

# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Savo Soul without armrest & neckrest upholstered back and seat excl. fabric





The Norwegian EPD Foundation

## Owner of the declaration:

EFG European Furniture Group AB

#### **Product:**

Savo Soul without armrest & neckrest upholstered back and seat excl. fabric

## **Declared unit:**

1 pcs

## This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR

NPCR 026:2022 Part B for Furniture

## **Program operator:**

The Norwegian EPD Foundation

## **Declaration number:**

NEPD-5248-4577-EN

## Registration number:

NEPD-5248-4577-EN

Issue date: 23.10.2023

Valid to: 23.10.2028

## **EPD Software:**

LCA.no EPD generator ID: 101559



## **General information**

#### **Product**

Savo Soul without armrest & neckrest upholstered back and seat excl. fabric

#### **Program operator:**

Post Box 5250 Majorstuen, 0303 Oslo, Norway The Norwegian EPD Foundation Phone: +47 23 08 80 00 web: post@epd-norge.no

**Declaration number: NEPD-5248-4577-EN** 

#### This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012 + A2:2019 serves as core PCR NPCR 026:2022 Part B for Furniture

## Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

#### **Declared unit:**

1 pcs Savo Soul without armrest & neckrest upholstered back and seat excl. fabric

## Declared unit (cradle to gate) with option:

A1-A3,A4,A5,B2,B3,B4,C1,C2,C3,C4,D

#### Functional unit:

Office chair, type A

## General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Norway's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Norway, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools

## **Verification of EPD tool:**

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools.

Third party verifier:

Elisabet Amat, GREENIZE projects (no signature required)

#### Owner of the declaration:

EFG European Furniture Group AB Contact person: Christer Johansson Phone: e-mail: christer.johansson@efg.se

#### Manufacturer:

EFG European Furniture Group AB

#### Place of production:

EFG European Furniture Group AB

, Norway

#### Management system:

ISO 14001

## Organisation no:

Issue date: 23.10.2023

Valid to: 23.10.2028

## Year of study:

2022

## **Comparability:**

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

## **Development and verification of EPD:**

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD Norway.

Developer of EPD: Andreas Mattisson

Reviewer of company-specific input data and EPD: Christer Johansson

## Approved:

Håkon Hauan, CEO EPD-Norge



## **Product**

## **Product description:**

Task chair, type A

## **Product specification**

Task chair, type A

Materials	kg	%	Recycled share in material (kg)	Recycled share in material (%)
Glass fibre	0,73	5,06	0,00	0,00
Metal - Aluminium	1,09	7,52	1,09	100,00
Metal - Steel	3,67	25,39	0,00	0,00
Plastic - Nylon (PA)	0,69	4,80	0,00	0,00
Plastic - Polyoxymethylene (POM)	0,14	0,94	0,00	0,00
Plastic - Polypropylene (PP)	6,24	43,15	6,24	100,00
Plastic - Polyurethane (PUR)	1,90	13,15	0,00	0,00
Total	14,45		7,32	

Packaging	kg	%	Recycled share in material (kg)	Recycled share in material (%)
Packaging - Cardboard	2,76	98,71	0,99	36,00
Packaging - Plastic	0,04	1,29	0,00	0,00
Total incl. packaging	17,25		8,32	

#### **Technical data:**

#### Market:

Scandinavia

## Reference service life, product

15 year

Reference service life, building

## LCA: Calculation rules

#### **Declared unit:**

1 pcs Savo Soul without armrest & neckrest upholstered back and seat excl. fabric

#### **Cut-off criteria:**

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

## Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

## Data quality:

Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Ostfold Research databases, ecoinvent and other LCA databases. The data quality of the raw materials in A1 is presented in the table below.

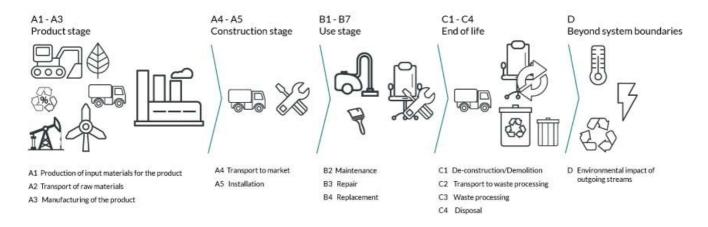
Materials	Source	Data quality	Year
Glass fibre	ecoinvent 3.6	Database	2019
Metal - Aluminium	ecoinvent 3.6	Database	2019
Metal - Steel	ecoinvent 3.6	Database	2019
Packaging - Cardboard	ecoinvent 3.6	Database	2019
Packaging - Plastic	ecoinvent 3.6	Database	2019
Plastic - Nylon (PA)	ecoinvent 3.6	Database	2019
Plastic - Polyoxymethylene (POM)	ecoinvent 3.6	Database	2019
Plastic - Polyurethane (PUR)	ecoinvent 3.6	Database	2019
Plastic - Polypropylene (PP)	Modified ecoinvent 3.6	Database	2019



