

## Environmental Product Declaration

A presentation of the environmental performance of **Amia**.  
An environmental declaration according to the objectives of ISO/TR 14025, based on Life Cycle Assessment (ISO 14044).



### Product Description

The enveloping backrest and the textured, refined look of **Amia** are immediately inviting. And as soon as you sit down in this robust yet comfortable chair, you know you've found something special. Both the LiveLumbar™ support and the flexible seat edge angle adjust automatically to your body shape.

The model chosen for analysis is the most frequently ordered task chair (model 482 200 MP) from the Amia seating range.

It is equipped as follows:

- Synchronised mechanism
- Seat height adjustment
- Seat depth adjustment
- Tilt tension adjustment
- Back lock in forward adjustment
- Passive front edge
- Impact absorber
- Castors Ø 65 mm
- Seat pre-assembled



### Manufacturer

The selected product **Amia** is manufactured in Sarrebourg, France, by Steelcase, for the EMEA market (Europe, Middle East and Africa).

Since 1912, Steelcase has been committed to continually reducing the environmental impacts of its products and activities on a global scale, by constantly seeking more effective ways to conserve resources, prevent pollution and nurture environmental consciousness in its people every day. Sustainable development is embedded in everything we do.

Steelcase has management systems for quality (ISO 9001) and for the environment (ISO 14001 and/or EMAS II), ensuring that our customers are guaranteed the same level of product performance, wherever they are in the world.

Steelcase has a multi-site PEFC certification; for its production facilities at four European sites. The certification acknowledges that Steelcase has gone to great lengths to ensure that the wood used in its products has been sourced from environmentally friendly suppliers.

To show continuous improvements, Steelcase communicates the environmental performance of its products through voluntary environmental labels and declarations. The Steelcase Environmental report looks at things that have helped spur our environmental thinking and commitment and the subsequent actions and results.

For further information see [steelcase.com](https://www.steelcase.com)

## Material Declaration

The **Amia** task chair consists of the materials listed below. The total weight is 25.473 kg including packaging.

metals	kg	%	plastics	kg	%	other materials	kg	%
Steel	11.920	46.8	PA6 GF33 (Polyamide 6 Glass Fibres 30%)	3.537	13.9	Cardboard	3.314	13.0
Zamak	0.030	0.1	PP (Polypropylene)	3.342	13.1	Paper	0.078	0.3
Bronze	0.010	0.0	PA6 (Polyamide 6)	1.254	4.9	Fibreglass	0.002	0.0
			PU (Polyurethane) foam	0.697	2.7			
			PE-type plastics	0.689	2.7			
			TPU (Thermoplastic Polyurethane)	0.264	1.0			
			POM (Polyoxymethylene)	0.200	0.8			
			LDPE (Low Density Polyethylene) for packaging	0.120	0.5			
			ABS (Acrylonitrile-Butadiene Styrene)	0.016	0.1			

## Environmental Product Declaration

The potential environmental impacts of **Amia** (incl. packaging) throughout its entire life cycle – including raw materials extraction, production, transport, use, and end of life – were assessed using Life Cycle Assessment (LCA – ISO 14044) in July 2008. Both method and product may have been subject to improvements since then. Environmental declarations from different programmes may not be comparable.

The **functional unit** – i.e. the quantified performance of the product for use as a reference unit – used in the Life Cycle Assessment was chosen as “Provision of comfortable office working – with the features stated in the product description – for 8 hours a day, 5 days a week over 15 years”.

### Life Cycle Inventory Analysis

The Life Cycle Inventory Analysis covers all life cycle stages as shown below.



#### Materials

This stage includes raw materials extraction and transformation into material ready to be used.

#### Production

This stage comprises all production and assembly processes taking place at Steelcase or at their suppliers. Data was obtained from suppliers and from the ISO 14001 environmental management system(s) of the production site.

#### Transport

Transport from suppliers to the production site and transport from the production site to the EMEA market (Europe, Middle East and Africa) is considered.

#### Use

During the use stage of the product – the longest stage of the life cycle – no relevant environmental impacts occur.

