EPD Environmental Product Declaration

VIVA chair

Ref. 5300G10

Report Data 07.07.2011

Certificates

ISO 9001:2008
ISO 14001:2004
UNE 150301. 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 2009
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
Steel	2,946	41,92%	Bibliographic data	Bibliographic data
Plastic	1,6	22,77%	Bibliographic data	Bibliographic data
Corrugated Board	2,481	35,31%	Bibliographic data	Bibliographic data
TOTAL	7,027	100,00%		
% recicled materials		35,31%		
% reciclable materials		97,15%		

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 identificacion of very simple components. This will help you achieve LEED® credits for employee health and innovation

La verificación del proceso de análisis de ciclo de vida se realiza por expertos en Ecodiseño independientes (Consultora Esfera de Negocios) y mediante los criterios de las norma UNE 150301:2003 "Ecodiseño".

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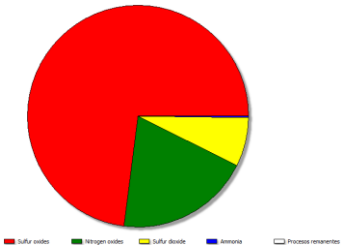
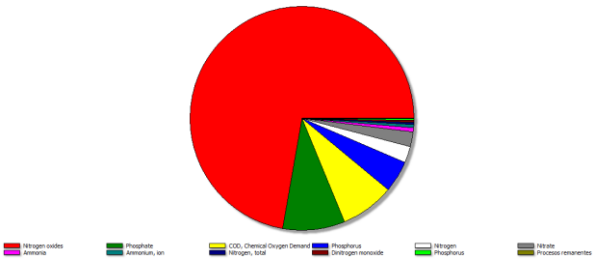
3. Impactos Producidos por Categoría. Se incluyen las cinco Substances de cada categoría que más impacto tienen en cada una de ellas

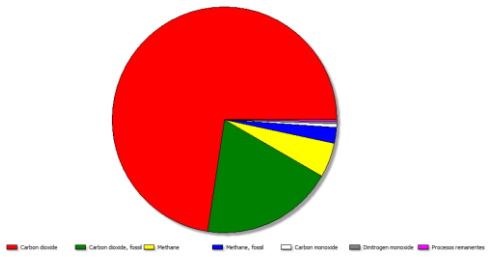
Impact category	Substance	Unidad	Total
ACIDIFICATION	Substancias remanentes	kg SO2 eq	0
	Ammonia	kg SO2 eq	0,00028
	Nitrogen oxides	kg SO2 eq	0,030398
	Sulfur dioxide	kg SO2 eq	0,011031
	Sulfur oxides	kg SO2 eq	0,112721
	TOTAL	kg SO2 eq	0,154429



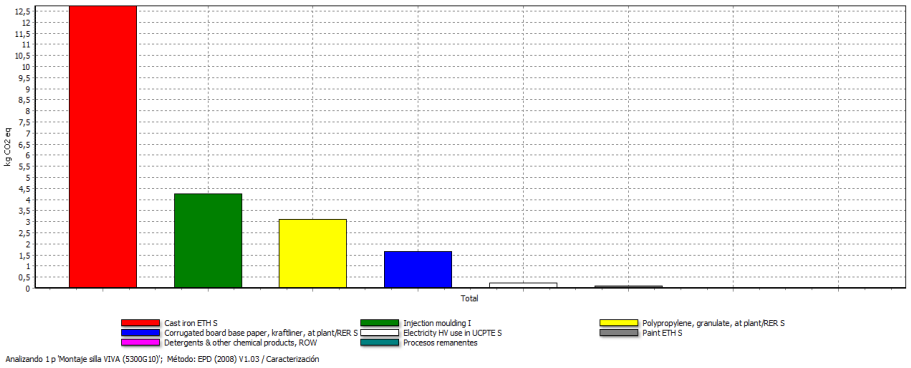
Impact category	Substance	Unidad	Total
EUTROFIZATION	Substancias remanentes	kg PO4--- eq	7,46E-06
	Ammonia	kg PO4--- eq	6,12E-05
	Dinitrogen monoxide	kg PO4--- eq	3,23E-05
	Nitrogen oxides	kg PO4--- eq	0,007903
	Ammonium, ion	kg PO4--- eq	4,77E-05
	COD, Chemical Oxygen Demand	kg PO4--- eq	0,000846
	TOTAL	kg PO4--- eq	0,010948



