

# EPD Environmental Product Declaration

## TNK A500 chair

Ref. 80104LRK52

Report Data 19.07.2012

### Certificates

ISO 9001:2008

ISO 14001:2004

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      ☐      Studied Year 2012

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	9,649	45,11%	Bibliographic data	Bibliographic data
Steel	2,370	11,08%	Bibliographic data	Bibliographic data
Cadboard	3,138	14,67%	Bibliographic data	Bibliographic data
Plastic	5,715	26,72%	Bibliographic data	Bibliographic data
Others	0,516	2,41%	Bibliographic data	Bibliographic data
<b>TOTAL</b>	<b>21,388</b>	<b>100,00%</b>		
<b>% recycled materials</b>		<b>59,79%</b>		
<b>% recyclable materials</b>		<b>82,36%</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 ISO 14006 "Ecodesign".

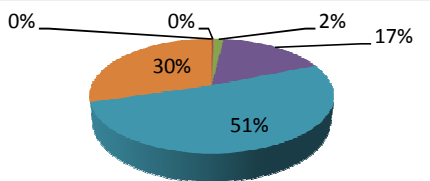
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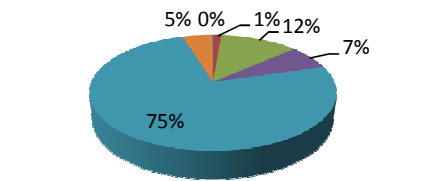
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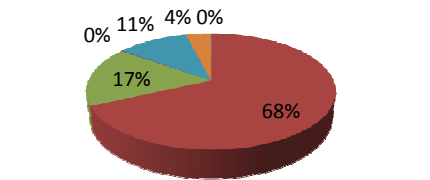
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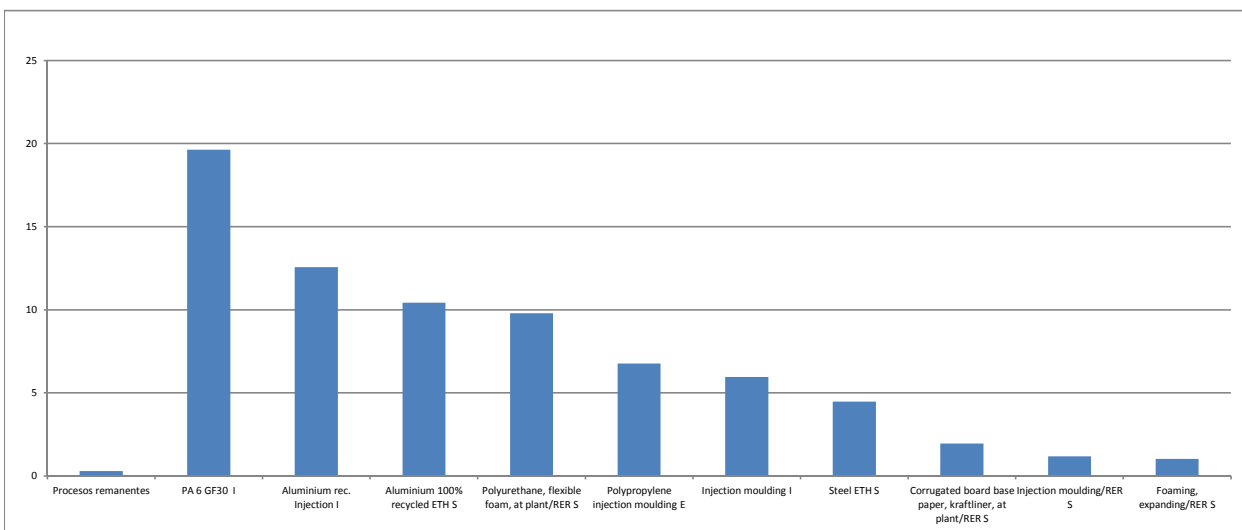
### 3. Impacts produced by category. Five substances area included in each category have the greatest impact in each category

Impact category	Substance	Unit	Total
<b>ACIDIFICATION</b>			
	Substancias remanentes	kg SO2 eq	-1,11022E-16
	Ammonia	kg SO2 eq	0,001589239
	Nitrogen dioxide	kg SO2 eq	0,008092762
	Nitrogen oxides	kg SO2 eq	0,087093998
	Sulfur dioxide	kg SO2 eq	0,265172716
	Sulfur oxides	kg SO2 eq	0,152800379
<b>TOTAL</b>		<b>kg SO2 eq</b>	<b>0,514749092</b>

