

# Evolve

## EV740HA TASK CHAIR

by **Senator**



### 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

|                             |   |
|-----------------------------|---|
| <b>PRODUCT DESCRIPTION:</b> | With the design of Evolve we focused upon; intuitive comfort and simple user adjustment. The inclusion of flexible seat and back membranes; enhance comfort and flexibility whilst also delivering excellent thermal benefits to the user. A comprehensive suit of dimensional adjustments and a progressive synchronous tilt action complete the solution. |
| <b>SCOPE OF ASSESSMENT:</b> | From extraction of raw materials through to production of the final Office Furniture unit (cradle to gate). See page 2 for more details.  |
| <b>FUNCTIONAL UNIT:</b>     | A seating solution designed and manufactured to last 10 years.  |
| <b>DATA USED:</b>           | Primary data was used wherever possible including for energy use during the core module. All secondary data was obtained from the Ecolnvent database. used in conjunction with SimaPro 7.3.2, using European data only.   |
| <b>REGIONAL MARKET:</b>     | The primary market for our Office Furniture products is Europe. The scope of this declaration reflects that.  |
| <b>DATE OF PRODUCTION:</b>  | 02 DECEMBER 2013  |

### ENVIRONMENTAL SUMMARY INFORMATION

|  |   |
|--|---|
| <b>GLOBAL WARMING POTENTIAL ( Kg CO<sub>2</sub> eq):</b> 75.95 | <b>RECYCLED CONTENT (% by weight):</b> 40 |
| <b>TOTAL ENERGY CONSUMPTION ( MJ):</b> 1564.5                  | <b>RECYCLABILITY (% by weight):</b> 99.00 |

### MATERIALS DECLARATION

| MATERIAL           | AMOUNT (KG) | PERCENT OF TOTAL |
|--------------------|-------------|------------------|
| Aluminium castings | 3.73        | 23.07            |
| Fabric             | 0.75        | 4.64             |
| PU foam            | 0.4         | 2.47             |
| Nylon 6            | 4.85        | 29.99            |
| Polypropylene      | 1.75        | 10.82            |
| Steel              | 4.69        | 29               |

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

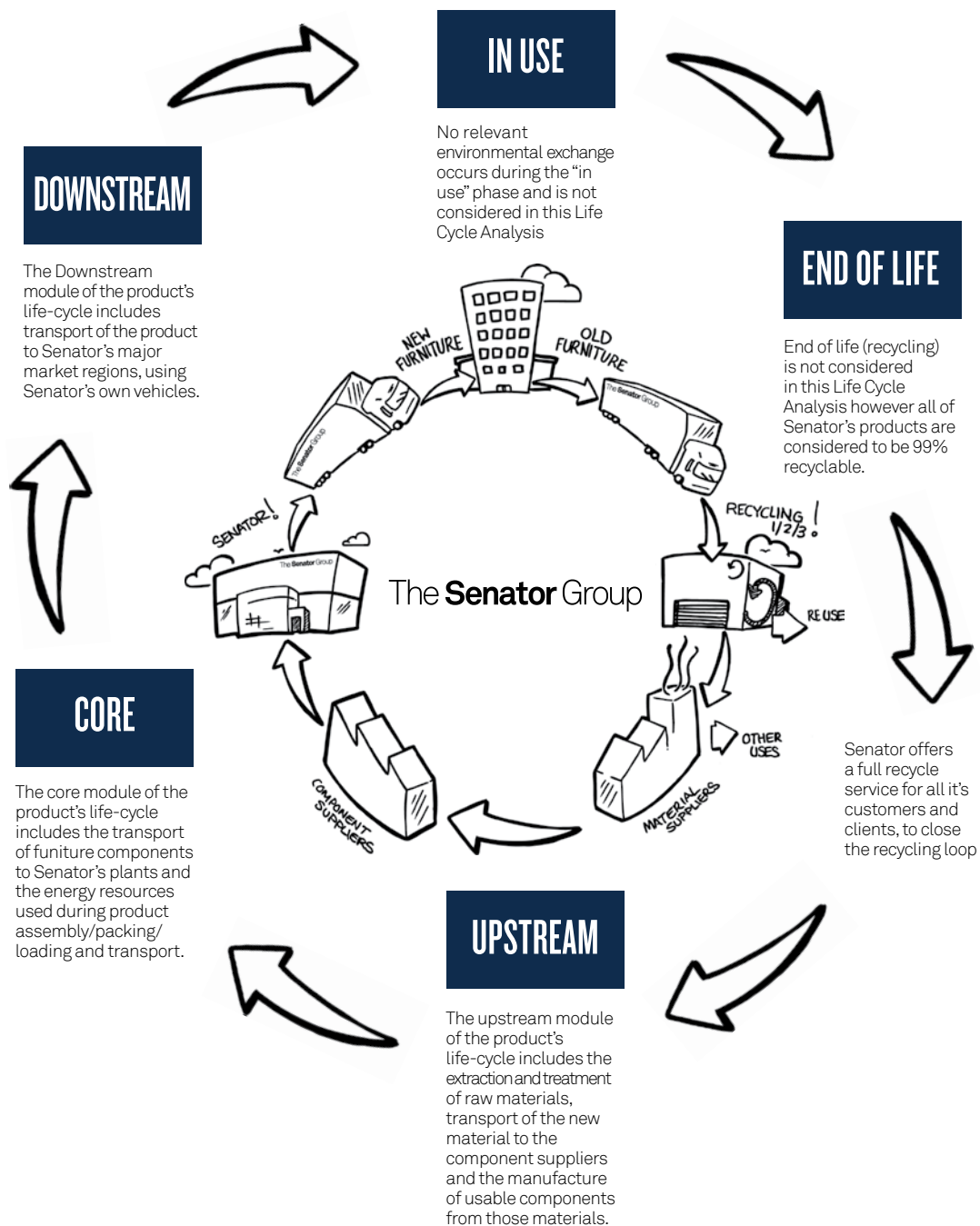
The Senator Group has for many years acknowledged that the key word upon which to focus our attention is Sustainability rather than Recyclability in pure isolation.

