

# Environmental Product Declaration

## RH Activ

### S-P-00275

This declaration has been compiled by:  
IVL Swedish Environmental Research Institute Ltd.

#### Product description

The model chosen for analysis is the office chair RH Activ.

RH Activ is a range of chairs that function equally well as work chairs or office chairs. The chair follows your slightest body movement – comfortably as well as ergonomically. Since, just like every one of our chairs, it is based on our 2PP™ philosophy of active sitting. RH Activ is an office chair that – thanks to its simplicity and ergonomic design – fits most working environments, for example, in offices and industrial settings. This office chair is available in four basic models.

#### Manufacturer

RH Chairs is one of northern Europe's leading manufacturers of ergonomic seating. RH Chairs was established in 1977 in Bodafors, in the Swedish province of Småland. Our plant is now located in nearby Nässjö. Today we are established in Norway, Denmark, Finland, the United Kingdom, France and the Netherlands, in addition to Sweden. RH's manufacturing plant in Nässjö is certified in accordance with ISO 9001 and ISO 14001.

#### SB Seating AB

PO Box 294  
SE-571 23 Nässjö, Sweden  
Corporate identity number: 556411-5672  
Contact: Carl Peter Aaser, tel. +47 22 59 59 00, carl.aaser@sbseating.com



## RH Environment

RH's environmental work is based on our goal of creating a sustainable society. Our work chairs offer a high level of quality and a long lifetime and are externally tested in accordance with EN 1335 and BS 5459:2. Parts that have become worn out can easily be exchanged, including the seat and back pad. Already at the design stage, we take steps to ensure that future disassembly, sorting of materials and recycling are as simple and complete as possible. The plastic parts are labelled in accordance with ISO 11469.

RH has reviewed energy consumption in production to help lessen the greenhouse effect. We have been able to reduce energy consumption and have switched to a more sustainable method of heating our premises – district heat. We also save resources by using consumable materials, transport and packaging more efficiently. RH imposes environmental requirements on suppliers concerning chemical substances with the purpose of minimising harmful effects to customer health and to the environment from RH's products. The plastics do not, for example, contain PVC, mercury, cadmium, lead, or brominated or chlorinated flame retardants such as PBB or PBDE. No chair parts contain Chromium VI.

<b>Scope of assessment:</b>	Module declaration: from extraction of raw materials to complete seating solutions, including user phase.
<b>Functional unit:</b>	Seating solution manufactured and maintained for 15 years.
<b>Year of study:</b>	2010-2011.
<b>Data:</b>	Production data from 2010. Site-specific data from suppliers of main parts and from Scandinavian Business Seating's manufacturing unit.
<b>Expected market area:</b>	Europe

## Key environmental indicators per chair

RH Activ			Recycling is divided into:	
GWP – Global Warming Potential	66	kg CO <sub>2</sub> -equiv.	Energy recovery	9.7 %
Recycled material in RH Activ	21	%	Material recycling	90.3 %
			Total	100 %

