

EPD Environmental Product Declaration

CRON chair

Ref. CN3112N30

Report Date 17.04.2014

Certificates

ISO 9001:2008
 ISO 14001:2004
 ISO 14006. Ecodesign
 PEFC. Programme for the Endorsement of Forest Certification
 FSC. Forest Stewardship Council



1. Details of the system

Type: New Product Redesign Studied Year 2014

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 environmental 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
Others	0,916	4,08%	Bibliographic data	Bibliographic data
Aluminium	5,981	26,61%	Bibliographic data	Bibliographic data
Plastic	6,3814	28,39%	Bibliographic data	Bibliographic data
Steel	6,1116	27,19%	Bibliographic data	Bibliographic data
Carton	3,085	13,73%	Bibliographic data	Bibliographic data
TOTAL	22,475	100,00%		
% recycled materials		40,34%		
% recyclable materials		80,88%		

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

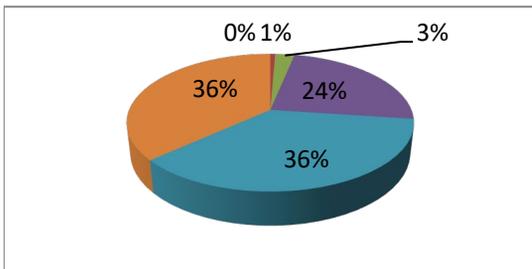
CRON chair

Ref. CN3112N30

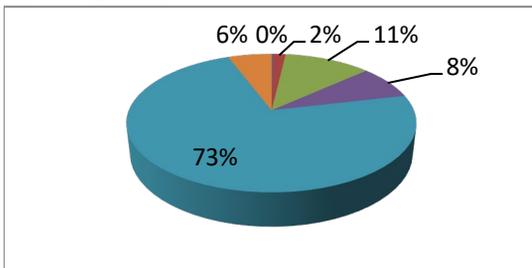
Report Data 17.04.2014

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

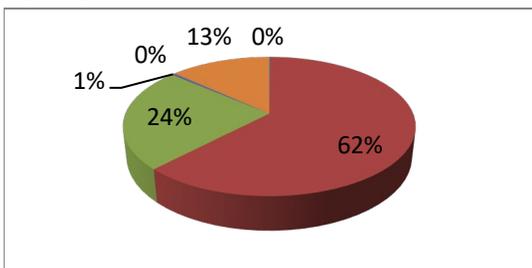
Impact category	Substance	Unit	Total
ACIDIFICATION	Substancias remanentes	kg SO2 eq	0
	Ammonia	kg SO2 eq	0,003982212
	Nitrogen dioxide	kg SO2 eq	0,01566688
	Nitrogen oxides	kg SO2 eq	0,143291538
	Sulfur dioxide	kg SO2 eq	0,218248597
	Sulfur oxides	kg SO2 eq	0,219962131
	TOTAL	kg SO2 eq	0,601151358



