

# EPD Environmental Product Declaration



## TNK FLEX chair

Ref. 32112M12

Report Data 20.10.2015

### 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                      ☒                      Redesign                      ☐                      Studied Year 2015

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 100% rec.	4,526	32,14%	Bibliographic data	Bibliographic data
Steel	1,475	10,47%	Bibliographic data	Bibliographic data
Cardboard	2,607	18,52%	Bibliographic data	Bibliographic data
Plastic	5,303	37,66%	Bibliographic data	Bibliographic data
Other	0,170	1,20%	Bibliographic data	Bibliographic data
<b>TOTAL</b>	<b>14,080</b>	<b>100,00%</b>		
% recycled materials		50,66%		
% recyclable materials		77,33%		

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

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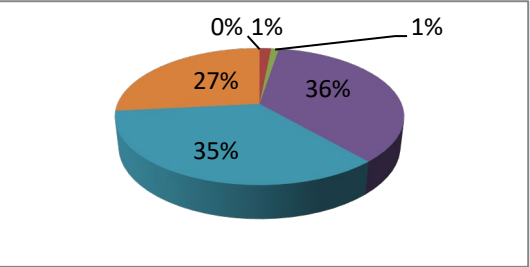
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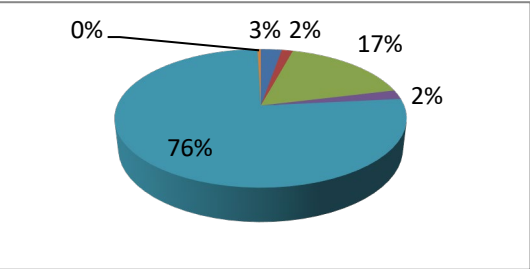
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### 3. Impacts produced by category. Five substances area included in each category have the greatest impact in each category

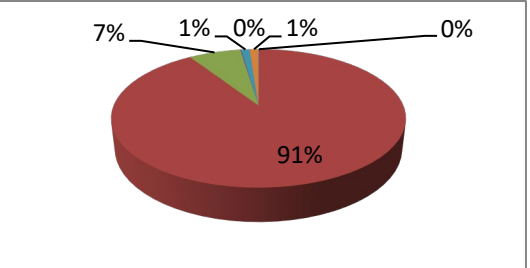
Impact category	Substance	Unit	Total
ACIDIFICATION	Substancias remanentes	kg SO2 eq	-2,77556E-17
	Ammonia	kg SO2 eq	0,002968884
	Nitrogen dioxide	kg SO2 eq	0,001955848
	Nitrogen oxides	kg SO2 eq	0,068488651
	Sulfur dioxide	kg SO2 eq	0,066363365
	Sulfur oxides	kg SO2 eq	0,050744304
	TOTAL	kg SO2 eq	0,190521053