# System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Р	roduct stag	ge		uction on stage				Use stage					End of I	ife stage		Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurb ishment	Operational energy use	Operational water use	De- construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery- Recycling-potential
A1	A2	A3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
Χ	Χ	Χ	Χ	Χ	MND	Χ	Χ	Χ	MND	MND	MND	Χ	Χ	Χ	Χ	X

## **System boundary:**



## Additional technical information:



# LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Check out www.savo.se for caring instructions

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 5 (km)	36,7 %	300	0,044	l/tkm	13,20
Assembly (A5)	Unit	Value			
Waste, packaging, corrugated board box, to average treatment (kg)	kg	2,76			
Waste, packaging, plastic film (LDPE), to average treatment - A5 (kg)	kg	0,04			
Maintenance (B2)	Unit	Value			
Household detergent, 5% soap solution (kg)	kg/DU	1,00			
Wastewater, average treatment (m3)	m3	0,00			
Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 5 (km)	36,7 %	85	0,044	l/tkm	3,74
Waste processing (C3)	Unit	Value			
Waste treatment per kg Plastics, Mixture, municipal incineration with fly ash extraction (kg)	kg	1,42			
Waste treatment per kg Polyoxymethylene (POM), incineration with fly ash extraction (kg) - CH - C3	kg	0,14			
Waste treatment per kg Polypropylene (PP), incineration with fly ash extraction - C3 (kg)	kg	6,24			
Waste treatment per kg Polyurethane (PU), incineration (kg)	kg	1,90			
Waste treatment per kg Scrap aluminium, incineration with fly ash extraction (kg)	kg	1,09			
Waste treatment per kg Scrap steel, incineration with fly ash extraction (kg)	kg	3,67			
Waste, materials to recycling (kg)	kg	1,36			
Disposal (C4)	Unit	Value			
Landfilling of ashes and residues from incineration of Scrap aluminium (kg)	kg	0,97			
Landfilling of ashes and residues from incineration of Scrap steel (kg)	kg	2,42			
Landfilling of ashes from incineration of Plastics, Mixture, municipal incineration with fly ash extraction, process per kg ashes and residues - C4 (kg)	kg	0,05			
Landfilling of ashes from incineration of Polyoxymethylene (POM), process per kg ashes and residues (kg) - CH - C4	kg	0,00			
Landfilling of ashes from incineration of Polypropylene, PP, process per kg ashes and residues - C4 (kg)	kg	0,19			
Landfilling of ashes from incineration of Polyurethane (PU), process per kg ashes and residues - C4 (kg)	kg	0,07			
Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of electricity, in Norway (MJ)	MJ	15,15			
Substitution of primary steel with net scrap (kg)	kg	1,24			
Substitution of thermal energy, district heating, in Norway (MJ)	МЈ	229,24			



