

EPD Environmental Product Declaration

TRAMA 10

Ref. TM14000

Report Data 17.02.2012

Certificates

ISO 9001:2008

ISO 14001:2004

ISO 14006. Ecodiseño

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 ☐ Studied Year 2010

Declaration From extraction of raw materials to complete desk solution, including end of life.
Scope: 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
Wood	20,706	60,88%	Bibliographic data	Bibliographic data
Steel	0,0158	0,05%	Bibliographic data	Bibliographic data
Aluminium	7,666	22,54%	Bibliographic data	Bibliographic data
Corrugated Board	4,434	13,04%	Bibliographic data	Bibliographic data
Others	0,31332	0,92%	Bibliographic data	Bibliographic data
Plastic	0,8753	2,57%	Bibliographic data	Bibliographic data
TOTAL	34,01042	100,00%		
% recycled materials		84,28%		
% recyclable materials		96,51%		

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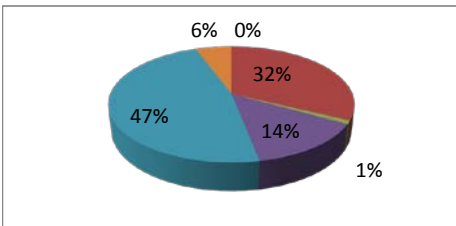
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3. Impacts produced by category. Five substances area included in each category have the greatest impact in each category

Impact category

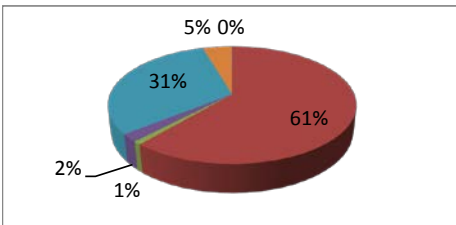
ACIDIFICATION



Substance	Unit	Total
Remaining Substances	kg SO2 eq	0
Ammonia	kg SO2 eq	0,219480911
Nitrogen dioxide	kg SO2 eq	0,00639816
Nitrogen oxides	kg SO2 eq	0,094011103
Sulfur dioxide	kg SO2 eq	0,322504772
Sulfur oxides	kg SO2 eq	0,038690121
TOTAL	kg SO2 eq	0,681085066

Impact category

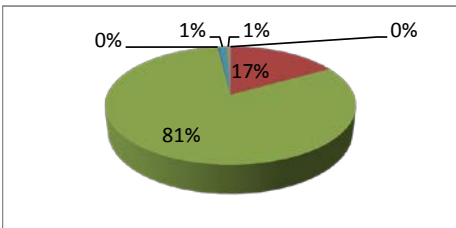
EUTROFIZATION



Substance	Unit	Total
Remaining Substances	kg PO4--- eq	5,41429E-05
Ammonia	kg PO4--- eq	0,048011449
Dinitrogen monoxide	kg PO4--- eq	0,00070822
Nitrogen dioxide	kg PO4--- eq	0,001663521
Nitrogen oxides	kg PO4--- eq	0,024442887
Ammonium, ion	kg PO4--- eq	0,003605378
TOTAL	kg SO2 eq	0,089577726

