

# EPD Environmental Product Declaration

## WINNER-40 chair

Ref. W4112K52

Report Data 17.04.2012

### 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
Aluminium	1,487	7,63%	Bibliographic data	Bibliographic data
Coarrugated Board	2,825	14,49%	Bibliographic data	Bibliographic data
Steel	1,4748	7,57%	Bibliographic data	Bibliographic data
Plastic	13,5552	69,55%	Bibliographic data	Bibliographic data
Others	0,148	0,76%	Bibliographic data	Bibliographic data
<b>TOTAL</b>	<b>19,49</b>	<b>100,00%</b>		
<b>% recycled materials</b>		<b>22,12%</b>		
<b>% recyclable materials</b>		<b>94,46%</b>		

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 UNE 150301:2003 "Ecodesign".

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

[www.actiu.com](http://www.actiu.com)

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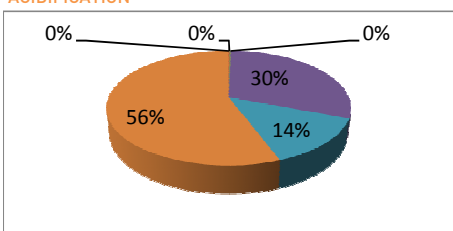
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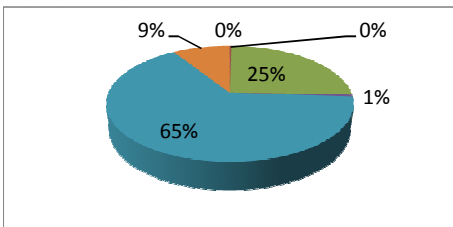
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### 3. Impacts produced by category. Five substaces area included in each category have the greatest impact in each category

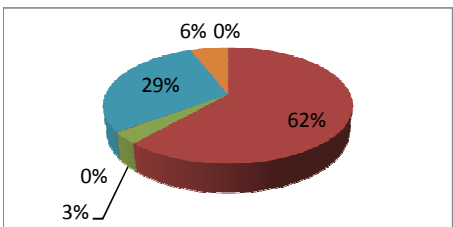
Impact category	Substance	Unit	Total
<b>ACIDIFICATION</b>	Remaining Substances	kg SO2 eq	0
	Ammonia	kg SO2 eq	0,000839352
	Nitrogen dioxide	kg SO2 eq	0,001280147
	Nitrogen oxides	kg SO2 eq	0,178621113
	Sulfur dioxide	kg SO2 eq	0,079016105
	Sulfur oxides	kg SO2 eq	0,326793204
	<b>TOTAL</b>	<b>kg SO2 eq</b>	<b>0,586549921</b>



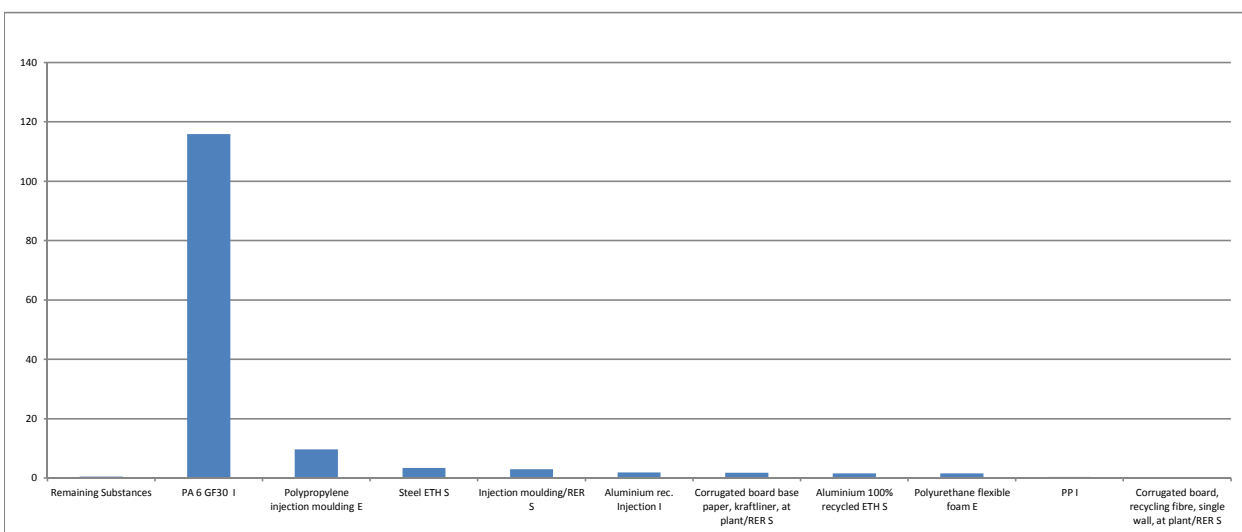
Impact category	Substance	Unit	Total
<b>EUTROFIZATION</b>	Remaining Substances	kg P04--- eq	1,90175E-05
	Ammonia	kg P04--- eq	0,000183608
	Dinitrogen monoxide	kg P04--- eq	0,017999492
	Nitrogen dioxide	kg P04--- eq	0,000332838
	Nitrogen oxides	kg P04--- eq	0,046441489
	Ammonium, ion	kg P04--- eq	0,006391197
	<b>TOTAL</b>	<b>kg SO2 eq</b>	<b>0,097935757</b>