## **LCA: Results**

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environme	ental impact							
	Indicator		Unit	A1-A3	A4	A5	B2	В3
	GWP-total		kg CO <sub>2</sub> -eq	5,25E+01	8,53E-01	4,73E+00	3,19E-01	0
	GWP-fossil		kg CO <sub>2</sub> -eq		8,53E-01	4,75E-02	1,11E-01	0
	GWP-biogenic		kg CO <sub>2</sub> -eq	-4,40E+00	3,48E-04	4,68E+00	5,16E-02	0
	GWP-luluc		kg CO <sub>2</sub> -eq	1,26E-01	2,98E-04	1,50E-05	1,56E-01	0
٨	ODP	k	g CFC11 -eq	3,84E-06	1,94E-07	9,59E-09	1,86E-08	0
CF .	АР	ı	mol H+ -eq	2,49E-01	3,48E-03	2,15E-04	1,31E-03	0
<del>**</del>	EP-FreshWater		kg P -eq	2,75E-03	6,69E-06	3,72E-07	7,99E-04	0
<del>**</del>	EP-Marine		kg N -eq	5,39E-02	1,03E-03	7,31E-05	1,34E-03	0
**	EP-Terrestial		mol N -eq	5,36E-01	1,14E-02	7,69E-04	4,40E-03	0
	POCP	kg	NMVOC -eq	1,81E-01	3,50E-03	2,22E-04	7,47E-04	0
	ADP-minerals&metals <sup>1</sup>		kg Sb -eq	5,38E-03	2,31E-05	1,10E-06	6,77E-06	0
	ADP-fossil <sup>1</sup>		МЈ		1,29E+01	6,36E-01	1,21E+00	0
<u>%</u>	WDP <sup>1</sup>		$m^3$	9,59E+03	1,23E+01	8,33E-01	2,57E+00	0
	Indicator	Unit	B4	C1	C2	C3	C4	D
E							C-	_
	GWP-total	kg CO <sub>2</sub> -eq	0	0	2,42E-01	2,47E+01	5,32E-02	-2,75E+00
	GWP-total GWP-fossil	kg CO <sub>2</sub> -eq	0	0				
_					2,42E-01	2,47E+01	5,32E-02	-2,75E+00
	GWP-fossil	kg CO <sub>2</sub> -eq	0	0	2,42E-01 2,42E-01	2,47E+01 2,47E+01	5,32E-02 5,31E-02	-2,75E+00 -2,70E+00
	GWP-fossil GWP-biogenic	kg CO <sub>2</sub> -eq	0 0	0	2,42E-01 2,42E-01 9,85E-05	2,47E+01 2,47E+01 8,08E-04	5,32E-02 5,31E-02 3,64E-05	-2,75E+00 -2,70E+00 -3,50E-03
	GWP-fossil GWP-biogenic GWP-luluc	kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq	0 0 0	0 0	2,42E-01 2,42E-01 9,85E-05 8,44E-05	2,47E+01 2,47E+01 8,08E-04 6,86E-05	5,32E-02 5,31E-02 3,64E-05 1,37E-05	-2,75E+00 -2,70E+00 -3,50E-03 -4,64E-02
	GWP-fossil GWP-biogenic GWP-luluc ODP	kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CFC11 -e	0 0 0	0 0 0	2,42E-01 2,42E-01 9,85E-05 8,44E-05 5,51E-08	2,47E+01 2,47E+01 8,08E-04 6,86E-05 4,73E-08	5,32E-02 5,31E-02 3,64E-05 1,37E-05 1,33E-08	-2,75E+00 -2,70E+00 -3,50E-03 -4,64E-02 -9,68E-02
	GWP-fossil GWP-biogenic GWP-luluc ODP AP	kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CFC11 -ec mol H+ -eq	0 0 0 0	0 0 0 0	2,42E-01 2,42E-01 9,85E-05 8,44E-05 5,51E-08 9,87E-04	2,47E+01 2,47E+01 8,08E-04 6,86E-05 4,73E-08 7,40E-03	5,32E-02 5,31E-02 3,64E-05 1,37E-05 1,33E-08 3,20E-04	-2,75E+00 -2,70E+00 -3,50E-03 -4,64E-02 -9,68E-02 -1,78E-02
	GWP-fossil GWP-biogenic GWP-luluc ODP AP EP-FreshWater	kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CFC11 -ec mol H+ -eq kg P -eq	0 0 0 0 0 0	0 0 0 0	2,42E-01 2,42E-01 9,85E-05 8,44E-05 5,51E-08 9,87E-04 1,90E-06	2,47E+01 2,47E+01 8,08E-04 6,86E-05 4,73E-08 7,40E-03 4,13E-06	5,32E-02 5,31E-02 3,64E-05 1,37E-05 1,33E-08 3,20E-04 5,86E-07	-2,75E+00 -2,70E+00 -3,50E-03 -4,64E-02 -9,68E-02 -1,78E-02 -2,02E-04
	GWP-fossil GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine	kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CFC11 -e mol H+ -eq kg P -eq kg N -eq	0 0 0 0 0 0 0	0 0 0 0 0 0	2,42E-01 2,42E-01 9,85E-05 8,44E-05 5,51E-08 9,87E-04 1,90E-06 2,93E-04	2,47E+01 2,47E+01 8,08E-04 6,86E-05 4,73E-08 7,40E-03 4,13E-06 3,89E-03	5,32E-02 5,31E-02 3,64E-05 1,37E-05 1,33E-08 3,20E-04 5,86E-07 1,12E-04	-2,75E+00 -2,70E+00 -3,50E-03 -4,64E-02 -9,68E-02 -1,78E-02 -2,02E-04 -4,99E-03
	GWP-fossil GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine EP-Terrestial	kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CFC11 -ec mol H+ -eq kg P -eq kg N -eq mol N -eq	0 0 0 0 0 0 0	0 0 0 0 0 0	2,42E-01 2,42E-01 9,85E-05 8,44E-05 5,51E-08 9,87E-04 1,90E-06 2,93E-04 3,24E-03	2,47E+01 2,47E+01 8,08E-04 6,86E-05 4,73E-08 7,40E-03 4,13E-06 3,89E-03 3,88E-02	5,32E-02 5,31E-02 3,64E-05 1,37E-05 1,33E-08 3,20E-04 5,86E-07 1,12E-04 1,24E-03	-2,75E+00 -2,70E+00 -3,50E-03 -4,64E-02 -9,68E-02 -1,78E-02 -2,02E-04 -4,99E-03 -5,31E-02
	GWP-fossil GWP-biogenic GWP-luluc ODP AP EP-FreshWater EP-Marine EP-Terrestial POCP	kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CO <sub>2</sub> -eq kg CFC11 -ec mol H+ -eq kg P -eq kg N -eq mol N -eq kg NMVOC -ec	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0	2,42E-01 2,42E-01 9,85E-05 8,44E-05 5,51E-08 9,87E-04 1,90E-06 2,93E-04 3,24E-03 9,92E-04	2,47E+01 2,47E+01 8,08E-04 6,86E-05 4,73E-08 7,40E-03 4,13E-06 3,89E-03 3,88E-02 9,27E-03	5,32E-02 5,31E-02 3,64E-05 1,37E-05 1,33E-08 3,20E-04 5,86E-07 1,12E-04 1,24E-03 3,55E-04	-2,75E+00 -2,70E+00 -3,50E-03 -4,64E-02 -9,68E-02 -1,78E-02 -2,02E-04 -4,99E-03 -5,31E-02 -1,75E-02