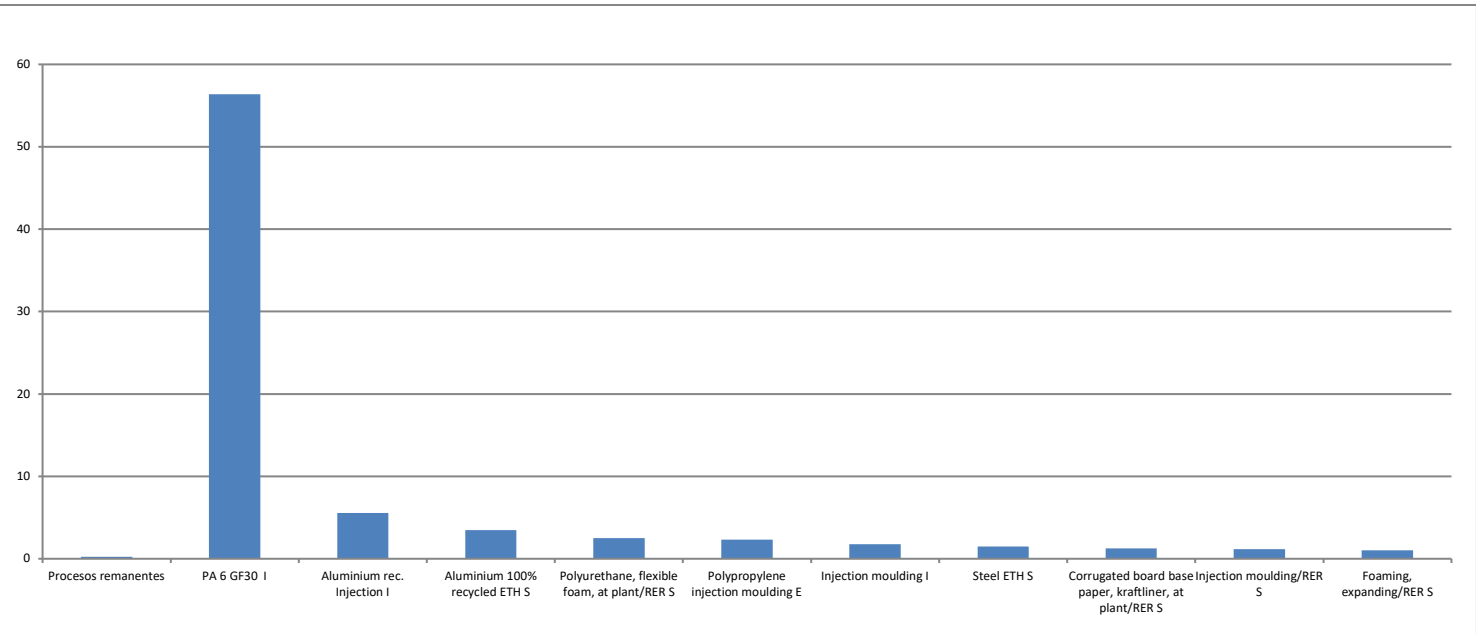
Impact category	Substance	Unit	Total
EUTROFIZATION	Substancias remanentes	kg PO4--- eq	0,000649443
	Ammonia	kg PO4--- eq	0,000345994
	Dinitrogen monoxide	kg PO4--- eq	0,003967045
	Nitrogen dioxide	kg PO4--- eq	0,000508521
	Nitrogen oxides	kg PO4--- eq	0,017807049
	Ammonium, ion	kg PO4--- eq	0,000101868
	TOTAL	kg SO2 eq	2,36599E-05



Impact category	Substance	Unit	Total
GLOBAL WARMING	Substancias remanentes	kg CO2 eq	0,074951316
	Carbon dioxide	kg CO2 eq	66,07082016
	Carbon dioxide, fossil	kg CO2 eq	4,981087632
	Carbon monoxide	kg CO2 eq	0,106294726
	Dinitrogen monoxide	kg CO2 eq	0,787715942
	Methane	kg CO2 eq	0,850036572
	TOTAL	kg SO2 eq	73,30013066