Impact category	Substance	Unit	Total
<b>GLOBAL WARMING</b>	Remaining Substances	kg CO2 eq	0,064591148
	Carbon dioxide	kg CO2 eq	86,12867001
	Carbon dioxide, fossil	kg CO2 eq	4,583536901
	Carbon monoxide	kg CO2 eq	0,172717966
	Dinitrogen monoxide	kg CO2 eq	40,98345982
	Methane	kg CO2 eq	8,19743898
	<b>TOTAL</b>	<b>kg SO2 eq</b>	<b>140,3527938</b>



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



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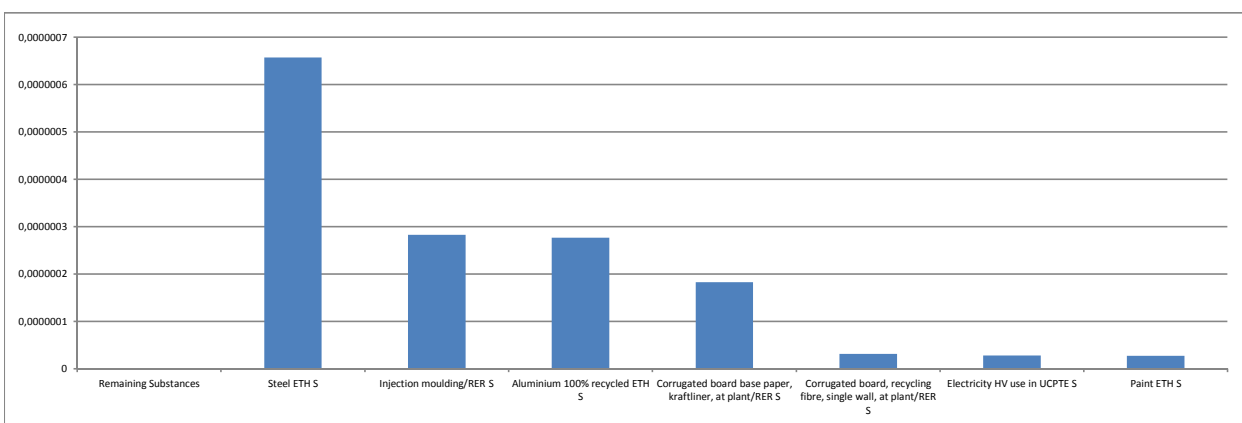
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### 4. Impacts produced by category. Five substances area included in each category have the greatest impact in each category

Impact category	Substance	Unit	Total
<b>REDUCING OZONE</b>	Remaining Substances	kg CFC-11 eq	1,85092E-11
	Methane, bromochlorodifluoro-, HFC-1011	kg CFC-11 eq	3,36066E-07
	Methane, bromotrifluoro-, Halon 1301	kg CFC-11 eq	1,11916E-06
	Methane, chlorodifluoro-, HFC-22	kg CFC-11 eq	2,06955E-08
	Methane, tetrachloro-, CFC-11	kg CFC-11 eq	2,44328E-08
	Methane, trichlorofluoro-, CFC-11	kg CFC-11 eq	8,04434E-09
	<b>TOTAL</b>	<b>kg SO2 eq</b>	<b>1,50841E-06</b>

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



Impact category	Substance	Unit	Total
<b>PHOTOCHEMICAL SMOG</b>	Remaining Substances	kg C2H4 eq	0,000270379
	Butane	kg C2H4 eq	0,002970309
	Carbon monoxide	kg C2H4 eq	0,000139129
	Carbon monoxide, fossil	kg C2H4 eq	5,76395E-05
	Ethane	kg C2H4 eq	0,016760821
	Ethene	kg C2H4 eq	0,002138462
	<b>TOTAL</b>	<b>kg SO2 eq</b>	<b>0,047326805</b>