GWP-total = Global Warming Potential total; GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment: EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption

#### Remarks to environmental impacts

<sup>&</sup>quot;Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009"

<sup>\*</sup>INA Indicator Not Assessed

<sup>1.</sup> The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator



Additional e	nvironmental impa	ct indicators						
	Indicator	Unit		A1-A3	A4	A5	B2	В3
	PM	Disease incidence		3,14E-06	6,14E-08	3,18E-09	1,85E-08	0
	IRP <sup>2</sup>	kgBq U235 -eq		3,75E+00	5,62E-02	2,72E-03	4,37E-03	0
	ETP-fw <sup>1</sup>	CTUe		1,56E+03	9,47E+00	8,44E-01	1,03E+01	0
46.* **** <u>\$</u>	HTP-c <sup>1</sup>	CTUh		9,75E-08	0,00E+00	2,50E-11	2,60E-10	0
48° E	HTP-nc <sup>1</sup>	CTUh	CTUh		1,02E-08	1,06E-09	6,02E-09	0
	SQP <sup>1</sup>	dimensionless		3,38E+02	8,86E+00	4,39E-01	6,31E+00	0
	Indicator	Unit	B4	C1	C2	C3	C4	D
	PM	Disease incidence	0	0	1,74E-08	3,44E-08	5,53E-09	-7,77E-07
(to ()	IRP <sup>2</sup>	kgBq U235 -eq	0	0	1,59E-02	6,73E-03	4,11E-03	-1,16E-01
	ETP-fw <sup>1</sup>	CTUe	0	0	2,68E+00	3,02E+01	7,69E-01	-1,80E+02
44. *** <u>B</u>	HTP-c <sup>1</sup>	CTUh	0	0	0,00E+00	1,08E-09	3,10E-11	-8,48E-09
48 <u>a</u>	HTP-nc <sup>1</sup>	CTUh	0	0	2,90E-09	3,78E-08	9,66E-10	4,41E-08
Α.								

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality (dimensionless)

2,51E+00

4,93E-01

2,26E+00

-1,28E+02

dimensionless

SQP<sup>1</sup>

<sup>&</sup>quot;Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009"

<sup>\*</sup>INA Indicator Not Assessed

<sup>1.</sup> The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

<sup>2.</sup> This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.



