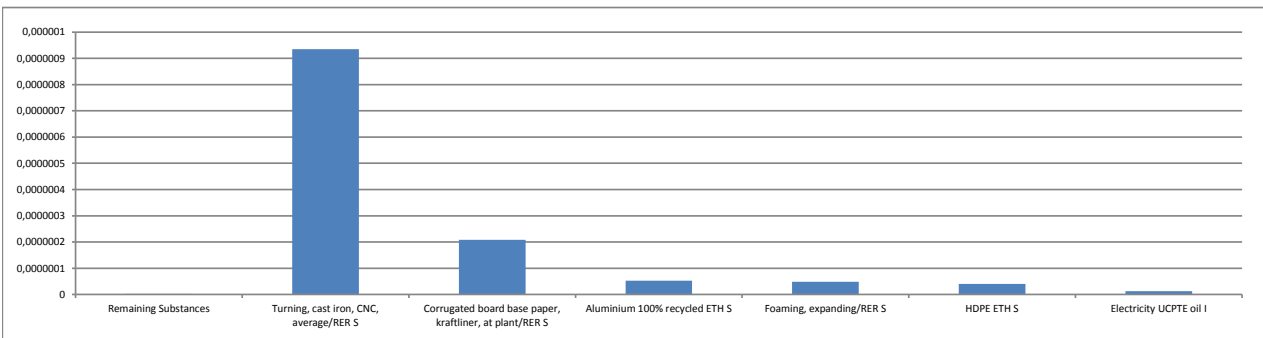
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4. Impacts produced by category. Five substances area included in each category have the greatest impact in each category

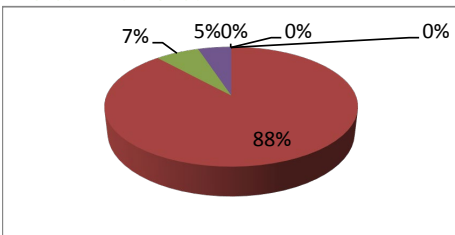
Impact category	Substance	Unit	Total	
REDUCING OZONE	Remaining Substances	kg CFC-11 eq	0	
	Methane, bromotrifluoro-, Halon 1301	kg CFC-11 eq	2,08709E-07	
	Methane, tetrachloro-, CFC-10	kg CFC-11 eq	9,3496E-08	
	Methane, bromochlorodifluoro-, Halon 1211	kg CFC-11 eq	2,04394E-08	
		0	0	0
		0	0	0
	TOTAL		kg SO2 eq	9,83988E-07



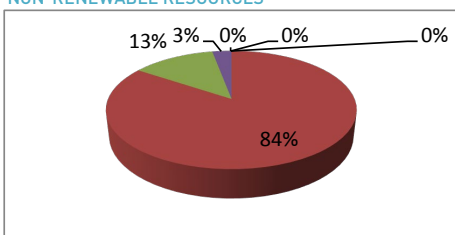
Impact of group elements (materials, processes, energy, use, transport and waste)



Impact category	Substance	Unit	Total
PHOTOCHEMICAL SMOG	Remaining Substances	kg C2H4 eq	0
	Carbon monoxide	kg C2H4 eq	0,052022175
	Benzene	kg C2H4 eq	0,003938928
	Hydrocarbons, unspecified	kg C2H4 eq	0,002993446
	Sulfur dioxide	kg C2H4 eq	0
	Methane	kg C2H4 eq	0
	TOTAL		kg SO2 eq



Impact category	Substance	Unit	Total
NON-RENEWABLE RESOURCES	Remaining Substances	MJ eq	0
	Coal, 18 MJ per kg, in ground	MJ eq	998,3073898
	Coal, 29.3 MJ per kg, in ground	MJ eq	150,5007681
	Energy, from coal	MJ eq	35,05579675
	Gas, natural, in ground	MJ eq	0
	Energy, from gas, natural	MJ eq	0
	TOTAL		kg SO2 eq