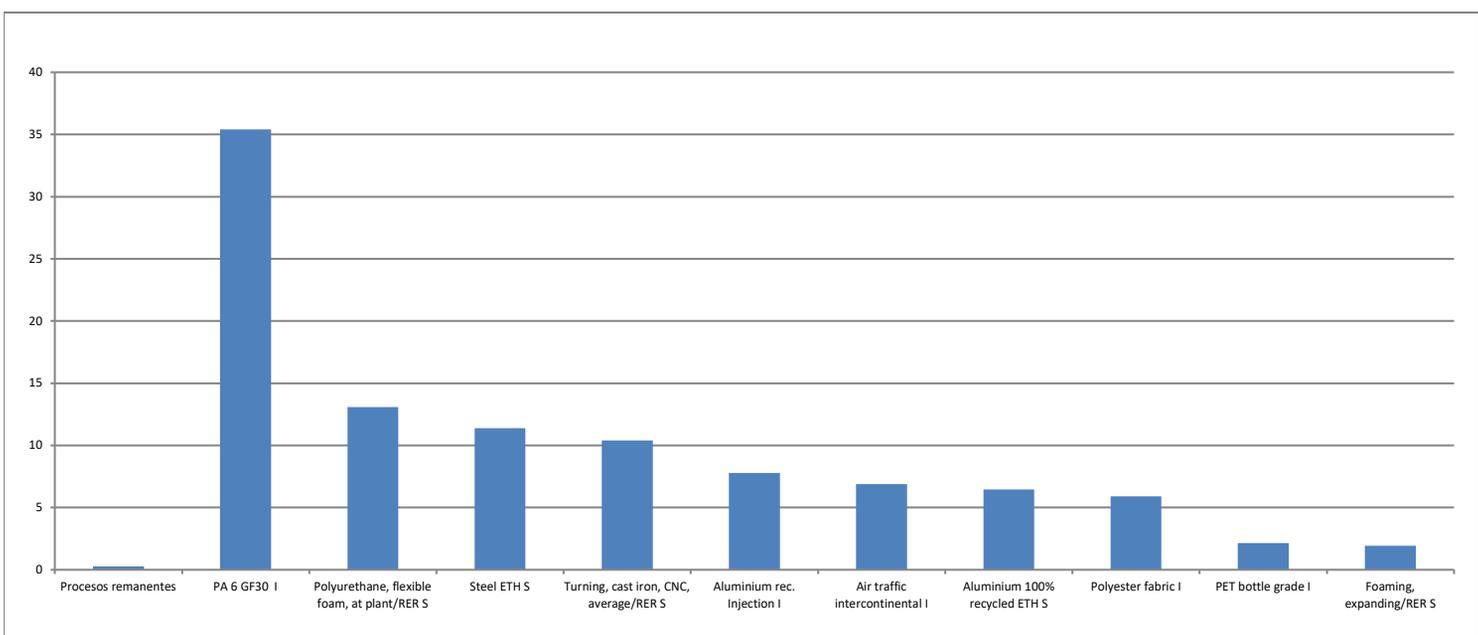
Impact category	Substance	Unit	Total
EUTROFIZATION	Substancias remanentes	kg PO4--- eq	9,11106E-05
	Ammonia	kg PO4--- eq	0,000871109
	Dinitrogen monoxide	kg PO4--- eq	0,005913721
	Nitrogen dioxide	kg PO4--- eq	0,004073389
	Nitrogen oxides	kg PO4--- eq	0,0372558
	Ammonium, ion	kg PO4--- eq	0,002976256
	TOTAL	kg PO4--- eq	0,07322883



Impact category	Substance	Unit	Total
GLOBAL WARMING	Substancias remanentes	kg CO2 eq	0,135845841
	Carbon dioxide	kg CO2 eq	63,21424224
	Carbon dioxide, fossil	kg CO2 eq	24,42634134
	Carbon monoxide	kg CO2 eq	0,393401756
	Carbon monoxide, fossil	kg CO2 eq	0,144037323
	Dinitrogen monoxide	kg CO2 eq	13,4650869
	TOTAL	kg CO2 eq	108,0222912