Resource use		_						_
	Indicator		Unit	A1-A3	A4	A5	B2	В3
	PERE		MJ	8,89E+01	1,81E-01	1,06E-02	1,69E+00	0
	PERM		MJ	2,26E+01	0,00E+00	-2,26E+01	0,00E+00	0
Ţ,	PERT		MJ	1,12E+02	1,81E-01	-2,26E+01	1,69E+00	0
	PENRE		MJ	4,71E+02	1,29E+01	6,36E-01	1,43E+00	0
	PENRM		MJ	3,18E+02	0,00E+00	-1,53E+00	0,00E+00	0
<b>IA</b>	PENRT		MJ	7,90E+02	1,29E+01	-8,93E-01	1,43E+00	0
<u></u>	SM		kg	8,36E+00	0,00E+00	0,00E+00	0,00E+00	0
2	RSF		MJ	2,14E+00	6,49E-03	3,49E-04	1,80E-03	0
	NRSF		МЈ		2,32E-02	1,43E-03	2,55E-03	0
(%)	FW		m <sup>3</sup>	8,52E-01	1,35E-03	3,01E-04	1,63E-02	0
	ndicator	Unit	B4	C1	C2	C3	C4	D
	<b>ndicator</b> PERE	<b>Unit</b> MJ	B4 0	C1 0	C2 5,14E-02	C3 1,24E-01	C4 2,42E-02	D -1,18E+02
Ö	PERE	MJ	0	0	5,14E-02	1,24E-01	2,42E-02	-1,18E+02
	PERE PERM	MJ	0	0	5,14E-02 0,00E+00	1,24E-01 0,00E+00	2,42E-02 0,00E+00	-1,18E+02 0,00E+00
.€ <b>1</b> .⊊.	PERE PERM PERT	M1 M1	0 0 0	0 0	5,14E-02 0,00E+00 5,14E-02	1,24E-01 0,00E+00 1,24E-01	2,42E-02 0,00E+00 2,42E-02	-1,18E+02 0,00E+00 -1,18E+02
<b>1 1 1 1 1 1 1 1 1 1</b>	PERE PERM PERT PENRE	MJ MJ	0 0 0 0	0 0 0	5,14E-02 0,00E+00 5,14E-02 3,64E+00	1,24E-01 0,00E+00 1,24E-01 3,83E+00	2,42E-02 0,00E+00 2,42E-02 9,99E-01	-1,18E+02 0,00E+00 -1,18E+02 -3,05E+01
	PERE PERM PERT PENRE PENRM	MI MI MI MI	0 0 0 0 0 0	0 0 0 0	5,14E-02 0,00E+00 5,14E-02 3,64E+00 0,00E+00	1,24E-01 0,00E+00 1,24E-01 3,83E+00 -3,17E+02	2,42E-02 0,00E+00 2,42E-02 9,99E-01 0,00E+00	-1,18E+02 0,00E+00 -1,18E+02 -3,05E+01 0,00E+00
	PERE PERM PERT PENRE PENRM PENRT	MJ MJ MJ MJ	0 0 0 0 0 0 0	0 0 0 0 0	5,14E-02 0,00E+00 5,14E-02 3,64E+00 0,00E+00 3,64E+00	1,24E-01 0,00E+00 1,24E-01 3,83E+00 -3,17E+02 -3,13E+02	2,42E-02 0,00E+00 2,42E-02 9,99E-01 0,00E+00 9,99E-01	-1,18E+02 0,00E+00 -1,18E+02 -3,05E+01 0,00E+00 -3,05E+01
	PERE PERM PERT PENRE PENRM PENRT SM	MJ MJ MJ MJ MJ kg	0 0 0 0 0 0	0 0 0 0 0	5,14E-02 0,00E+00 5,14E-02 3,64E+00 0,00E+00 3,64E+00 0,00E+00	1,24E-01 0,00E+00 1,24E-01 3,83E+00 -3,17E+02 -3,13E+02 0,00E+00	2,42E-02 0,00E+00 2,42E-02 9,99E-01 0,00E+00 9,99E-01 0,00E+00	-1,18E+02 0,00E+00 -1,18E+02 -3,05E+01 0,00E+00 -3,05E+01 0,00E+00

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources; SM = Use of secondary materials; REF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed



