

# Environmental Profile

This LCA is calculated according to: ISO 14044, ISO 14040 and EN 15804

Ecochain v3.5.64



Product: 3003834 - PE Eccentric Reducer 110x90  
 Unit: 1 piece  
 Manufacturer: Wavin - IT - SM Maddalena

LCA standard: EN15804+A2 (2019)  
 Standard database: Worldwide - Ecoinvent v 3.6 Cut-Off  
 Externally verified: Yes  
 Issue date: 24-11-2022  
 End of validity: 24-11-2027  
 Verifier: Martijn van Hövell - SGS Search



This LCA was evaluated according to EN15804+A2. It was concluded that the LCA complies with this standard.

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin - IT - SM Maddalena (2020). (☑ = module declared, MND = module not declared).

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
☑	☑	☑	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	☑	☑	☑	☑

## Product stage

A1 Raw material supply A2 Transport A3 Manufacturing

## Construction process stage

A4 Transport gate to site  
 A5 Assembly / Construction installation process

## Use stage

B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment  
 B6 Operational energy use B7 Operational water use

## End-of-Life stage

C1 De-construction demolition C2 Transport C3 Waste processing  
 C4 Disposal

## Benefits and loads beyond the system boundaries

D Reuse- Recovery- Recycling- potential

## Environmental impacts and parameters

**GWP-total** = EF Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF Climate Change - Land use and LU change [kg CO2 eq]; **ODP** = EF Ozone depletion [kg CFC11 eq]; **AP** = EF Acidification [mol H+ eq]; **EP-fw** = EF Eutrophication, freshwater [kg P eq]; **EP-m** = EF Eutrophication, marine [kg N eq]; **EP-T** = EF Eutrophication, terrestrial [mol N eq]; **POCP** = EF Photochemical ozone formation [kg NMVOC eq]; **ADP-mm** = EF Resource use, minerals and metals [kg Sb eq]; **ADP-f** = EF Resource use, fossils [MJ]; **WDP** = EF Water use [m3 depriv.]; **PM** = EF Particulate matter [disease inc.]; **IR** = EF Ionising radiation [kBq U-235 eq]; **ETP-fw** = EF Ecotoxicity, freshwater [CTUe]; **HTP-c** = EF Human toxicity, cancer [CTUh]; **HTP-nc** = EF Human toxicity, non-cancer [CTUh]; **SQP** = EF Land use [Pt]; **PERE** = Use of renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; **PERM** = Use of renewable primary energy resources used as raw materials [MJ]; **PERT** = Total use of renewable primary energy resources [MJ]; **PENRE** = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; **PENRM** = Use of non-renewable primary energy resources used as raw materials [MJ]; **PENRT** = Total use of non-renewable primary energy resources [MJ]; **PET** = Total energy [MJ]; **SM** = Use of secondary material [kg]; **RSF** = Use of renewable secondary fuels [MJ]; **NRSF** = Use of non-renewable secondary fuels [MJ]; **FW** = Use of net fresh water [m3]; **HWD** = Hazardous waste disposed [kg]; **NHWD** = Non-hazardous waste disposed [kg]; **RWD** = Radioactive waste disposed [kg]; **CRU** = Components for re-use [kg]; **MFR** = Materials for recycling [kg]; **MER** = Materials for energy recovery [kg]; **EE** = Exported energy [MJ]; **EET** = Exported energy thermic [MJ]; **EEE** = Exported energy electric [MJ]

