

# Technical Life Cycle Assessment Report

## Executive Summary

This technical LCA report presents a comprehensive analysis of 1 material scenario(s) using cradle\_to\_gate methodology. The total carbon footprint is 15357.8 kg CO<sub>2</sub>-eq with an intensity of 15.36 kg CO<sub>2</sub>-eq per kg of material.

## Methodology

Analysis Type: Cradle To Gate Study Type: Internal Decision Support Standards: ISO 14040/14044  
Scenarios Analyzed: 1

## Results

Carbon Footprint Breakdown: • Production: 9792.0 kg CO<sub>2</sub>-eq • Energy: 5559.6 kg CO<sub>2</sub>-eq • Transport: 6.2 kg CO<sub>2</sub>-eq • End-of-Life: 0.0 kg CO<sub>2</sub>-eq  
Circularity Metrics: • Circularity Index: 0.488 • Grade: C

## Environmental Impact Assessment

Materials Analyzed: Aluminum Total Mass: 1000.0 kg Average Carbon Intensity: 15.36 kg CO<sub>2</sub>-eq/kg  
Environmental Category: Climate Change (GWP 100-year)

## Recommendations