Impact category	Substance	Unidad	Total
GLOBAL WARMING	Substancias remanentes	kg CO2 eq	0,047531
	Carbon dioxide	kg CO2 eq	16,08312
	Carbon dioxide, fossil	kg CO2 eq	4,226952
	Carbon monoxide	kg CO2 eq	0,123121
	Dinitrogen monoxide	kg CO2 eq	0,073475
	Methane	kg CO2 eq	1,107866
	TOTAL	kg CO2 eq	22,15582



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



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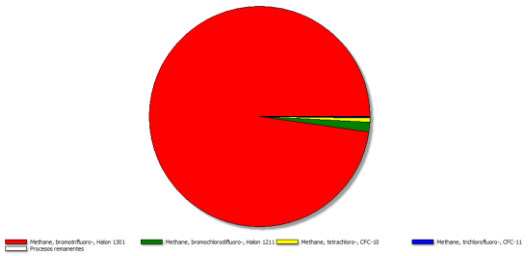
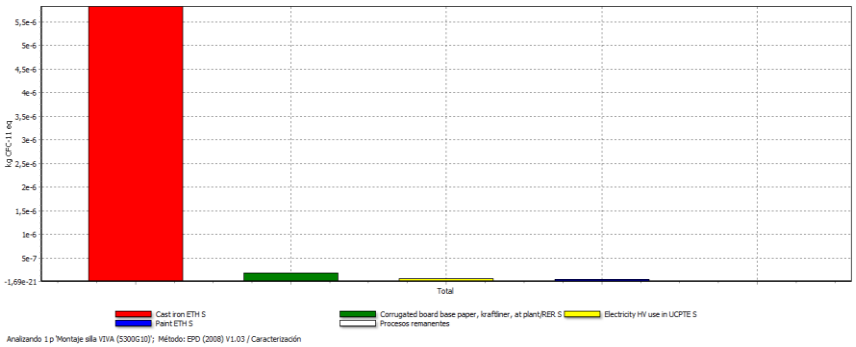
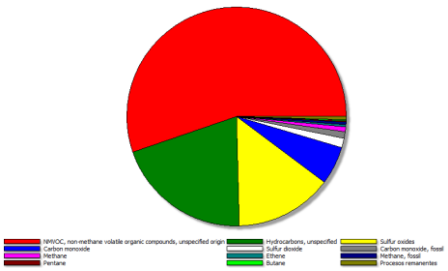
Impact category	Substance	Unidad	Total
REDUCING OZONE	Substancias remanentes	Kg CFC-11 eq	5,58E-09
	Methane, bromochlorodifluoro-, Halon 1211	Kg CFC-11 eq	8,58E-08
	Methane, bromotrifluoro-, Halon 1301	Kg CFC-11 eq	5,97E-06
	Methane, tetrachloro-, CFC-10	Kg CFC-11 eq	3,57E-08
	Methane, trichlorofluoro-, CFC-11	Kg CFC-11 eq	9,89E-09
	TOTAL	kg CFC-11 eq	6,1E-06



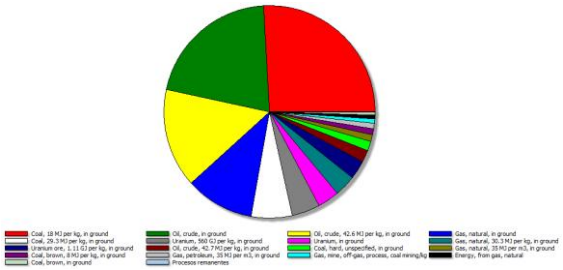
Impact of group elements (materials, processes, energy, use, transport and waste)



Impact category	Substance	Unidad	Total
PHOTOCHEMICAL SMOG	Substancias remanentes	kg C2H4 eq	0,000193
	Butane	kg C2H4 eq	4,64E-05
	Carbon monoxide	kg C2H4 eq	0,002117
	Carbon monoxide, fossil	kg C2H4 eq	0,000342
	Ethene	kg C2H4 eq	0,000132
	Hydrocarbons, unspecified	kg C2H4 eq	0,007565
	TOTAL	kg C2H4 eq	0,037621



Impact category	Substance	Unidad	Total
NON-RENEWABLE RESOURCES	Substancias remanentes	MJ eq	0,344624
	Coal, 18 MJ per kg, in ground	MJ eq	105,7772
	Coal, 29.3 MJ per kg, in ground	MJ eq	25,784
	Coal, brown, 8 MJ per kg, in ground	MJ eq	3,659152
	Coal, brown, in ground	MJ eq	1,742946
	Coal, hard, unspecified, in ground	MJ eq	5,936118
	TOTAL	MJ eq	407,7763



