Tonina

MULTI-PURPOSE CHAIR

by Allermuir

ENVIRONMENTAL PRODUCT ANALYSIS

This Environmental Product Analysis has been created in accordance with, and following the principles of ISO14025 and ISO14044. All the Life Cycle Analysis data has been compiled, processed and verified by Oakdene Hollins Ltd.

PRODUCT SUMMARY INFORMATION

PRODUCT DESCRIPTION:	Tonina is a one piece gas injection moulded polypropylene chair that utilises the biomimetic method of moulding to deliver a flawless product with fantastic strength.
SCOPE OF ASSESSMENT:	From extraction of raw materials through to production of the final Office Furniture unit (cradle to gate). See page 2 for more details.
FUNCTIONAL UNIT:	A seating solution designed and manufactured to last 10 years.
DATA USED:	Primary data was used wherever possible including for energy use during the core module. All secondary data was obtained from the EcoInvent database. used in conjunction with SimaPro 7.3.2, using European data only.
REGIONAL MARKET:	The primary market for our Office Furniture products is Europe. The scope of this declaration reflects that.
DATE OF PRODUTION:	02 DECEMBER 2013

ENVIRONMENTAL SUMMARY INFORMATION

GLOBAL WARMING POTENTIAL (Kg CO2 eq): 16.92

TOTAL ENERGY CONSUMPTION (MJ): 515.79

RECYCLED CONTENT (% by weight): 0

RECYCLABILITY (% by weight): 99.00

MATERIALS DECLARATION

MATERIAL	AMOUNT (KG)	PERCENT OF TOTAL
POLYPROPYLENE	4	100

Compilation and processing of LCA data performed by Dr. Dan Skinner (Oakdene Hollins Ltd.)

Verification of LCA and environmental data performed by Dr. Adrian Chapman (Oakdene Hollins Ltd.)

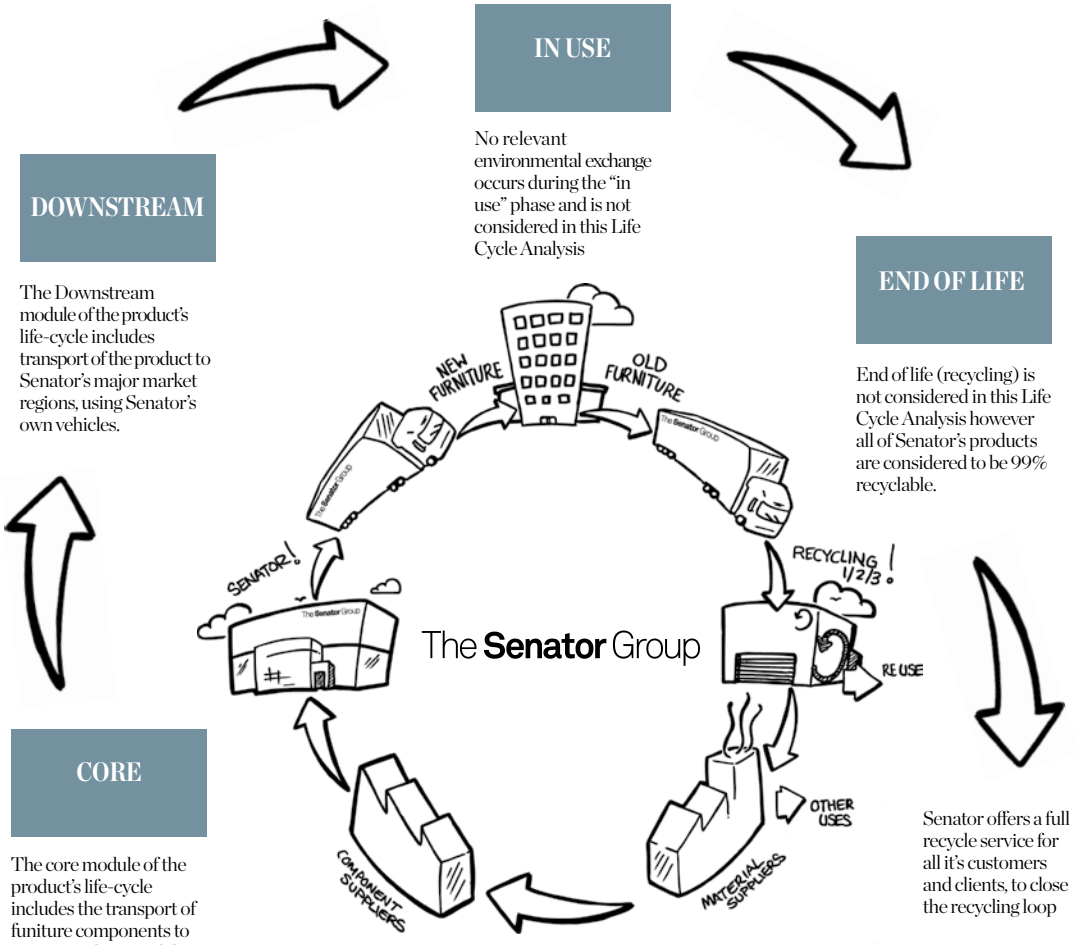
SYSTEM BOUNDARIES

The Senator Group has for many years acknowledged that the key word upon which to focus our attention is Sustainability rather than Recyclability in pure isolation.