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



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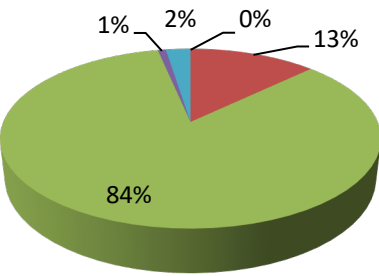
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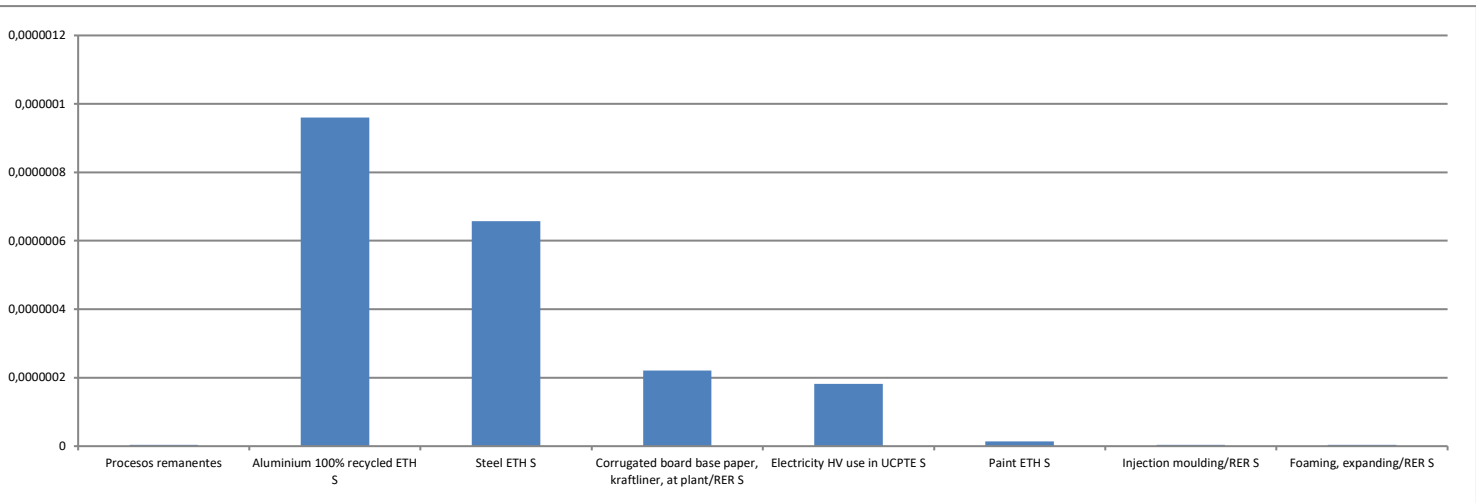
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### 4. Impacts produced by category. Five substances area included in each category have the greatest impact in each category

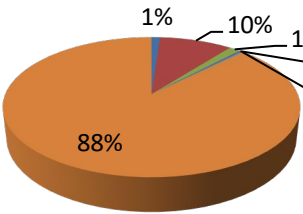
Impact category	Substance	Unit	Total
REDUCING OZONE	Substancias remanentes	kg CFC-11 eq	1,60977E-11
	Methane, bromochlorodifluoro-, Halon 1211	kg CFC-11 eq	2,61994E-07
	Methane, bromotrifluoro-, Halon 1301	kg CFC-11 eq	1,70187E-06
	Methane, chlorodifluoro-, HCFC-22	kg CFC-11 eq	1,6532E-08
	Methane, tetrachloro-, CFC-10	kg CFC-11 eq	5,09068E-08
	Methane, trichlorofluoro-, CFC-11	kg CFC-11 eq	1,43782E-08
	TOTAL	kg SO2 eq	2,0457E-06



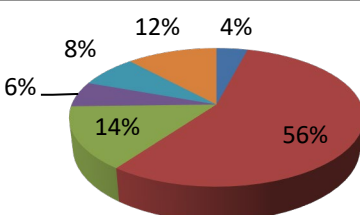
### Impact of group elements (materials, processes, energy, use, transport and waste)



Impact category	Substance	Unit	Total
PHOTOCHEMICAL SMOG	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
	TOTAL	kg SO2 eq	0,08389241



Impact category	Substance	Unit	Total
NON-RENEWABLE RESOURCES	Substancias remanentes	MJ eq	3,679886361
	Coal, 18 MJ per kg, in ground	MJ eq	50,39900638
	Coal, 29.3 MJ per kg, in ground	MJ eq	13,14095891
	Coal, brown, 10 MJ per kg, in groun	MJ eq	5,355276
	Coal, brown, 8 MJ per kg, in ground	MJ eq	6,85232499
	Coal, brown, in ground	MJ eq	10,70113066
	TOTAL	kg SO2 eq	1481,634743