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    | 7.11     | 0.56 | 0.00       | 7.67  |
| FROM THE GROUND | 38.92    | 8.13 | 0.76       | 47.81 |
| FROM THE WATER  | 0.00     | 0.00 | 0.00       | 0.00  |

## ENERGY CONSUMPTION

| RENEWABLE ENERGY (MJ)     | UPSTREAM       | CORE          | DOWNSTREAM  | TOTAL          |
|---------------------------|----------------|---------------|-------------|----------------|
| BIOMASS                   | 79.93          | 6.13          | 0.02        | 86.08          |
| HYDRO                     | 24.34          | 1.85          | 0.09        | 26.28          |
| SOLAR                     | 0.03           | 0.00          | 0.00        | 0.03           |
| WIND                      | 2.29           | 0.59          | 0.00        | 2.88           |
| NON-RENEWABLE ENERGY (MJ) | 1339.72        | 100.67        | 8.84        | 1449.23        |
| <b>TOTAL</b>              | <b>1446.31</b> | <b>109.24</b> | <b>8.95</b> | <b>1564.50</b> |

## ENVIRONMENTAL IMPACT POTENTIAL

| RESOURCE                                 | UPSTREAM | CORE | DOWNSTREAM | TOTAL |
|--|----------|------|------------|-------|
| GLOBAL WARMING (kg CO2 equivalents)      | 69.82    | 5.61 | 0.52       | 75.95 |
| ACIDIFICATION (Kg SO2 equivalents)       | 0.31     | 0.02 | 0.00       | 0.33  |
| EUTROPHICATION (Kg PO43 equivalents)     | 0.01     | 0.00 | 0.00       | 0.01  |
| OZONE DEPLETION (Kg CFC 11 equivalents)  | 0.00     | 0.00 | 0.00       | 0.00  |
| PHOTOCHEMICAL SMOG (Kg C2H4 equivalents) | 0.03     | 0.00 | 0.00       | 0.03  |

## TOXIC EMISSIONS

| RESOURCE        | UPSTREAM | CORE   | DOWNSTREAM | TOTAL  |
|-----------------|----------|--------|------------|--------|
| FROM THE AIR    | 65.95    | 142.89 | 50.82      | 259.66 |
| FROM THE GROUND | 0.02     | 0.02   | 0.01       | 0.04   |
| FROM THE WATER  | 4.89     | 2.61   | 0.75       | 8.25   |

## RECYCLED CONTENT

| MATERIAL           | RECYCLED CONTENT OF MATERIAL (%by weight) | RECYCLED CONTENT IN PRODUCT (%by weight) |
|--------------------|---|--|
| Aluminium castings | 100.00                                    | 23.00                                    |
| Fabric             | 50.00                                     | 2.50                                     |
| PU foam            | 0.00                                      | 0.00                                     |
| Nylon 6            | 0.00                                      | 0.00                                     |
| Polypropylene      | 0.00                                      | 0.00                                     |
| Steel              | 50.00                                     | 14.50                                    |
| <b>TOTAL</b>       |   | <b>40.00</b>                             |

## CERTIFICATIONS

| DESCRIPTION              | ACCREDITATION | 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 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 Furniture 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 assumed 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.