# Life Cycle Analyses

RDVDISPLAY





# Summary



**01** Methodology



02 Results



# Methodology

## **Environmental Impact Assessment**

### **Functional unit**

The functional unit is a quantified performance of a product system for use as a reference unit. One of the primary purposes of a functional unit is to provide a reference to which the input and output data are normalized (in a mathematical sense). Therefore, the functional unit shall be clearly defined and measurable.

## **Impact Indicator**

The impact is measured through the "IPCC 2021 GWP100" method

# Electricity impact calculation method

Following guidelines from the GHG Protocol, the impact of electricity is calculated using the location-based approach. This means that the emission factors used represent the average annual carbon intensity of the power grid in the country the processes take place in.

## Life Cycle Analyses

Cradle to grave





# **Emission Factor Inventory**

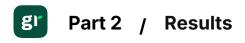
Nu m	Emission Factor	Source	Value	Unit
1	Aluminium, primary, ingot   Ordinary transforming activity	ECOINVENT 3.10	7.61	kg
2	Acrylonitrile-butadiene-styrene copolymer   Ordinary transforming activity	ECOINVENT 3.10	4.53	kg
3	Electricity   Total (Scope 2 & 3)   People's Republic of China	IEA 2023	0.72	kWh
4	Freight   Boat   From CN to FR	WELOW EXPERTS 1.0	0.25	kg
5	Waste aluminium   Ordinary transforming activity	ECOINVENT 3.10	0.03	kg
6	Residues, MSWI, waste plastic, consumer electronics   Ordinary transforming activity	ECOINVENT 3.10	0.36	kg



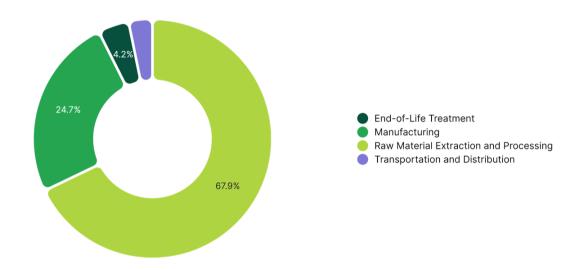




# Results



# Climate Change



Step	Impact (kg CO <sub>2</sub> eq)	Percentage (%)
Raw Material Extraction and Processing	1.45	67.88 %
Manufacturing	0.53	24.72 %
End-of-Life Treatment	0.09	4.19 %
Transportation and Distribution	0.07	3.22 %

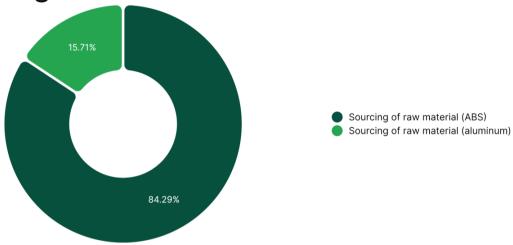
TOTAL 2.14 100.00
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Climate Change - Raw Material Extraction and





Activity	Emission Factor Num	Quantity	Unité (kį	Impact g CO <sub>2</sub> eq)	Percentage (%)
Sourcing of raw material (ABS)	2	0.27	kg	1.23	84.29 %
Sourcing of raw material (aluminum)	1	0.03	kg	0.23	15.71 %

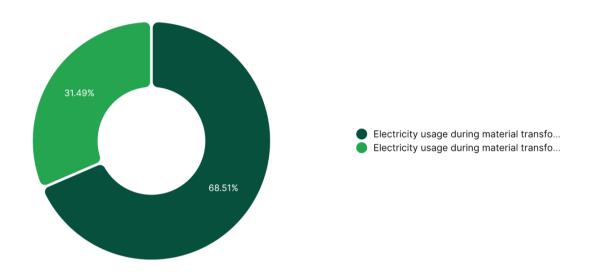
TOTAL		1.45	100.00 %







# Climate Change - Manufacturing



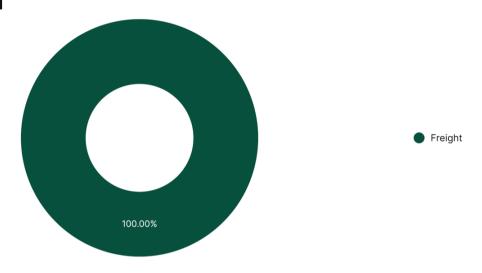
Activity	Emission Factor Num	Quantity	Unité	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Electricity usage during material transformation (ABS)	3	0.5	kWh	362.73	68.51 %
Electricity usage during material transformation (aluminum)	3	0.23	kWh	166.7	31.49 %

TOTAL		529.43	100.00 %





# Climate Change - Transportation and Distribution



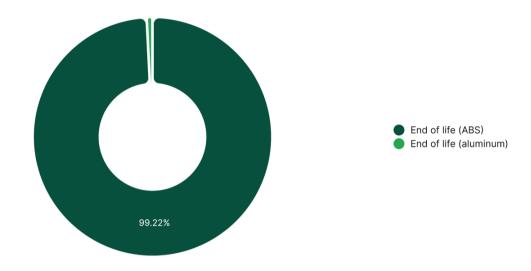
Activity	Emission Factor Num	Quantity	Unité	Impact (g CO <sub>2</sub> eq)	Percentage (%)
Freight	4	0.27	kg	68.87	100.00 %

TOTAL 68.87 100.00 %





# Climate Change - End-of-Life Treatment



Activity	Emission Factor Num	Quantity	Unité	Impact (g CO <sub>2</sub> eq)	Percentage (%)
End of life (ABS)	6	0.25	kg	88.95	99.22 %
End of life (aluminum)	5	0.03	kg	0.7	0.78 %

TOTAL	89.65	100.00 %





