

EPD Environmental Product Declaration

TNK A500 chair

Ref. 891CN30

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 España



1. Details of the system

Type	New Product	<input checked="" type="checkbox"/>	Redesign	<input type="checkbox"/>	Studied Year 2012
------	-------------	-------------------------------------	----------	--------------------------	-------------------

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
Alumium	9,649	43,01%	Bibliographic data	Bibliographic data
Steel	2,926	13,04%	Bibliographic data	Bibliographic data
Cadboard	3,138	13,99%	Bibliographic data	Bibliographic data
Plastic	6,171	27,50%	Bibliographic data	Bibliographic data
Others	0,553	2,47%	Bibliographic data	Bibliographic data
TOTAL	22,437	100,00%		
% recycled materials		56,99%		
% recyclable materials		77,23%		

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".

EPD Environmental Product Declaration

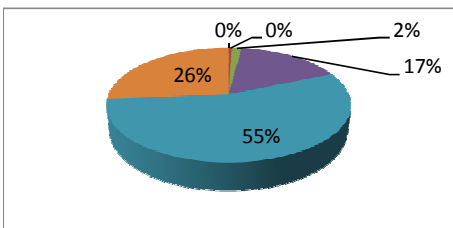
TNK A500 chair

Ref. 891CN30

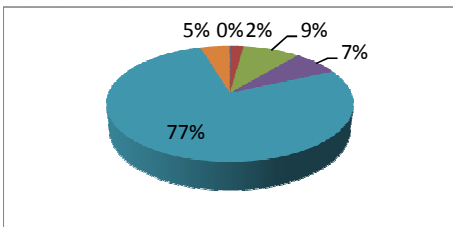
Report Data 19.07.2012

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

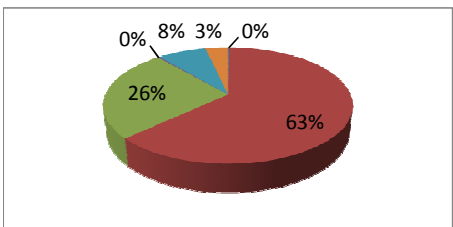
Impact category	Substance	Unit	Total
ACIDIFICATION	Substancias remanentes	kg SO2 eq	0
	Ammonia	kg SO2 eq	0,002547981
	Nitrogen dioxide	kg SO2 eq	0,008027435
	Nitrogen oxides	kg SO2 eq	0,085828222
	Sulfur dioxide	kg SO2 eq	0,285805353
	Sulfur oxides	kg SO2 eq	0,135950729
	TOTAL	kg SO2 eq	0,51815972



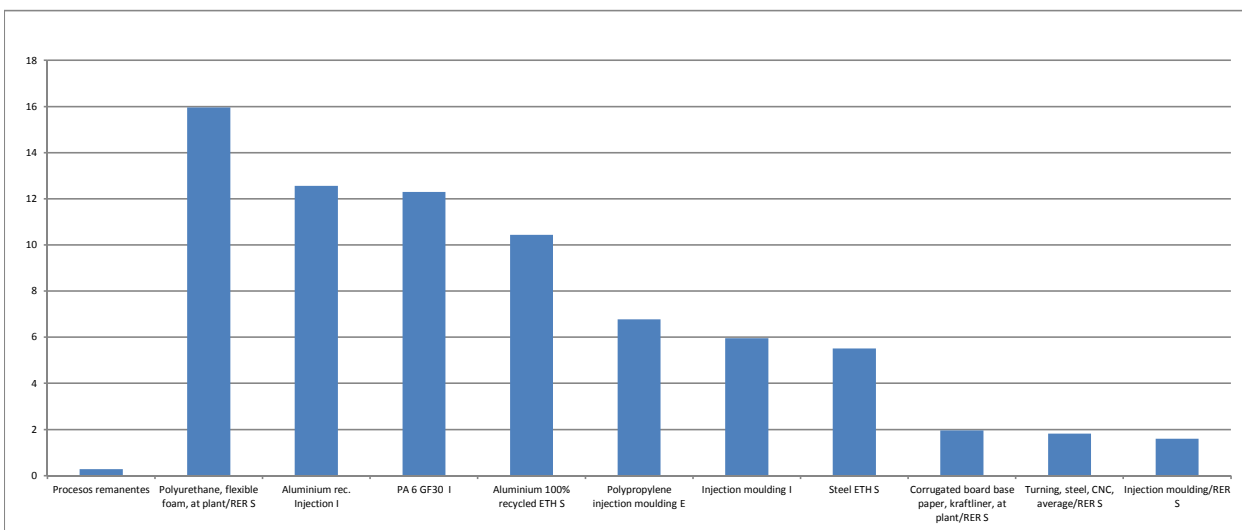
Impact category	Substance	Unit	Total
EUTROFIZATION	Substancias remanentes	kg P04--- eq	6,50161E-05
	Ammonia	kg P04--- eq	0,000557371
	Dinitrogen monoxide	kg P04--- eq	0,002554805
	Nitrogen dioxide	kg P04--- eq	0,002087133
	Nitrogen oxides	kg P04--- eq	0,022315338
	Ammonium, ion	kg P04--- eq	0,001326297
	TOTAL	kg SO2 eq	0,045596284



