

# Product Carbon Footprint Report

Product

CNC Case Study 2

Functional Unit

Description

## System Boundary Definition

### Cradle-to-Gate (Stage A)

- A1 Raw Material Supply
- A2 Transport to Manufacturer
- A3 Manufacturing & Waste

### Cradle-to-Grave (Stages B & C)

- B1-B7 Use Phase
- C1-C4 End of Life

## Total Emissions by Part (kg CO<sub>2</sub>e)

Part	Emissions (kg CO <sub>2</sub> e)	Percentage
Only Part	77.35	66.1 %
Another Part	39.74	33.9 %

# Part: Only Part

Total Emissions (kg CO<sub>2</sub>e)

77.35

## Lifecycle Breakdown (A/B/C)

A1-A3 (Cradle-to-Gate)	73.33
B Stage (Use Phase)	0.00
C Stage (End of Life)	0.27

## Materials

Material	Weight (kg)
Aluminum	1.6

## Upstream Transport

Class	Vehicle	Distance (km)	Mass (kg)
HGV Articulated ( >3500kg to 33000kg) (50% Laden)	HGV (Diesel)	240	0

## Machining

Brand	Machine	Operating Time (hr)
Mazak	INTEGREX i-100S NEO	0.33
Mazak	INTEGREX i-100S NEO	0.25
Mazak	VORTEX i-630V/6S	0.17

## Part: Another Part

Total Emissions (kg CO<sub>2</sub>e)

39.74

### Lifecycle Breakdown (A/B/C)

A1-A3 (Cradle-to-Gate)	21.88
B Stage (Use Phase)	16.00
C Stage (End of Life)	0.00

### Materials

Material	Weight (kg)
Cement	3

### Upstream Transport

Class	Vehicle	Distance (km)	Mass (kg)
HGV Rigid (> 3500kg to 7500kg) (0% Laden)	HGV Refrigerated (Diesel)	100	2

### Machining

Brand	Machine	Operating Time (hr)
Amada	WINSTAR-SP	1.2