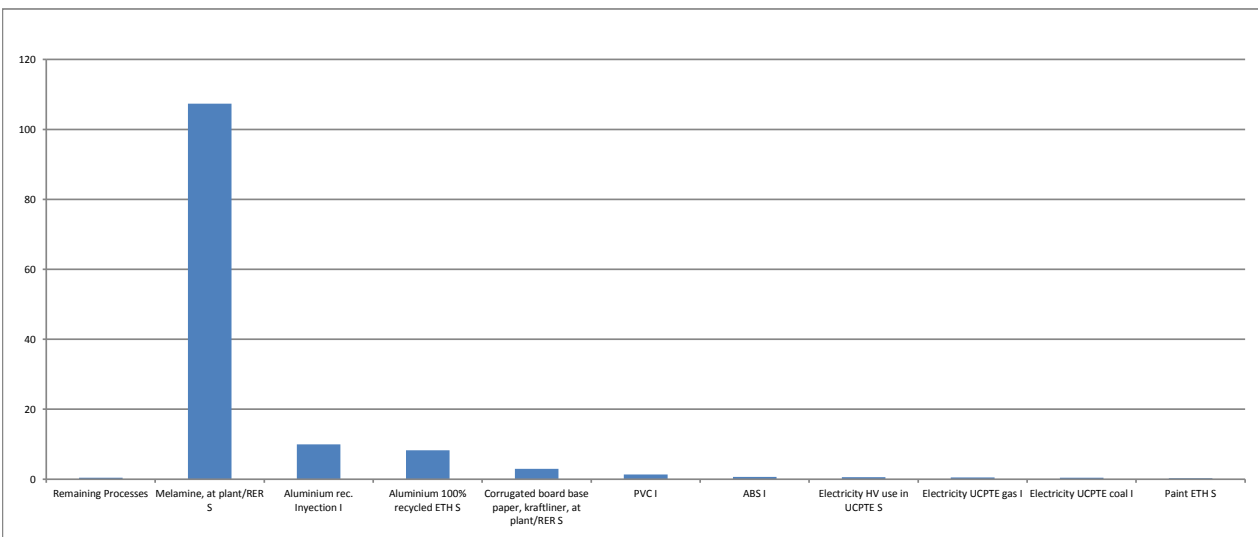
Impact category

GLOBAL WARMING



Substance	Unit	Total
Remaining Substances	kg CO2 eq	0,244779416
Carbon dioxide	kg CO2 eq	21,30687407
Carbon dioxide, fossil	kg CO2 eq	103,5600167
Carbon monoxide, fossil	kg CO2 eq	0,289390111
Dinitrogen monoxide	kg CO2 eq	1,612562984
Methane	kg CO2 eq	0,673932978
TOTAL	kg SO2 eq	133,640855

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



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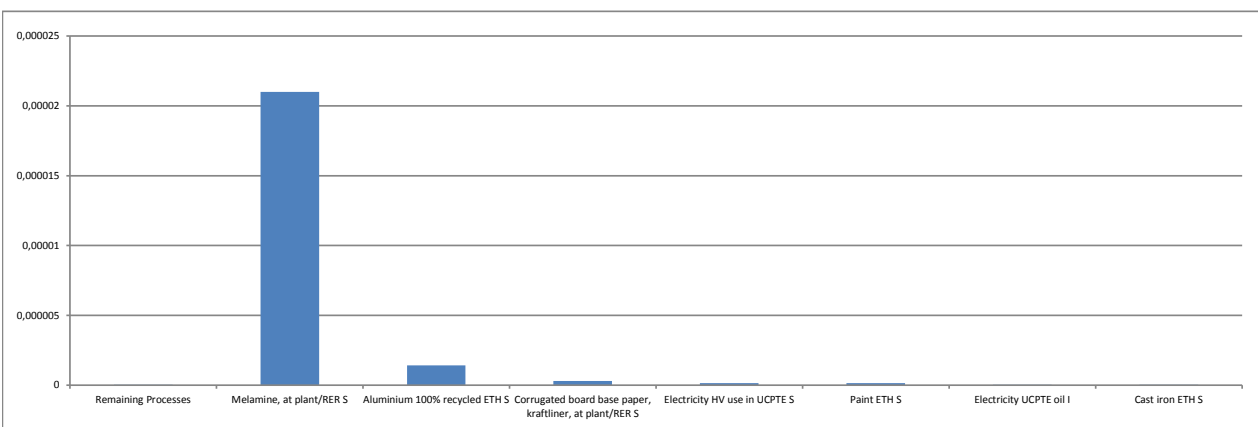
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4. Impacts produced by category. Five substances area included in each category have the greatest impact in each category

Impact category	Substance	Unit	Total
REDUCING OZONE	Remaining Substances	kg CFC-11 eq	2,23487E-08
	Methane, bromochlorodifluoro-, Halon 1211	kg CFC-11 eq	1,67665E-05
	Methane, bromotrifluoro-, Halon 1301	kg CFC-11 eq	5,27789E-06
	Methane, chlorodifluoro-, HCFC-22	kg CFC-11 eq	9,2723E-07
	Methane, tetrachloro-, CFC-10	kg CFC-11 eq	1,16629E-07
	TOTAL	kg SO2 eq	2,31106E-05

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



Impact category	Substance	Unit	Total
PHOTOCHEMICAL SMOG	Remaining Substances	kg C2H4 eq	0,000386247
	Benzene	kg C2H4 eq	0,000148848
	Butane	kg C2H4 eq	0,000641683
	Carbon monoxide	kg C2H4 eq	0,000463676
	Carbon monoxide, biogenic	kg C2H4 eq	0,000147833
	Carbon monoxide, fossil	kg C2H4 eq	0,004976773
	TOTAL	kg SO2 eq	0,087484564

Impact category	Substance	Unit	Total
NON-RENEWABLE RESOURCES	Remaining Substances	MJ eq	7,00058536
	Coal, 18 MJ per kg, in ground	MJ eq	24,75920239
	Coal, 29.3 MJ per kg, in ground	MJ eq	36,87722716
	Coal, brown, 8 MJ per kg, in ground	MJ eq	7,550948415
	Coal, brown, in ground	MJ eq	61,37454295
	Coal, hard, unspecified, in ground	MJ eq	106,9256182
	TOTAL	kg SO2 eq	2522,157711