WASTE	Total NO HAZARDOUS	KG	0,00331
	Total HAZARDOUS	KG	0,00461



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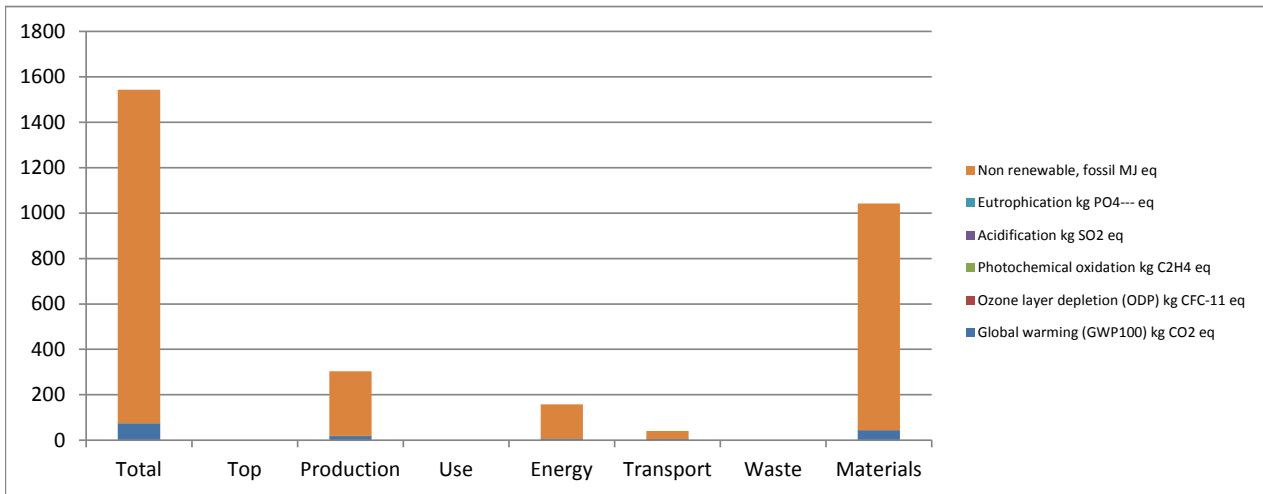
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5. Impact produced by life cycle stage. In includes six stages: Production, Use, Energy, Transport, Waste and Materials.

Impact Category	Uts.	Total	Top	Production	Use	Energy	Trsp.	Waste	Mat.
Global warming (GWP100)	kg CO2 eq	74,0163494	0	18,57335336	0	6,720149643	5,099	0	43,62
Ozone layer depletion (ODP)	kg CFC-11 eq	1,30663E-06	0	9,83988E-07	0	2,04394E-08	2E-07	0	9E-08
Photochemical oxidation	kg C2H4 eq	0,082572523	0	0,023617974	0	0,002993446	0,004	0	0,052
Acidification	kg SO2 eq	0,318569162	0	0,097661982	0	0,030798516	0,031	0	0,159
Eutrophication	kg PO4--- eq	0,042506476	0	0,013773091	0	0,002195012	0,006	0	0,02
Non renewable, fossil	MJ eq	1468,626229	0	284,7622741	0	150,5007681	35,06	0	998,3



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6. Ecodesign improvements considered.

ACTIU products are designed considering different environmental strategies. According to their level of complexity, the strategies used are classified into one of the following. Here are some of the choices for ecodesign significant product.

PRODUCT STRATEGY ECODESIGN	CHOICES CHOSEN WITH THE PRODUCT
Low impact materials selection	<p>Designed to be manufactured with 33,42% recycled materials</p> <p>100% recycled aluminium</p> <p>Powder paint with no VOC emissions</p> <p>Limitation on use of hazardous substances. Without chromium, mercury, cadmium</p> <p>Recycled cardboard packaging</p>
Optimization of product techniques	<p>Optimizing energy use throughout the production process</p> <p>Painting processes of high technology systems.</p> <p>Recovery unused paint in the process. Zero emissions of VOCs.</p> <p>Automated manufacturing systems. Planning the cutting process.</p> <p>Closed water circuits. Heat recovery.</p> <p>Optimization of energy use in the manufacturing process: Heat recovery in the painting process, automated manufacturing systems for energy saving.</p>
Optimization of distribution system	<p>Reducing energy. Removable systems. Low volume packaging. Spaces optimization.</p> <p>Saving energy and Flexibility. Modular system adaptable between different models.</p>
Optimization of product life	<p>15 years minimum life time</p> <p>Product is easy to maintain and clean. It can be easily cleaned with a damp cloth with water.</p> <p>The product is part of a modular program. Easy to modify, extend and repair to maximize its life time.</p>
Optimization of the end of system life	<p>Easy separation of product components</p> <p>High degree of recyclability of the product: 51,63%</p> <p>Packaging reuse system between ACTIU and its suppliers to avoid the generation of waste.</p>

Bibliography and references

ISO 14025 Environmental labels and declarations – Tipo III

ISO 14044:2006 "Environmental management. Life time cycle analysis. Requirements and guidelines "

UNE - EN ISO 14006:2011 "Environmental management systems. Guidelines to incorporate ecodesign "

Methods to calculate environmental impact

Base datos: ETH-ESU System processes, Ecoinvent system processes, IDEMAT, EDIP, IPCC, Ecological Scarcity 2006.