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



EPD Environmental Product Declaration

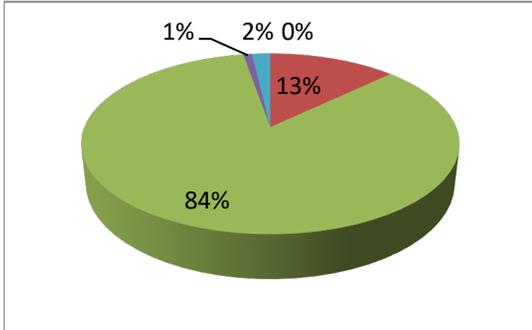
Ref. CN3112N30

CRON chair

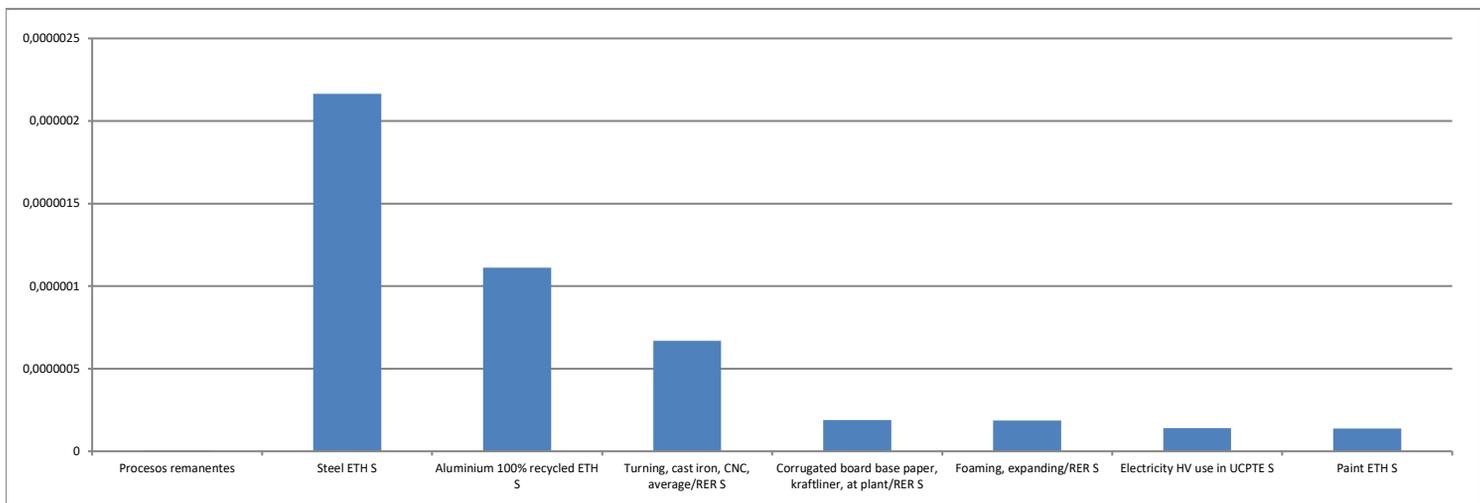
Report Data 17.04.2014

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

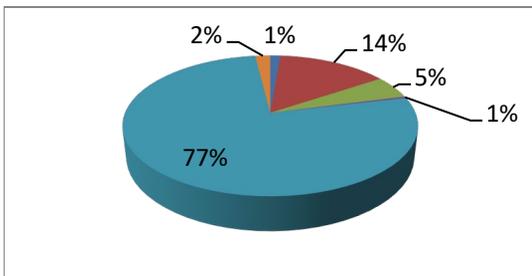
Impact category	Substance	Unit	Total
REDUCING OZONE	Substancias remanentes	kg CFC-11 eq	7,2638E-11
	Methane, bromochlorodifluoro-, Halon 1211	kg CFC-11 eq	6,07701E-07
	Methane, bromotrifluoro-, Halon 1301	kg CFC-11 eq	3,94242E-06
	Methane, chlorodifluoro-, HCFC-22	kg CFC-11 eq	4,15916E-08
	Methane, tetrachloro-, CFC-10	kg CFC-11 eq	8,72745E-08
	Methane, trichlorofluoro-, CFC-11	kg CFC-11 eq	3,03475E-08
	TOTAL	kg CFC-11 eq	4,70941E-06



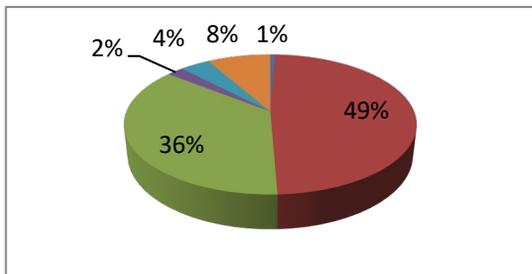
Impact of group elements (materials, processes, energy, use, transport and waste)



Impact category	Substance	Unit	Total
PHOTOCHEMICAL SMOG	Substancias remanentes	kg C2H4 eq	0,000622931
	Carbon monoxide	kg C2H4 eq	0,006765508
	Carbon monoxide, fossil	kg C2H4 eq	0,002477075
	Ethene	kg C2H4 eq	0,000195983
	Hydrocarbons, unspecified	kg C2H4 eq	0,036061795
	Methane	kg C2H4 eq	0,000924978
TOTAL	kg C2H4 eq	0,113517117	



Impact category	Substance	Unit	Total
NON-RENEWABLE RESOURCES	Substancias remanentes	MJ eq	1,695022468
	Coal, 18 MJ per kg, in ground	MJ eq	140,9982261
	Coal, 29.3 MJ per kg, in ground	MJ eq	104,6211165
	Coal, brown, 10 MJ per kg, in groun	MJ eq	6,402132
	Coal, brown, 8 MJ per kg, in ground	MJ eq	11,25552919
	Coal, brown, in ground	MJ eq	24,17464031
TOTAL	MJ eq	1478,966042	