Our business takes a truly holistic approach to the design, manufacture, supply and reclamation of our products. We see this as a cyclical process. From design to manufacture, use and reclamation we aspire to minimise all environmental impacts of Senator's products and processes. We harvest the resources back from the retired products then remanufacture or reintroduce the materials into our component manufacturers supply chain.

We believe in taking responsibility for our own actions ourselves, in wherever possible rather than relying on third parties or abdicating our responsibilities by offsetting.

The process of Sustainability is a cyclical one we understand this and we actively pursue this in everything that we do.



SYSTEM BOUNDARIES

RESOURCE	UPSTREAM	CORE	DOWNSTREAM	TOTAL
FROM THE AIR	0.35	0.55	0.00	0.90
FROM THE GROUND	7.24	6.71	0.19	14.14
FROM THE WATER	0.00	0.00	0.00	0.00

ENERGY CONSUMPTION

RENEWABLE ENERGY (MJ)	UPSTREAM	CORE	DOWNSTREAM	TOTAL
BIOMASS	4.45	6.10	0.00	10.55
HYDRO	4.26	1.67	0.02	5.95
SOLAR	0.01	0.00	0.00	0.01
WIND	0.48	0.58	0.00	1.06
NON-RENEWABLE ENERGY (MJ)	412.00	84.03	2.19	498.22
TOTAL	**421.20**	**92.38**	**2.21**	**515.79**

ENVIRONMENTAL IMPACT POTENTIAL

Resource	UPSTREAM	CORE	DOWNSTREAM	TOTAL
GLOBAL WARMING (kg CO2 equivalents)	12.16	4.63	0.13	16.92
ACIDIFICATION (Kg SO2 equivalents)	0.04	0.02	0.00	0.06
EUTROPHICATION (Kg PO43 equivalents)	0.00	0.00	0.00	0.00
OZONE DEPLETION (Kg CFC 11 equivalents)	0.00	0.00	0.00	0.00
PHOTOCHEMICAL SMOG (Kg C2H4 equivalents)	0.01	0.00	0.00	0.01

TOXIC EMISSIONS

RESOURCE	UPSTREAM	CORE	DOWNSTREAM	TOTAL
FROM THE AIR	11.95	47.28	12.57	71.80
FROM THE GROUND	0.00	0.01	0.00	0.01
FROM THE WATER	0.56	1.19	0.19	1.94

RECYCLED CONTENT

MATERIAL	RECYCLED CONTENT OF MATERIAL (%BY WEIGHT)	RECYCLED CONTENT IN PRODUCT (%BY WEIGHT)
POLYPROPYLENE	0.00	0.00
TOTAL		**0.00**

CERTIFICATIONS

DESCRIPTION	ACCREDICATION	CERTIFIED
QUALITY ASSURANCE	ISO 9001	CERTIFIED 1991
ENVIRONMENTAL MANAGEMENT	ISO 14001	CERTIFIED 2001
CHAIN OF CUSTODY	FSC	CERTIFIED 2003
SUSTAINABILITY	FISP	CERTIFIED 2006
ENERGY MANAGEMENT	ISO 50001	CERTIFIED 2013

ISO 14001 ENVIRONMENTAL STANDARD

This aims to reduce and eliminate and all negative impacts Senator's production units have on the environment and we can demonstrate our performance since 2001.

In 2013 Senator was awarded the 2013 Worshipful Company of Funiture Makers Sustainability Award

FISP (FURNITURE INDUSTRY SUSTAINABILITY PROGRAMME)

Awarded by FIRA, this sustainability certificate is designed to monitor all sustainability aspects of a company's facilities and operations. Senator achieved one of the first sustainability certifications within the furniture industry – a public declaration of our commitment to improving our performance in every possible way.

CHAIN OF CUSTODY

Independent certification to prove Senator only purchases MFC/MDF/Chipboard from manufacturers who can prove they purchase their raw wood from sustainable sources.

ISO5001 ENERGY MANAGEMENT

External proof that Senator has implemented a robust system to monitor all energy usage and have a process to continually minimise energy usage.

We believe Senator is the first company in the furniture industry to achieve this standard.

SENATOR 3 R'S

Senator is committed to continually improving the sustainability of all environmental aspects within our business.

To meet both international standards and our own environmental targets we apply the three R's principle -Reduce, Reuse and Recycle.

Whilst recycling is the element which receives the most exposure it is actually the last option available and should never be the prime target in anyone's battle to reduce waste.

It is our duty as individuals and as a company to initially attempt to **Reduce** usage. Then we should look to **Reuse** wherever possible and finally, only after these two processes have been exhausted, should we consider **Recycling**.

–Reduce
–Reuse
–Recycle

ASSESSMENT CONSIDERATIONS

The following necessary assumptions and considerations were made during the course of the Life-Cycle Analysis:

- Manufacture of the furniture components was asumed to take place in the same factory in which the raw materials were processed, due to a lack of case-specific data
- The transport of all materials, components and finished products was assumed to be via 16-32t Euro 5 lorries
- All LCA data was modelled using the IMPACT 2002+ (v2.06) method.

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