#### End of life

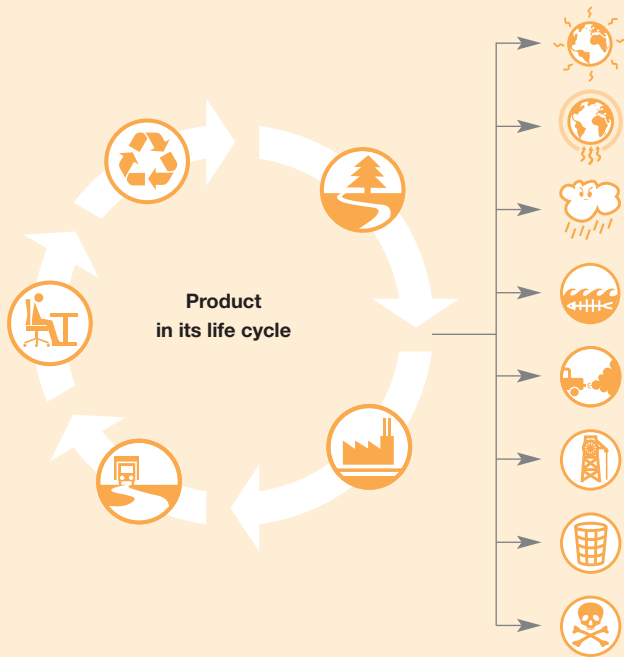
Any product can be disposed of in different ways, or become a resource itself. Based on current European averages it was assumed that about 60% of the products are sent to landfill, 27% are incinerated and 13% are recycled at the end of their useful life.

### Distribution of the environmental impacts for the relevant life cycle stages

Category	Unit	Total	Materials	Production	Transport	Use	End of life	
	<b>Global warming</b>	[g CO <sub>2</sub> -equ.]	111155	67134	30178	10228	No relevant environmental impacts occur	3614
	<b>Stratospheric Ozone depletion</b>	[g CFC11-equ.]	0.0113	0.0009	0.0114	0	No relevant environmental impacts occur	-0.0010
	<b>Acidification</b>	[g SO <sub>2</sub> -equ.]	933	519	328	101	No relevant environmental impacts occur	-14
	<b>Eutrophication</b>	[g NO <sub>3</sub> -equ.]	969	536	268	173	No relevant environmental impacts occur	-9
	<b>Photochemical smog</b>	[g C <sub>2</sub> H <sub>4</sub> -equ.]	56	36	9	10	No relevant environmental impacts occur	0

# Life Cycle Assessment

Environmental impact categories



## Global warming

is due to emissions of greenhouse gases, causing the rise of global temperature.

## Stratospheric ozone depletion

is due to aerosols and other gaseous pollutants, causing the destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life.

## Acidification

is due to emissions of acids, causing the degradation of materials such as metals, limestone and concrete, and damage to trees and life in lakes and rivers.

## Eutrophication

is due to emissions of nutrients, causing blooms of algae. The degradation of dead algae consumes oxygen leading to the loss of plants and animals.

## Photochemical smog

is due to a mixture of pollutants which includes volatile organic components, particulates, nitrogen oxides, ozone... It's harmful to human health (causing inhalation irritations lung problems, coughing and wheezing) and the environment (damage to plants and crops).

## Abiotic resource depletion

is due to extraction and consumption of non-renewable resources such as oil, coal and metals.

## Waste

is the bulk waste and hazardous waste created during the whole life cycle of the product.

## Toxic substances








are substances which cause harm to the natural environment or human health, emitted during the whole life cycle of the product.

## Environmental aspects of Amia

The contributions of inventory parameters to different impact categories throughout the entire life cycle of **Amia** are listed below.

Contributions to Stratospheric Ozone Depletion are tracked but not mentioned below due to extremely low values.

Life cycle inventory parameters are mentioned only if they contribute more than 1% of the total impact in that impact category.

Category	Parameter	Inventory value	Unit	Characterized impact value	Unit
 <b>Global warming</b>	CO <sub>2</sub>	(Carbon dioxide)	94504 g	<b>Total 111155 g CO<sub>2</sub>-eq.</b>	85.0 %
	N <sub>2</sub> O	(Nitrous oxide)	7762 g		6.9 %
	CH <sub>4</sub>	(Methane)	4966 g		4.5 %
	HC	(Hydrocarbons)	2948 g		2.6 %
 <b>Acidification</b>	SO <sub>x</sub>	(Sulfur oxides)	493 g	<b>Total 933 g SO<sub>2</sub>-eq.</b>	52.9 %
	NO <sub>x</sub>	(Nitrogen oxides)	615 g		46.1 %
 <b>Eutrophication</b>	NO <sub>x</sub>	(Nitrogen oxides)	615 g	<b>Total 969 g NO<sub>3</sub>-eq.</b>	85.7 %
	N <sub>2</sub> O	(Nitrous oxide)	24 g		7.1 %
	PO <sub>4</sub> <sup>3-</sup>	(Phosphate ion)	4 g		4.7 %
	NH <sub>4</sub> <sup>+</sup>	(Ammonium ion)	4 g		1.6 %
 <b>Photochemical smog</b>	C <sub>5</sub> H <sub>12</sub>	(Pentane)	52 g	<b>Total 56 g C<sub>2</sub>H<sub>4</sub>-eq.</b>	37.6 %
	CO	(Carbon monoxide)	493 g		26.6 %
	C <sub>7</sub> H <sub>8</sub>	(Toluene)	14 g		15.5 %
	NMVOCS*	(from diesel engines)	12 g		13.4 %
	VOCs*	(from diesel engines)	3 g		3.3 %
	CH <sub>4</sub>	(Methane)	199 g		2.5 %
 <b>Abiotic resource depletion</b>	Crude oil		17739 g		-
	Coal		16198 g		-
	Natural gas		12192 g		-
	Iron	(in ore)	7628 g		-
 <b>Waste</b>	Bulk waste		3900 g		-
	Hazardous waste		11 g		-
 <b>Toxic substances</b>	Toxic substances		366 g		-

No characterized impacts were calculated for Abiotic resource depletion, Solid waste and Toxic substances, due to lack of credible, internationally agreed characterisation factors.