Impact category	Substance	Unit	Total
<b>EUTROFIZATION</b>			
	Substancias remanentes	kg P04--- eq	5,70829E-05
	Ammonia	kg P04--- eq	0,000347646
	Dinitrogen monoxide	kg P04--- eq	0,003672738
	Nitrogen dioxide	kg P04--- eq	0,002104118
	Nitrogen oxides	kg P04--- eq	0,022644439
	Ammonium, ion	kg P04--- eq	0,001444891
<b>TOTAL</b>		<b>kg SO2 eq</b>	<b>0,043635407</b>

Impact category	Substance	Unit	Total
<b>GLOBAL WARMING</b>			
	Substancias remanentes	kg CO2 eq	0,112762104
	Carbon dioxide	kg CO2 eq	51,8242745
	Carbon dioxide, fossil	kg CO2 eq	12,78878509
	Carbon monoxide	kg CO2 eq	0,181537009
	Dinitrogen monoxide	kg CO2 eq	8,362541008
	Methane	kg CO2 eq	2,969319323
<b>TOTAL</b>		<b>kg SO2 eq</b>	<b>78,01555202</b>

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



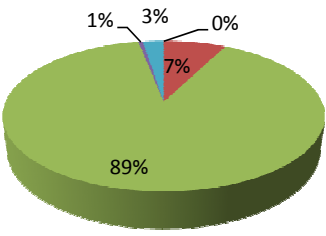
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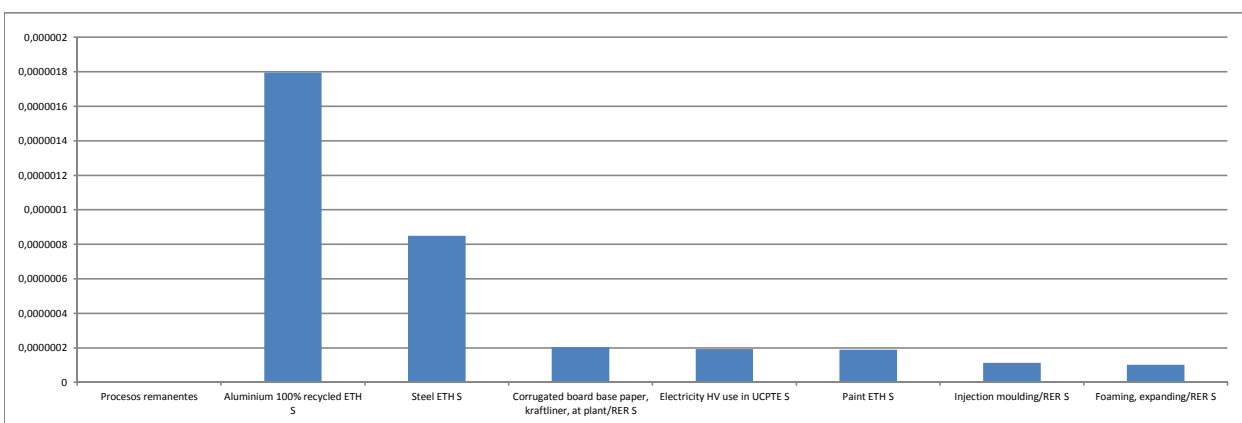
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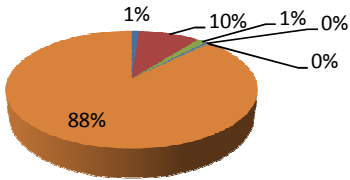
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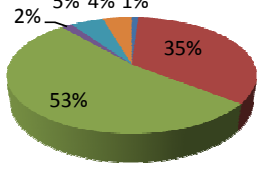
### 4. Impacts produced by category. Five substances area included in each category have the greatest impact in each category

Impact category	Substance	Unit	Total
<b>REDUCING OZONE</b>			
	Substancias remanentes	kg CFC-11 eq	5,28259E-11
	Methane, bromochlorodifluoro-, HFC-1211	kg CFC-11 eq	2,65507E-07
	Methane, bromotrifluoro-, Halon 1301	kg CFC-11 eq	3,17069E-06
	Methane, chlorodifluoro-, HCFC-22	kg CFC-11 eq	1,81174E-08
	Methane, tetrachloro-, CFC-11	kg CFC-11 eq	8,87634E-08
	Methane, trichlorofluoro-, CFC-11	kg CFC-11 eq	3,12079E-08
	<b>TOTAL</b>	<b>kg SO2 eq</b>	<b>3,57434E-06</b>

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



Impact category	Substance	Unit	Total
<b>PHOTOCHEMICAL SMOG</b>			
	Substancias remanentes	kg C2H4 eq	0,00036598
	Carbon monoxide	kg C2H4 eq	0,003121974
	Carbon monoxide, fossil	kg C2H4 eq	0,000476381
	Ethane	kg C2H4 eq	8,65784E-05
	Ethene	kg C2H4 eq	9,51018E-05
	Hydrocarbons, unspecified	kg C2H4 eq	0,02890363
	<b>TOTAL</b>	<b>kg SO2 eq</b>	<b>0,08389241</b>