WASTE	Total NO HAZARDOUS	KG	1,32
	Total HAZARDOUS	KG	0,0204

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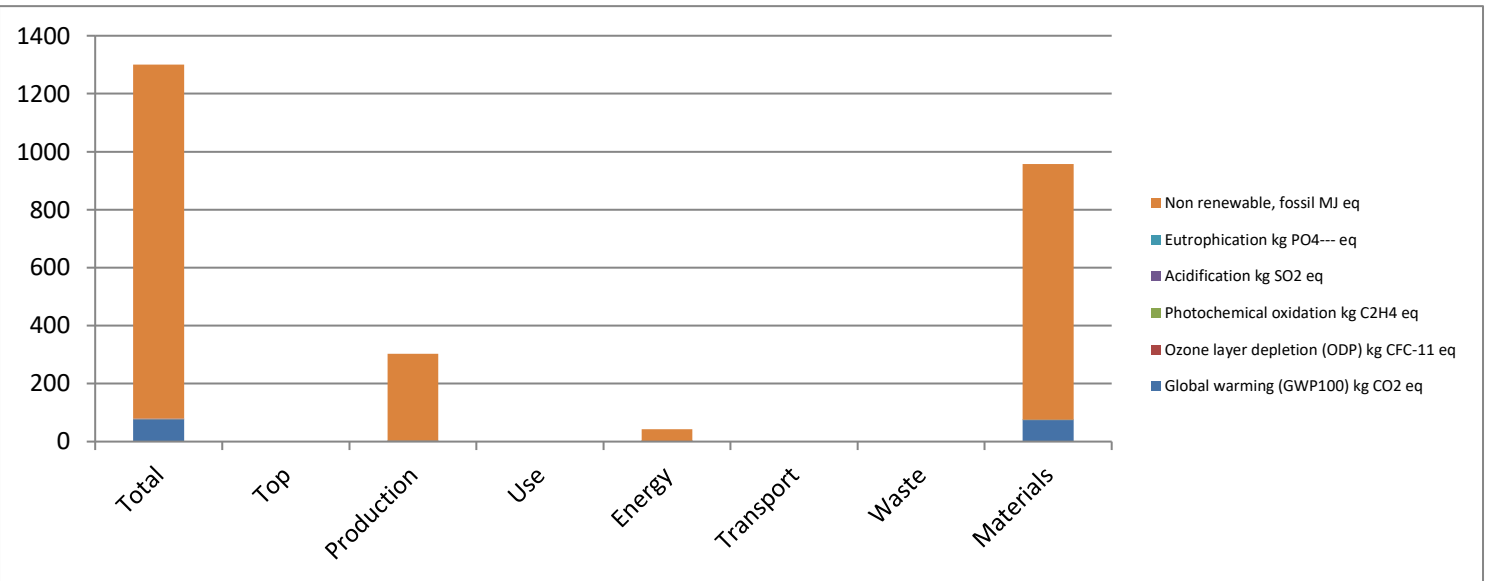
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### 5. Impact produced by life cycle stage. In includes six stages: Production, Use, Energy, Transport, Waste and Materials.

Impact Category	Uts.	Total	Top	Production	Use	Energy	Trsp.	Waste	Mat.
Global warming (GWP100)	kg CO2 eq	76,29332985	0	2,587351091	0	2,045091967	7E-04	0	73,71
Ozone layer depletion (ODP)	kg CFC-11 eq	3,66989E-06	0	3,54526E-09	0	2,44838E-07	1E-09	0	4E-06
Photochemical oxidation	kg C2H4 eq	0,08389241	0	0,046481581	0	0,001170345	7E-04	0	0,036
Acidification	kg SO2 eq	2,876590461	0	0,804421795	0	0,010035198	2E-05	0	2,072
Eutrophication	kg PO4--- eq	0,000296954	0	4,34379E-08	0	0,000609322	4E-09	0	3E-04
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 complexitiy, 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 50% recycled materials
	100% recycled aluminium
	Powder paint with no VOC amissions
	Limitation on use of hazardous substances. Whithout 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.
	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.
	Easy Maintenace
	Replacement parts possibilities.
Optimization of the end of system life	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 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.