WASTE	Total NO HAZARDOUS	KG	5,41
	Total HAZARDOUS	KG	0,173

EPD Environmental Product Declaration

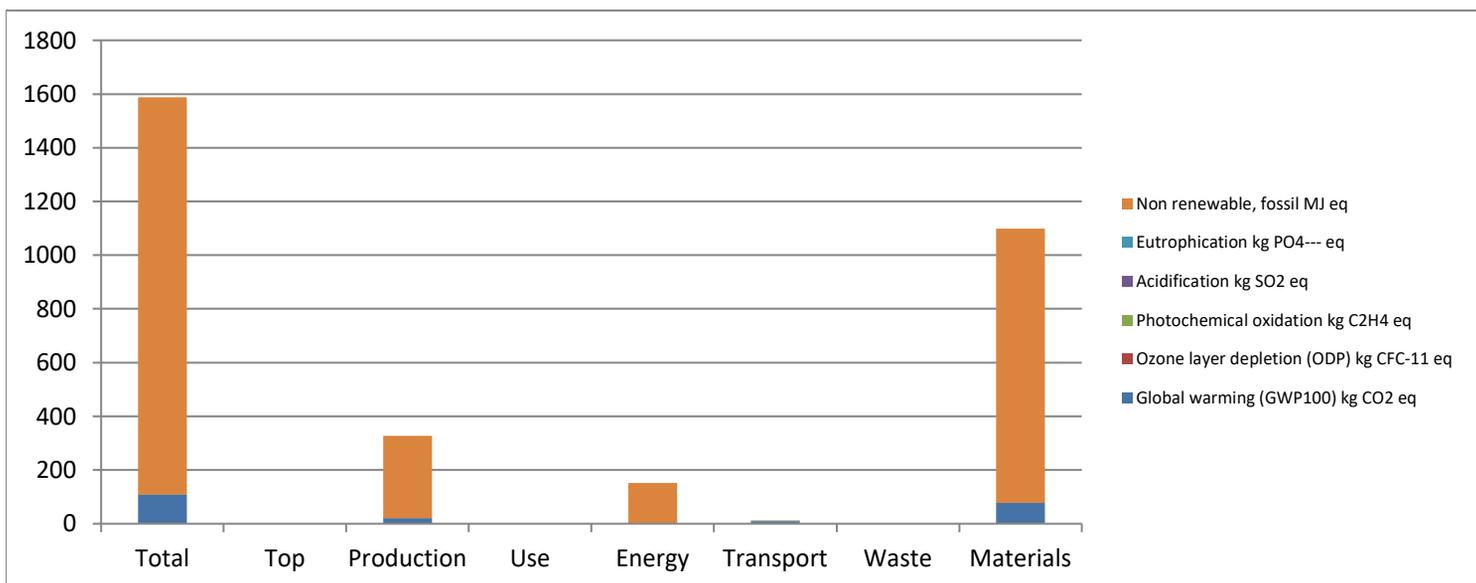
Ref. CN3112N30

CRON chair

Report Data 17.04.2014

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	108,0222912	0	20,10027095	0	1,453864276	9,353	0	77,12
Ozone layer depletion (ODP)	kg CFC-11 eq	4,70941E-06	0	8,56483E-07	0	1,42971E-07	1E-09	0	4E-06
Photochemical oxidation	kg C2H4 eq	0,113517117	0	0,038754315	0	0,00338994	0,006	0	0,065
Acidification	kg SO2 eq	0,601151358	0	0,166762672	0	0,012719679	0,064	0	0,357
Eutrophication	kg PO4--- eq	0,07322883	0	0,009030687	0	0,001239926	0,009	0	0,054
Non renewable, fossil	MJ eq	1478,966042	0	306,3384485	0	150,8954895	0,02	0	1022



EPD Environmental Product Declaration

CRON chair

Ref. CN3112N30

Report Data 17.04.2014

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 40% recycled materials
	100% recycled aluminium
	Powder paint with no VOC emissions
	Limitation on use of hazardous substances. Without chromium, mercury, cadmium
Optimization of product techniques	Recycled cardboard packaging
	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.
Optimization of distribution system	Closed water circuits. Heat recovery.
	Automated manufacturing systems. Planning the cutting process.
Optimization of product life	Reducing energy. Removable systems. Low volume packaging. Spaces optimization.
	Saving energy and Flexibility. Modular system adaptable between different models.
	Long life guarantees
	Adaptability and growth facilities.
Optimization of the end of system life	Replacement parts possibilities.
	Easy Maintenance
	Easy separation of product components
Optimization of the end of system life	High degree of recyclability of the product: 81%
	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.