Impact category	Substance	Unit	Total
GLOBAL WARMING	Remaining Substances	kg CO2 eq	0,168898767
	Carbon dioxide	kg CO2 eq	48,30535316
	Carbon dioxide, fossil	kg CO2 eq	19,71804966
	Carbon monoxide	kg CO2 eq	0,204836413
	Dinitrogen monoxide	kg CO2 eq	5,817094447
	Methane	kg CO2 eq	2,679440056
	TOTAL	kg SO2 eq	79,68116909



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



EPD Environmental Product Declaration

TNK A500 chair

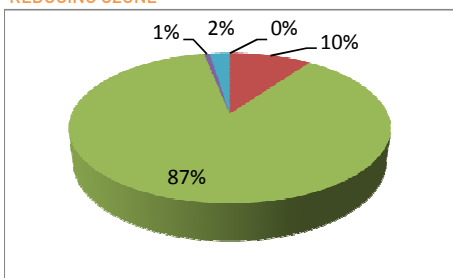
Ref. 891CN30

Report Data 19.07.2012

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

Impact category

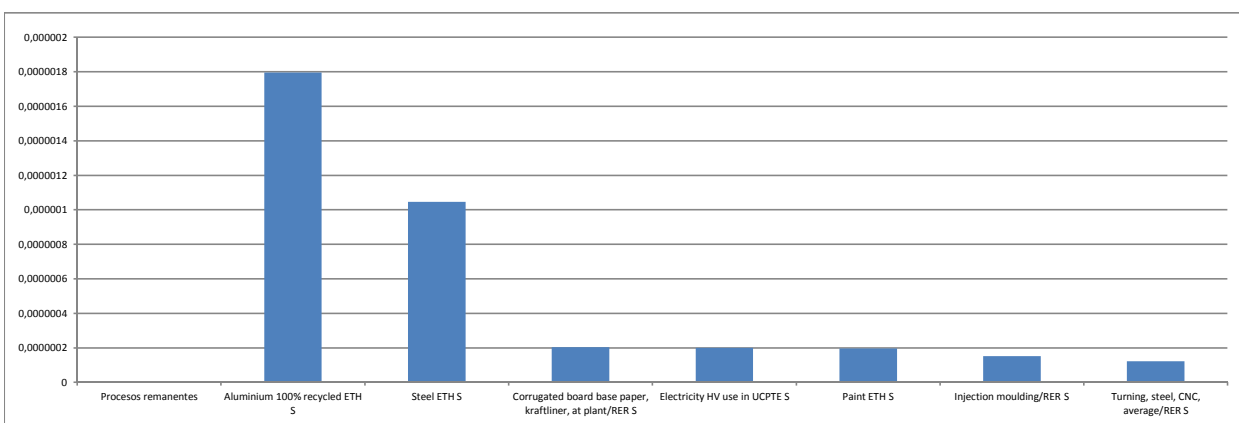
REDUCING OZONE



Substance	Unit	Total
Substancias remanentes	kg CFC-11 eq	7,81387E-11
Methane, bromochlorodifluoro-, HFC-1211	kg CFC-11 eq	3,87928E-07
Methane, bromotrifluoro-, Halon 1301	kg CFC-11 eq	3,4335E-06
Methane, chlorodifluoro-, HCFC-22	kg CFC-11 eq	2,63989E-08
Methane, tetrachloro-, CFC-114	kg CFC-11 eq	9,46057E-08
Methane, trichlorofluoro-, CFC-113	kg CFC-11 eq	3,27201E-08