## Statement of Confidentiality

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# Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.74E-1	2.37E-2	1.40E-2	2.12E-1	2.45E-3	1.15E-1	1.36E-3	-1.21E-1	2.10E-1
GWP-f	kg CO2 eq	2.03E-1	2.37E-2	1.19E-2	2.38E-1	2.45E-3	8.08E-2	1.36E-3	-1.33E-1	1.90E-1
GWP-b	kg CO2 eq	-2.83E-2	1.34E-5	1.01E-3	-2.73E-2	1.49E-6	3.46E-2	1.02E-6	1.16E-2	1.89E-2
GWP-luluc	kg CO2 eq	1.40E-4	8.71E-6	1.01E-3	1.16E-3	8.66E-7	1.41E-5	1.95E-8	-1.25E-4	1.05E-3
ODP	kg CFC11 eq	1.23E-8	5.43E-9	1.20E-9	1.89E-8	5.64E-10	1.99E-9	2.89E-11	-7.20E-9	1.43E-8
AP	mol H+ eq	7.94E-4	1.66E-4	4.82E-5	1.01E-3	1.39E-5	8.22E-5	6.90E-7	-4.21E-4	6.85E-4
EP-fw	kg P eq	4.08E-6	1.90E-7	1.86E-7	4.46E-6	2.01E-8	4.12E-7	8.96E-10	-2.75E-6	2.14E-6
EP-m	kg N eq	1.46E-4	5.54E-5	8.14E-6	2.10E-4	4.99E-6	2.45E-5	4.88E-7	-8.20E-5	1.58E-4
EP-T	mol N eq	1.62E-3	6.12E-4	9.14E-5	2.32E-3	5.50E-5	2.69E-4	2.80E-6	-9.23E-4	1.72E-3
POCP	kg NMVOC eq	7.02E-4	1.72E-4	2.84E-5	9.02E-4	1.57E-5	8.46E-5	1.10E-6	-3.88E-4	6.15E-4
ADP-mm	kg Sb eq	2.76E-6	5.92E-7	2.91E-7	3.64E-6	6.33E-8	3.26E-7	6.93E-10	-9.37E-7	3.10E-6
ADP-f	MJ	6.86E+0	3.61E-1	1.57E-1	7.38E+0	3.76E-2	2.52E-1	2.11E-3	-3.84E+0	3.83E+0
WDP	m3 depriv.	1.48E-1	1.08E-3	5.56E-2	2.05E-1	1.15E-4	4.79E-3	9.68E-6	-8.96E-2	1.20E-1
PM	disease inc.	8.28E-9	2.07E-9	4.82E-10	1.08E-8	2.21E-10	1.34E-9	1.45E-11	-4.34E-9	8.07E-9
IR	kBq U-235 eq	6.48E-3	1.58E-3	1.47E-4	8.21E-3	1.64E-4	7.78E-4	9.85E-6	-3.14E-3	6.02E-3
ETP-fw	CTUe	2.84E+0	2.91E-1	2.48E-1	3.38E+0	3.05E-2	2.94E-1	1.86E-3	-1.56E+0	2.15E+0
HTP-c	CTUh	7.22E-11	1.06E-11	1.32E-11	9.60E-11	1.09E-12	3.42E-11	5.13E-14	-4.29E-11	8.85E-11
HTP-nc	CTUh	1.48E-9	3.43E-10	2.74E-10	2.10E-9	3.64E-11	4.28E-10	1.18E-12	-8.93E-10	1.67E-9
SQP	Pt	3.24E+0	2.98E-1	2.86E-2	3.57E+0	3.21E-2	1.98E-1	5.42E-3	-4.34E+0	-5.35E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.64E-1	5.06E-3	5.44E-1	1.11E+0	5.39E-4	1.22E-2	8.36E-5	-7.53E-1	3.72E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.64E-1	5.06E-3	5.44E-1	1.11E+0	5.39E-4	1.22E-2	8.36E-5	-7.53E-1	3.72E-1
PENRE	MJ	7.36E+0	3.84E-1	1.71E-1	7.91E+0	3.99E-2	2.68E-1	2.24E-3	-4.14E+0	4.08E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	7.36E+0	3.84E-1	1.71E-1	7.91E+0	3.99E-2	2.68E-1	2.24E-3	-4.14E+0	4.08E+0
PET	MJ	7.92E+0	3.89E-1	7.15E-1	9.03E+0	4.04E-2	2.80E-1	2.33E-3	-4.90E+0	4.45E+0
SM	kg	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m3	2.35E-3	3.99E-5	1.32E-3	3.71E-3	4.25E-6	1.43E-4	2.61E-6	-1.57E-3	2.29E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.46E-6	8.99E-7	1.53E-7	2.51E-6	9.61E-8	4.23E-7	2.54E-9	-1.39E-6	1.64E-6
NHWD	kg	1.08E-2	2.15E-2	1.49E-3	3.38E-2	2.33E-3	1.23E-2	9.31E-3	-5.08E-3	5.27E-2
RWD	kg	7.08E-6	2.46E-6	1.63E-7	9.70E-6	2.56E-7	9.96E-7	1.38E-8	-2.98E-6	7.98E-6
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0	0



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