End of life - Waste									
	Indicator	ndicator		Unit		A4	A5	B2	В3
	HWD		k	g	3,50E-01	6,56E-04	0,00E+00	1,61E-02	0
Ō	NHWD		kg		1,15E+01	6,14E-01	2,80E+00	4,64E-02	0
- -	RWD		kg		2,91E-03	8,77E-05	0,00E+00	4,78E-06	0
In	dicator		Unit	B4	C1	C2	C3	C4	D
Ā	HWD		kg	0	0	1,86E-04	0,00E+00	3,60E+00	-8,01E-03
Ū	NHWD		kg	0	0	1,74E-01	0,00E+00	1,63E-01	-1,01E+00
<b>3</b>	RWD		kg	0	0	2,48E-05	0,00E+00	6,13E-06	-9,57E-05

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

End of life - Output flow								
Ind	icator	Un	Unit		A4	A5	B2	В3
<b>®</b>	CRU	kç	kg		0,00E+00	0,00E+00	0,00E+00	0
&▷	MFR	kç	J	1,20E+00	0,00E+00	2,58E+00	0,00E+00	0
DF	MER	kç	J	0,00E+00	0,00E+00	1,93E-01	0,00E+00	0
50	EEE	М	J	0,00E+00	0,00E+00	1,58E-01	0,00E+00	0
D	EET	М	J	0,00E+00	0,00E+00	2,39E+00	0,00E+00	0
Indicato	or	Unit	B4	C1	C2	C3	C4	D
<b>∅&gt;</b>	CRU	kg	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
\$>	MFR	kg	0	0	0,00E+00	1,36E+00	0,00E+00	0,00E+00
D7	MER	kg	0	0	0,00E+00	1,45E+01	0,00E+00	0,00E+00
50	EEE	МЈ	0	0	0,00E+00	1,53E+01	0,00E+00	0,00E+00
D	EET	MJ	0	0	0,00E+00	2,31E+02	0,00E+00	0,00E+00

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

Biogenic Carbon Content		
Indicator	Unit	At the factory gate
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in accompanying packaging	kg C	1,28E+00

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2



# **Additional requirements**

## Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Data source	Amount	Unit
Electricity, Sweden (kWh)	ecoinvent 3.6	54.94	a CO2-ea/kWh

## **Dangerous substances**

The product contains no substances given by the REACH Candidate list.

#### **Indoor environment**

## **Additional Environmental Information**

## **Key Environmental Indicators**

Key environmental indicators	Unit	A1-A3	A4	A1-C4	A1-D
GWPtotal	kg CO <sub>2</sub> -eq	52,54	0,85	83,41	80,66
Total energy consumption	MJ	562,86	13,07	588,43	434,10
Amount of recycled materials	%	48.22			

Additional environmental impact indicators required in NPCR Part A for construction products							
Indicator	Unit	Unit		A4	A5	B2	В3
GWPIOBC	kg CO <sub>2</sub> -eq	kg CO <sub>2</sub> -eq		8,53E-01	0,00E+00	6,13E-01	0
Indicator	Unit	B4	C1	C2	C3	C4	D
GWPIOBC	kg CO <sub>2</sub> -eq	0	0	2,42E-01	2,46E+01	5,79E-02	-3,41E+00

GWP-IOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

## **Variants and Options**

Key environmental indicators (A1-A3) for variants of this EPD					
Variants	Weight (kg)	GWPtotal (kg CO <sub>2</sub> - eq)	Total energy consumption (MJ)	Amount of recycled materials (%)	
Savo Soul without armrest & neckrest upholstered back and seat with polyester fabric	17,95	58,05	643,63	45,93	
Savo Soul without armrest $\&$ neckrest upholstered back and seat with wool fabric	17,95	112,84	889,49	45,83	
Savo Soul without armrest & neckrest, mesh back and excl. fabric on seat	16,55	44,99	456,17	51,50	
Savo Soul without armrest & neckrest, mesh back and wool fabric on seat	16,55	71,80	601,48	50,26	
Savo Soul without armrest & neckrest, mesh back and polyester fabric on seat	16,55	47,44	492,07	50,31	

Key environmental indicators (A1-A3) for options for this EPD						
Options	Weight (kg)	GWPtotal (kg CO <sub>2</sub> -eq)	Total energy consumption (MJ)	Amount of recycled materials (%)		
Armrest 0030 4D	2,35	6,90	126,41	80,85		
Armrest 2D model YoYo	0,73	7,07	114,39	22,34		



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