Impact category	Substance	Unit	Total
<b>NON-RENEWABLE RESOURCES</b>	Remaining Substances	MJ eq	3,31701536
	Coal, 18 MJ per kg, in ground	MJ eq	43,8557604
	Coal, 29.3 MJ per kg, in ground	MJ eq	253,4134498
	Coal, brown, 10 MJ per kg, in ground	MJ eq	20,941272
	Coal, brown, 8 MJ per kg, in ground	MJ eq	2,997711962
	Coal, brown, in ground	MJ eq	8,463588487
	<b>TOTAL</b>	<b>kg SO2 eq</b>	<b>1596,929374</b>

<b>WASTE</b>	Total NO HAZARDOUS	KG	5,56
	Total HAZARDOUS	KG	0,164

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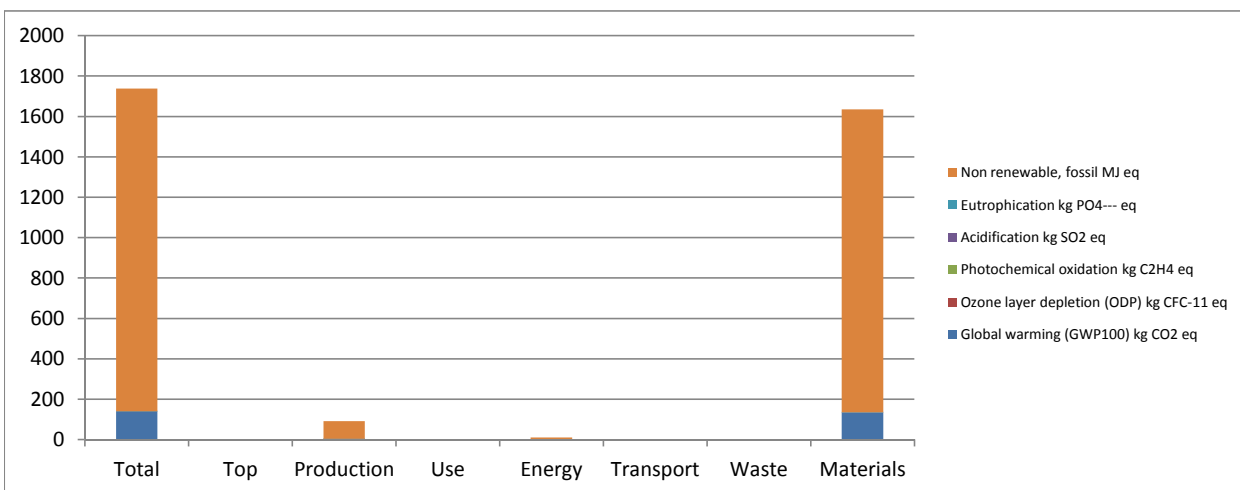
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### 5. Impact produced by life cycle stage. In includes six stages: Production, Use, Energy, Transport, Waste and Materials.

Impact Category	Uts.	Total	Top	Production	Use	Energy	Trsp.	Waste	Mat.
Global warming (GWP100)	kg CO2 eq	140,3527938	0	4,886100438	0	0,61269824	0,08	4,97239E-08	134,8
Ozone layer depletion (ODP)	kg CFC-11 eq	1,50841E-06	0	2,82856E-07	0	5,04361E-08	5E-10	0	1E-06
Photochemical oxidation	kg C2H4 eq	0,047326805	0	0,00511143	0	0,000279839	1E-04	4,06293E-11	0,042
Acidification	kg SO2 eq	0,586549921	0	0,040860459	0	0,00260504	0,001	6,25234E-10	0,542
Eutrophication	kg PO4--- eq	0,097935757	0	0,001197068	0	0,000184957	2E-04	1,28338E-10	0,096
Non renewable, fossil	MJ eq	1596,929374	0	86,93879985	0	10,14195955	0,009	0	1500



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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 22% recycled materials
	100% recycled aluminium
	Powder paint with no VOC emissions
	Limitation on use of hazardous substances. Without chromium, mercury, cadmium
	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.
Optimization of distribution system	Automated manufacturing systems. Planning the cutting process.
	Reducing energy. Removable systems. Low volume packaging. Spaces optimization.
Optimization of product life	Saving energy and Flexibility. Modular system adaptable between different models.
	Long life guarantees
	Adaptability and growth facilities.
	Replacement parts possibilities.
Optimization of the end of system life	Easy Maintenance
	Easy separation of product components
	High degree of recyclability of the product: 94%
	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.