

# Environmental Profile

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

Ecochain v3.5.64



Product: 3003821 - PE Eccentric Reducer 50x40  
 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 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	4.81E-2	7.03E-3	4.05E-3	5.91E-2	7.11E-4	4.12E-2	3.94E-4	-3.46E-2	6.68E-2
GWP-f	kg CO2 eq	6.24E-2	7.02E-3	3.47E-3	7.29E-2	7.11E-4	2.37E-2	3.94E-4	-4.09E-2	5.68E-2
GWP-b	kg CO2 eq	-1.44E-2	3.99E-6	2.93E-4	-1.41E-2	4.32E-7	1.75E-2	2.96E-7	6.27E-3	9.70E-3
GWP-luluc	kg CO2 eq	6.01E-5	2.58E-6	2.93E-4	3.55E-4	2.52E-7	4.20E-6	5.65E-9	-5.96E-5	3.00E-4
ODP	kg CFC11 eq	4.02E-9	1.61E-9	3.48E-10	5.98E-9	1.64E-10	6.24E-10	8.40E-12	-2.40E-9	4.38E-9
AP	mol H+ eq	2.51E-4	4.91E-5	1.40E-5	3.14E-4	4.05E-6	2.55E-5	2.00E-7	-1.41E-4	2.03E-4
EP-fw	kg P eq	1.41E-6	5.63E-8	5.39E-8	1.52E-6	5.85E-9	1.23E-7	2.60E-10	-1.09E-6	5.60E-7
EP-m	kg N eq	4.90E-5	1.64E-5	2.36E-6	6.77E-5	1.45E-6	7.73E-6	1.42E-7	-2.84E-5	4.86E-5
EP-T	mol N eq	5.34E-4	1.81E-4	2.65E-5	7.41E-4	1.60E-5	8.50E-5	8.14E-7	-3.22E-4	5.21E-4
POCP	kg NMVOC eq	2.21E-4	5.08E-5	8.25E-6	2.80E-4	4.56E-6	2.66E-5	3.19E-7	-1.28E-4	1.84E-4
ADP-mm	kg Sb eq	8.53E-7	1.75E-7	8.44E-8	1.11E-6	1.84E-8	1.01E-7	2.01E-10	-3.05E-7	9.27E-7
ADP-f	MJ	2.05E+0	1.07E-1	4.56E-2	2.20E+0	1.09E-2	7.62E-2	6.13E-4	-1.16E+0	1.13E+0
WDP	m3 depriv.	4.42E-2	3.21E-4	1.61E-2	6.07E-2	3.35E-5	1.41E-3	2.81E-6	-3.04E-2	3.17E-2
PM	disease inc.	2.75E-9	6.14E-10	1.40E-10	3.51E-9	6.42E-11	4.13E-10	4.21E-12	-1.64E-9	2.35E-9
IR	kBq U-235 eq	2.05E-3	4.67E-4	4.26E-5	2.56E-3	4.77E-5	2.40E-4	2.86E-6	-1.13E-3	1.72E-3
ETP-fw	CTUe	1.21E+0	8.61E-2	7.20E-2	1.37E+0	8.86E-3	9.10E-2	5.41E-4	-6.96E-1	7.72E-1
HTP-c	CTUh	2.51E-11	3.14E-12	3.84E-12	3.20E-11	3.15E-13	1.04E-11	1.49E-14	-1.64E-11	2.65E-11
HTP-nc	CTUh	4.91E-10	1.02E-10	7.96E-11	6.72E-10	1.06E-11	1.30E-10	3.44E-13	-3.35E-10	4.77E-10
SQP	Pt	1.57E+0	8.84E-2	8.31E-3	1.67E+0	9.33E-3	5.95E-2	1.57E-3	-2.21E+0	-4.75E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.63E-1	1.50E-3	1.58E-1	4.22E-1	1.57E-4	3.63E-3	2.43E-5	-3.78E-1	4.76E-2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.63E-1	1.50E-3	1.58E-1	4.22E-1	1.57E-4	3.63E-3	2.43E-5	-3.78E-1	4.76E-2
PENRE	MJ	2.20E+0	1.14E-1	4.98E-2	2.36E+0	1.16E-2	8.12E-2	6.51E-4	-1.25E+0	1.21E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.20E+0	1.14E-1	4.98E-2	2.36E+0	1.16E-2	8.12E-2	6.51E-4	-1.25E+0	1.21E+0
PET	MJ	2.46E+0	1.15E-1	2.08E-1	2.78E+0	1.17E-2	8.48E-2	6.75E-4	-1.62E+0	1.25E+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	7.27E-4	1.18E-5	3.83E-4	1.12E-3	1.23E-6	4.28E-5	7.58E-7	-5.73E-4	5.95E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.17E-7	2.66E-7	4.43E-8	8.28E-7	2.79E-8	1.31E-7	7.36E-10	-4.72E-7	5.16E-7
NHWD	kg	3.93E-3	6.37E-3	4.32E-4	1.07E-2	6.76E-4	3.71E-3	2.70E-3	-1.94E-3	1.59E-2
RWD	kg	2.24E-6	7.28E-7	4.73E-8	3.02E-6	7.42E-8	3.09E-7	4.01E-9	-1.08E-6	2.32E-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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