## Material declaration

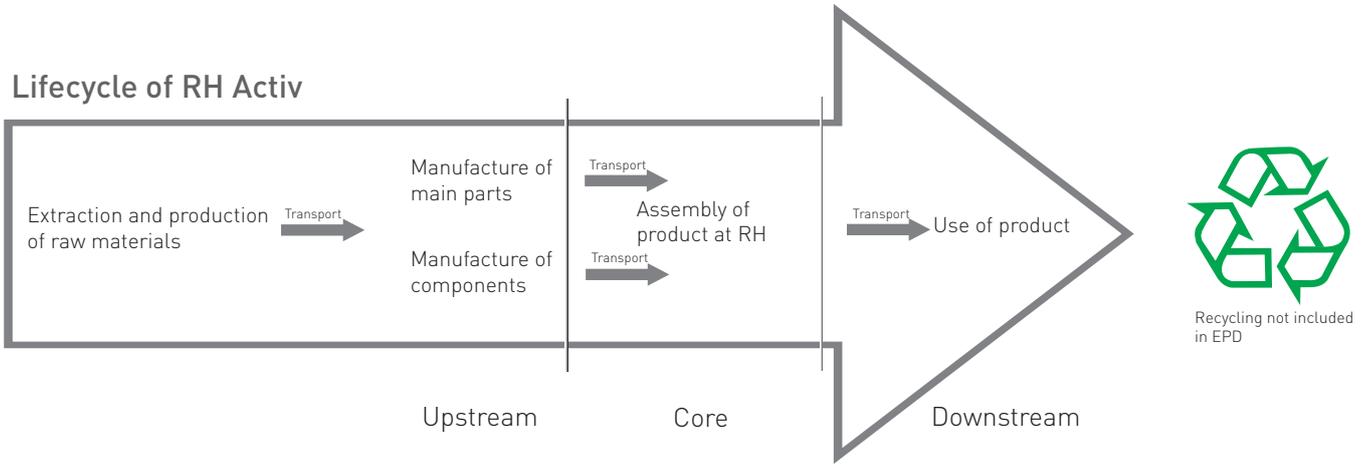
The RH Activ office chair consists of the materials listed below. The total weight is 13.3 kg (packaging not included in weight).

Metals	Weight g	%	Plastics	Vikt g	%	Other materials	Vikt g	%
Steel	6,118	45.9	PP	2,774	20.8	Textiles	178	1.3
Aluminium	32	0.2	PA6 GF	2,654	19.9	Packaging materials	3,099	
			PUR	1,114	8.4			
			Other plastics	470	3.5			

# Environmental performance profile

## System boundaries

Presented below is a simplified process chart that shows the studied system and the main system boundaries for the calculation of the environmental performance profiles. The studied system includes production of materials and parts, assembly, transport to retail and the user phase. Transport between the processes and packaging production is also included. The studied system also includes waste from the different lifecycle phases.



Upstream	Core	Downstream	Use of product
- <i>Production of Material and Parts.</i> The environmental impact from materials extraction and the production of raw materials for all main parts and components is considered. The environmental impact of the manufacturing process for main parts is also included. The environmental impact from the transport of raw materials is included.	- <i>Assembly</i> All production and assembly processes at RH are considered. The environmental impact from the transport of parts to assembly is included.	- <i>Transport to customer</i> Transport of the product to the customer is calculated as a 1,000 km transport by heavy truck.	No relevant environmental impact occurs during the use of the product.

## Material resources

The table below shows the resources used for the manufacturing of RH Activ

Resources consumed in kg	kg
<b>Non-renewable resources</b>	
<b>With energy content</b>	
Crude oil	7.6
Hard coal	11.0
Natural gas	7.5
Uranium in ore	2.40E-04
Lignite	1.7
<b>Without energy content</b>	
Bauxite	0.32
Dolomite	0.44
Rock	36
Iron in ore	8.6
Limestone	1.2
Sodium chloride	2.3
Other	1.8
<b>Renewable resources with energy content</b>	
Wood	24 MJ
Hydropower	42 MJ
Wind power	6.6 MJ
Biomass	2.7 MJ
Other	1.4 MJ
<b>Water usage</b>	
Water, total aggregated*	2,200 kg

\*Does not include water used for hydroelectric power



# Environmental impact potential

Emissions to air, water and soil

	Upstream	Core	Downstream	Total
<b>Global warming</b> (kg CO <sub>2</sub> equivalents)	61	4.1	1.2	66
<b>Acidification</b> (kg SO <sub>2</sub> equivalents)	0.26	0.025	0.0058	0.3
<b>Ozone depletion</b> (kg CFC 11 equivalents)	5.2E-07	2.2E-07	5.7E-09	7.5E-07
<b>Photochemical oxidant formation</b> (kg C <sub>2</sub> H <sub>4</sub> equivalents)	0.02	0.003	6.2E-04	0.023
<b>Eutrophication</b> (kg PO <sub>43</sub> equivalents)	0.054	0.004	0.0014	0.059

## Non-hazardous and hazardous waste from cradle to gate

The recycling of the product is not included due to local and national rules.