\* VOCs = Volatile organic compounds, NMVOCS = non-methane VOCs

## Additional environmental information

### Environmental labels and declarations on products and materials

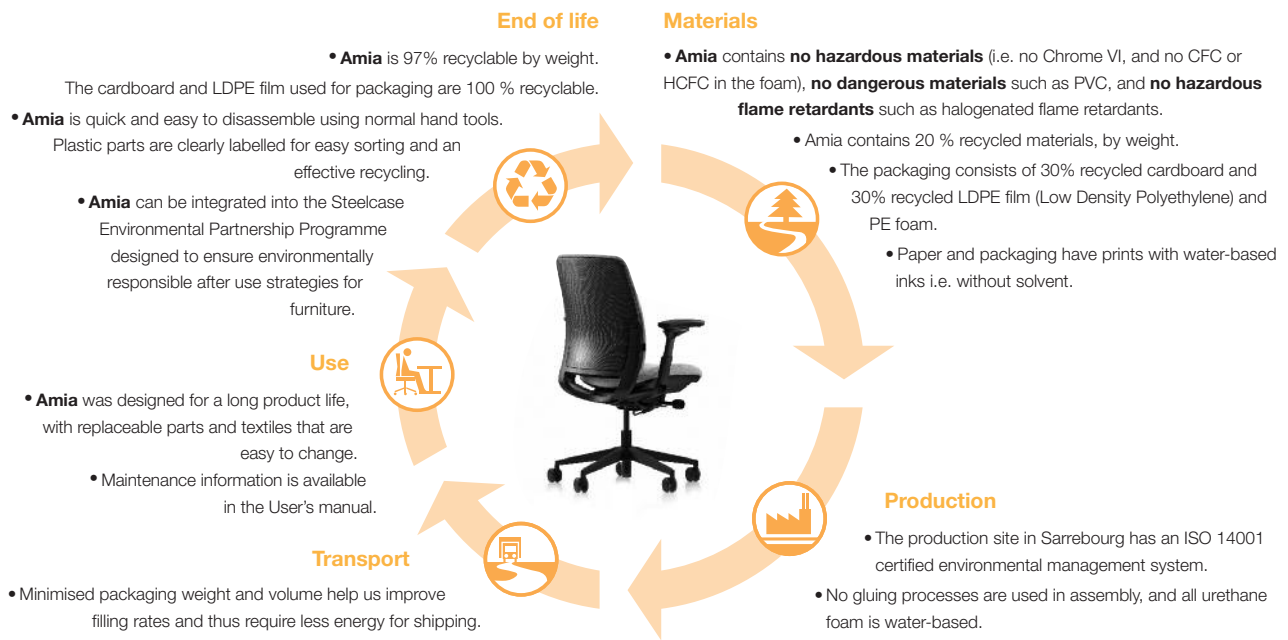


The pure wool fabric is labelled with the "European Flower"



The polyester fabric is labelled with the "Oeko-Tex 100 Standard"

### Actions for reducing the environmental impacts at each stage of the environmental life cycle



## Compilation and Verification Process

- The LCA study of **Amia** (reference 482 200 MP) was carried out by Steelcase, according to ISO 14044, with the support of the ENSAM of Chambéry - France (Ecole Nationale Supérieure des Arts et Métiers). It was then critically reviewed by the IPU Product Development - Denmark.
- The independent verification of the environmental declaration (EPD – ISO/TR 14025) was carried out by IPU Product Development - Denmark.

## References

### Form of document

- ISO/TR 14025: Environmental labels and declarations – Type III environmental declarations.
- Lee, K.M., Park, P.: "Application of Life-Cycle Assessment to Type III Environmental Declarations", Environmental Management, Vol. 28, No. 4, 2001, pp. 533-546.

### LCA method and characterisation factors

- EDIP method: Wenzel, Hauschild, Alting: "Environmental Assessment of Products" Volume 1 (Methodology, tools and case studies in product development), Chapman and Hall, 1997, ISBN 0 412 80800 5.
- Intergovernmental Panel on Climate Change (IPCC), status reports, 1995 and 2001.

### End of life scenario

- European Topic Centre on Waste and Material Flows, Copenhagen, Denmark, Sept. 2002, <http://waste.eionet.eu.int>

## Contact

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