Impact category	Substance	Unit	Total
<b>NON-RENEWABLE RESOURCES</b>			
	Substancias remanentes	MJ eq	2,310646826
	Coal, 18 MJ per kg, in ground	MJ eq	78,02576847
	Coal, 29.3 MJ per kg, in ground	MJ eq	119,8705005
	Coal, brown, 10 MJ per kg, in groun	MJ eq	3,781032
	Coal, brown, 8 MJ per kg, in ground	MJ eq	11,60244905
	Coal, brown, in ground	MJ eq	9,985190156
	<b>TOTAL</b>	<b>kg SO2 eq</b>	<b>1220,910869</b>

<b>WASTE</b>	<b>Total NO HAZARDOUS</b>	<b>KG</b>	<b>3,751</b>
	<b>Total HAZARDOUS</b>	<b>KG</b>	<b>0,129</b>

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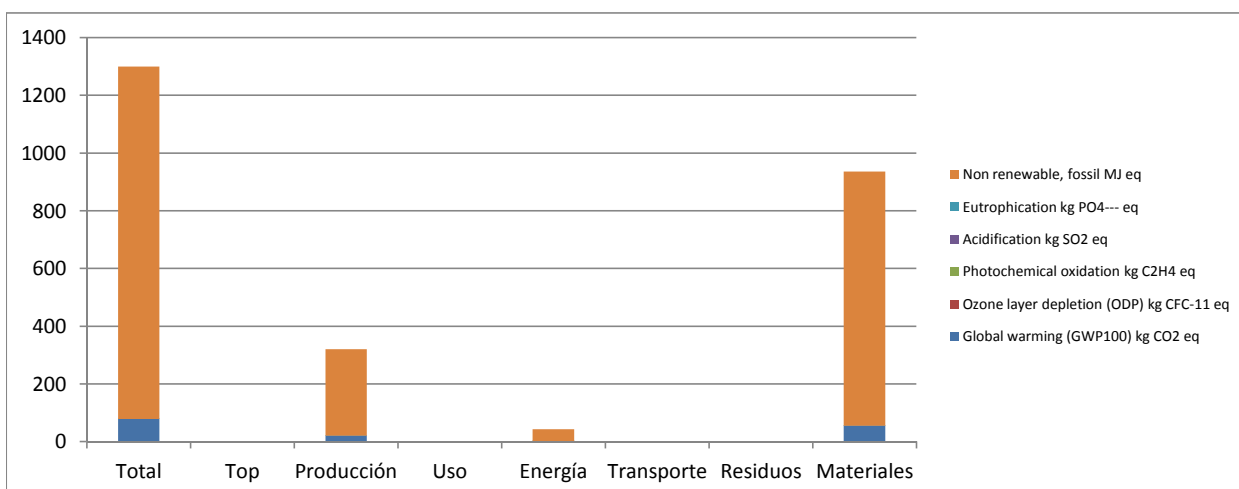
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### 5. Impact produced by life cycle stage. In includes six stages: Production, Use, Energy, Transport, Waste and Materials.

Impact Category	Uts.	Total	Top	Production	Use	Energy	Trsp.	Waste	Mat.
Global warming (GWP100)	kg CO2 eq	78,01555202	0	20,73791731	0	2,045091967	0,486	0	54,75
Ozone layer depletion (ODP)	kg CFC-11 eq	3,57434E-06	0	2,14653E-07	0	2,44838E-07	1E-09	0	3E-06
Photochemical oxidation	kg C2H4 eq	0,08389241	0	0,046481581	0	0,001170345	7E-04	0	0,036
Acidification	kg SO2 eq	0,514749092	0	0,277515715	0	0,010035198	0,006	0	0,221
Eutrophication	kg PO4--- eq	0,043635407	0	0,007650596	0	0,000609322	0,001	0	0,034
Non renewable, fossil	MJ eq	1220,910869	0	299,2262933	0	40,55224779	0,019	0	881,1



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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 60% 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.
	Saving energy and Flexibility. Modular system adaptable between different models.
Optimization of product life	Long life guarantees
	Adaptability and growth facilities.
	Replacement parts possibilities. Easy Maintenance
Optimization of the end of system life	Easy separation of product components
	High degree of recyclability of the product: 82%
	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 14006 "Ecodesign".

ISO 14006 "Ecodesign"

UNE ISO 14006 "Ecodesign"

Environmental impacts methods

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