WASTE	Total NO HAZARDOUS	KG	0,371
	Total HAZARDOUS	KG	0,00587

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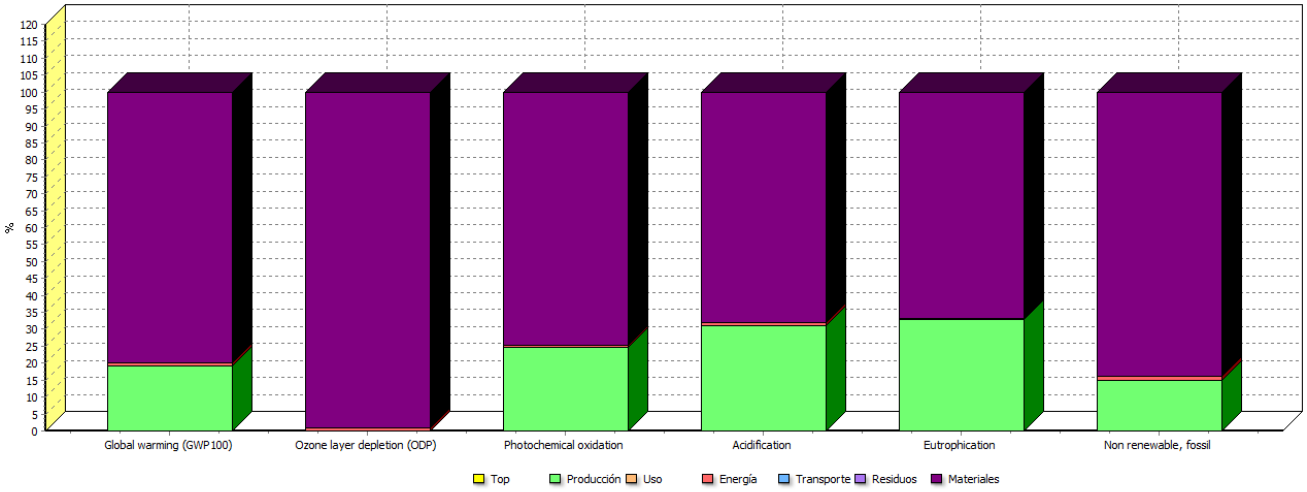
4. Impact produced by life cycle stage. In includes six stages: Production, Use, Energy, Transport, Waste and Materials.

Impact category	Uts	Total	Top	Production	Use	Energy	Transport	Waste	Materials
Global warming	kg CO2 eq	22,15582	0	4,255832	0	0,23077	4,9E-05	0	17,66917
Ozone layer depletion	kg CFC-11 eq	6,1E-06	0	0	0	5,31E-08	6,51E-11	0	6,05E-06
Photochemical oxidation	kg C2H4 eq	0,037621	0	0,00929	0	0,000173	2,4E-07	0	0,028158
Acidification	kg SO2 eq	0,154429	0	0,04808	0	0,0015	3,69E-07	0	0,104849
Eutrophication	kg PO4--- eq	0,010948	0	0,003591	0	5,61E-05	2,05E-08	0	0,007301
Non renewable, fossil	MJ eq	407,7763	0	60,50815	0	5,129983	0,001218	0	342,137



Analizando 1 p 'Montaje silla VIVA (5300G10)'; Método: EPD (2008) V1.03 / Caracterización

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5. Ecodesign improvements considered.

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

PRODUCT STRATEGY ECODESIGN	CHOICES
Low impact materials selection	Designed to be manufactured with 35% recycled materials 100% recycled aluminium Powder paint with no VOC amissions Limitation on use of hazardous substances. Whithout chromium, mercury, cadmium PUR without CFC or HCFC Recycled cardboard packaging
Optimization of product techniques	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. Closed water circuits. Heat recovery. Automated manufacturing systems. Planning the cutting process.
Optimization of distribution system	Reducing energy. Removable systems. Low volume packaging. Spaces optimization. Saving energy and Flexibility. Modular system adaptable between diferent models.
Optimization of product life	Long life guarantees Adaptability and growth facilities. Replacement parts possibilities. Easy Maintenace
Optimization of the end of system life	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 14044:2006 "Environmental management. Life cycle analysis. Requirements and guidelines"
UNE 150301:2003 "Ecodesign"
Environmental impacts methods
Data base: ETH-ESU System processes, Ecoinvent system processes, IDEMAT, EDIP, IPCC, Ecological Scarcity 2006.