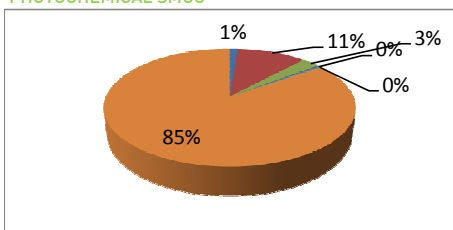
TOTAL **kg SO2 eq** **3,97523E-06**

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



Impact category

PHOTOCHEMICAL SMOG

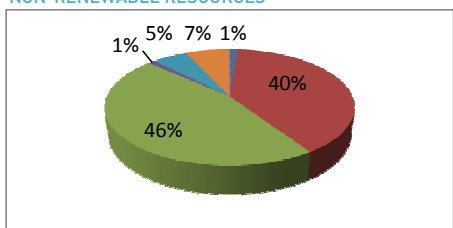


Substance	Unit	Total
Substancias remanentes	kg C2H4 eq	0,000422206
Carbon monoxide	kg C2H4 eq	0,003522664
Carbon monoxide, fossil	kg C2H4 eq	0,000923587
Ethane	kg C2H4 eq	9,46169E-05
Ethene	kg C2H4 eq	0,000116393
Hydrocarbons, unspecified	kg C2H4 eq	0,028196618

TOTAL **kg SO2 eq** **0,090719794**

Impact category

NON-RENEWABLE RESOURCES



Substance	Unit	Total
Substancias remanentes	MJ eq	2,536514929
Coal, 18 MJ per kg, in ground	MJ eq	89,6276497
Coal, 29.3 MJ per kg, in ground	MJ eq	104,2599033
Coal, brown, 10 MJ per kg, in ground	MJ eq	2,454432
Coal, brown, 8 MJ per kg, in ground	MJ eq	12,16262394
Coal, brown, in ground	MJ eq	15,43883463

TOTAL **kg SO2 eq** **1323,572587**

WASTE

Total NO HAZARDOUS	KG	4,18
Total HAZARDOUS	KG	0,179

EPD Environmental Product Declaration

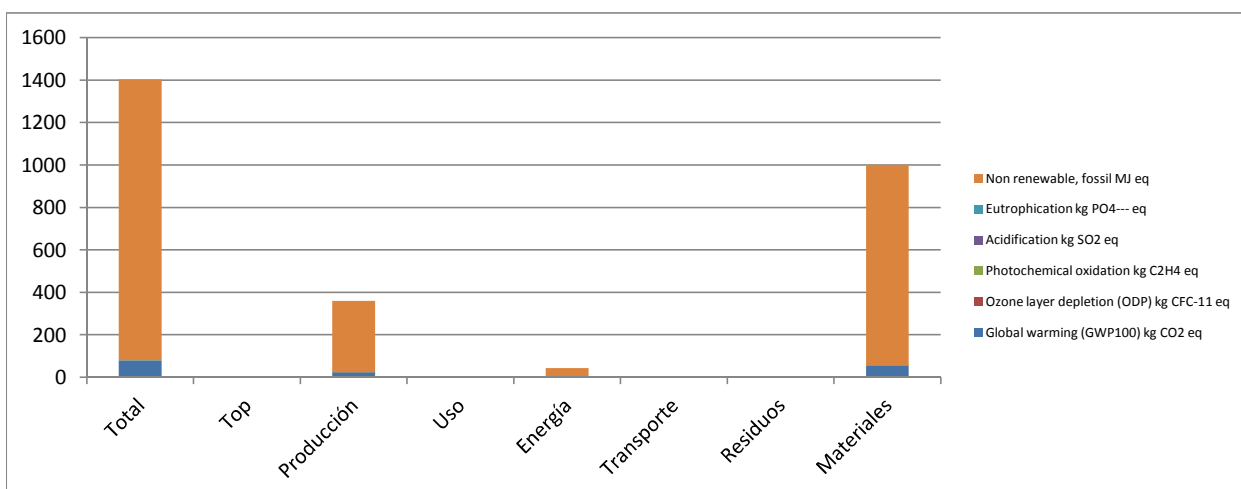
TNK A500 chair

Ref. 891CN30

Report Data 19.07.2012

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	79,68116909	0	22,96288461	0	2,074294237	0,431	0	54,21
Ozone layer depletion (ODP)	kg CFC-11 eq	3,97523E-06	0	3,75147E-07	0	2,52683E-07	1E-09	0	3E-06
Photochemical oxidation	kg C2H4 eq	0,090719794	0	0,047960749	0	0,001178734	6E-04	0	0,041
Acidification	kg SO2 eq	0,51815972	0	0,285056507	0	0,010205691	0,006	0	0,217
Eutrophication	kg PO4--- eq	0,045596284	0	0,009188416	0	0,000611206	0,001	0	0,035
Non renewable, fossil	MJ eq	1323,572587	0	336,4152621	0	40,50185712	0,02	0	946,6



EPD Environmental Product Declaration

TNK A500 chair

Ref. 891CN30

Report Data 19.07.2012

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 ECODSIGN	CHOICES
Low impact materials selection	Designed to be manufactured with 57% 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.
	Easy Maintenance
Optimization of the end of system life	Replacement parts possibilities.
	Easy separation of product components
	High degree of recyclability of the product: 77%
	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.