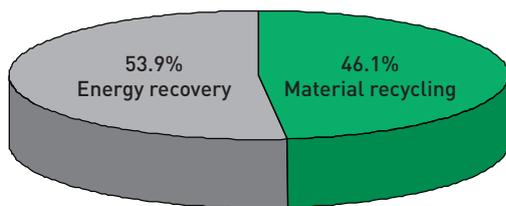
Harmful waste	Other waste
0.31 kg	38 kg

## Maintenance

RH Chairs are built for long and problem-free usage. Normal use and cleaning means that the chair will achieve its maximum lifetime and maintain its proper ergonomic properties. The seat and back pad can be exchanged if they become worn or damaged. For stain guide, see [www.rhchairs.com](http://www.rhchairs.com).

## Recycling declaration

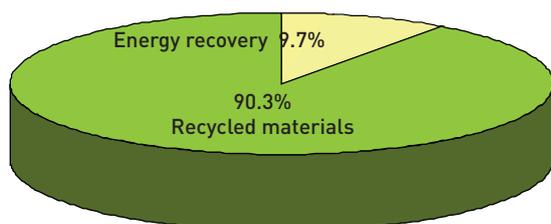
The RH Activ chair is 100-percent suited for recovery, divided into material recycling and incineration with energy recovery. The chairs are easily disassembled with all major components bearing clear material labels, enabling them to be sorted correctly for recycling. Packaging is also kept to a minimum and designed to be recycled.



Incineration with energy recovery	Material recycling
Plastic	Steel
Textiles	Aluminium
Other materials	

Corrugated cardboard used for packaging is suitable for material recycling.

Plastics can be recycled where the systems for this exist.



Incineration with energy recovery	Material recycling
PUR	Steel
Textiles	Aluminium
Other materials	Recyclable plastic

Corrugated cardboard used for packaging is suitable for material recycling.

## Other environmental information

- The metals in our chairs can be recycled several times thereby lessening the environmental impact.
- The cardboard packaging is made of 50% recycled material.

## Certification

EPD Certification S-P-00275

This certification is valid until 26 June 2014.

According to the requirements of the international EPD system, General Programme Instructions, version 1 – [www.environdec.com](http://www.environdec.com).

The PCR for RH Activ (Product Category rules (PCR) for Environmental Product Declaration (EPD): UN CPC Class 3811 Seats. Dated 1 August 2009). The review was conducted by the Swedish Environmental Management Council (SEMCO) by an LCA expert panel ([www.environdec.com](http://www.environdec.com)) chaired by Sven-Olof Ryding ([sven-olof@miljostyrning.se](mailto:sven-olof@miljostyrning.se)).

Independent verification of the declaration, according to ISO 14025:

internal  external

Third-party verification: The third party verifier, Bureau Veritas, has been accredited by the Swedish Authority for Conformity and Control (SWEDAC) EPDs within the same product category but from different programmes may not be comparable.

## References

Kristian Jelse and Christian Junestedt (2011), Life cycle assessment of the RH Activ office chair. IVL Swedish Environmental Research Institute, IVL report No. U3246.

Swedish Environmental Management Council (2008), Product Category Rules (PCR) for Environmental Product Declaration (EPD): UN CPC Class 3811 Seats. Dated 1 August 2009.

IEC (2008), General Programme Instructions for Environmental Product Declarations, EPD. The International EPD Corporation. Document version 1.0, dated 29 February 2008. Available at [www.environdec.com](http://www.environdec.com).

IEC (2008), Supporting Annexes for Environmental Product Declarations, EPD. The International EPD Corporation. Document version 1.0 dated 29 February 2008. Available at [www.environdec.com](http://www.environdec.com).