WASTE	Total NO HAZARDOUS	KG	10,3
	Total HAZARDOUS	KG	0,018

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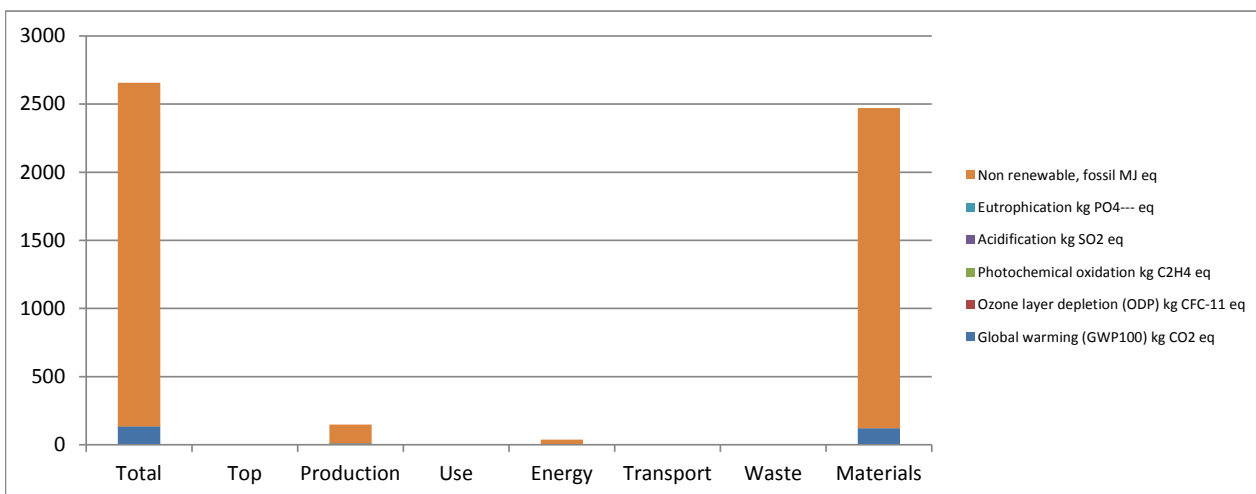
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5. Impact produced by life cycle stage. In includes six stages: Production, Use, Energy, Transport, Waste and Materials.

Impact Category	Uts.	Total	Top	Production	Use	Energy	Trsp.	Waste	Mat.
Global warming (GWP100)	kg CO2 eq	133,640855	0	9,979039182	0	1,956844034	0,325	0	121,4
Ozone layer depletion (ODP)	kg CFC-11 eq	2,31106E-05	0	0	0	2,01955E-07	9E-10	0	2E-05
Photochemical oxidation	kg C2H4 eq	0,087484564	0	0,018559386	0	0,001003775	5E-04	0	0,067
Acidification	kg SO2 eq	0,681085066	0	0,1602194	0	0,008978673	0,005	0	0,507
Eutrophication	kg PO4--- eq	0,089577726	0	0,001594528	0	0,00057975	9E-04	0	0,087
Non renewable, fossil	MJ eq	2522,157711	0	138,9102198	0	35,20619949	0,017	0	2348



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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
Low impact materials selection	Designed to be manufactured with 84% recycled materials
	100% recycled aluminium
	Powder paint with no VOC emissions
	Limitation on use of hazardous substances. Without chromium, mercury, cadmium
	Board from recycled Wood fibers
	Adhesives for thickness table set without VOC contents.
Optimization of product techniques	Sustainable E1 Woods according to EN 13986 / low emissions that do not emit formaldehyde.
	Recycled cardboard packaging
	Optimizing energy use throughout the production process
	Low manufacturing energy consumption. Minimum environmental impact.
	Painting processes of high technology systems.
	Recovery unused paint in the process. Zero emissions of VOCs.
Optimization of distribution system	Closed water circuits. Heat recovery.
	Automated manufacturing systems. Planning the cutting process.
Optimization of product life	Reducing energy. Removable systems. Low volume packaging. Spaces optimization.
	Saving energy and Flexibility. Modular system adaptable between different models.
	Long life guarantees
	Adaptability and growth facilities.
Optimization of the end of system life	Replacement parts possibilities.
	Easy Maintenance
	Easy separation of product components
	High degree of recyclability of the product: 97%
	Packaging reuse system between ACTIU and its providers to avoid waste generation

Bibliography and references

ISO 14025 Environmental labels and declarations – Type III

UNE-EN-ISO 150301:2003 "Ecodesign".

ISO 14006 "Ecodesign"

ISO 14006 "Ecodesign"

Environmental impacts methods

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

This product has been manufactured at the facilities of ACTIU BERBEGAL Y FORMAS, S.A.