Environmental Profile

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

Ecochain v4.3.1

Ecochain

Product:	10473 - TUBO ESG SN DN150X6M	LCA standard:	EN15804+A2 (2019)
Unit:	1 piece	Standard database:	Worldwide - Ecoinvent v 3.8 Cut-Off
Manufacturer:	Wavin - BR - Ribeirao das Neves	Externally verified:	No
		Export date:	03-02-2025

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin - BR - Ribeirao das Neves (2022). (☑ = 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	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 EN15804+A2 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF EN15804+A2 Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF EN15804+A2 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	A5	C4	Total
GWP-total	kg CO2 eq	2.369E+1	9.465E-1	2.368E-1	2.488E+1	0	1.210E+0	2.609E+1
GWP-f	kg CO2 eq	2.357E+1	9.373E-1	2.067E-1	2.471E+1	0	1.211E+0	2.593E+1
GWP-b	kg CO2 eq	1.065E-1	2.617E-3	2.992E-2	1.391E-1	0	5.511E-5	1.391E-1
GWP-luluc	kg CO2 eq	1.982E-2	6.629E-3	1.952E-4	2.664E-2	0	1.589E-5	2.666E-2
ODP	kg CFC11 eq	1.032E-5	1.985E-7	1.574E-8	1.053E-5	0	1.337E-8	1.055E-5
AP	mol H+ eq	1.111E-1	5.167E-3	1.487E-3	1.178E-1	0	5.513E-4	1.183E-1
EP-fw	kg P eq	7.988E-4	1.087E-5	1.002E-5	8.197E-4	0	2.785E-7	8.199E-4
EP-m	kg N eq	1.956E-2	1.832E-3	3.446E-4	2.174E-2	0	3.006E-4	2.204E-2
EP-T	mol N eq	2.080E-1	1.987E-2	2.936E-3	2.308E-1	0	2.477E-3	2.333E-1
POCP	kg NMVOC eq	6.808E-2	5.742E-3	9.222E-4	7.475E-2	0	9.882E-4	7.573E-2
ADP-mm	kg Sb eq	4.922E-4	3.196E-6	1.754E-5	5.129E-4	0	5.168E-8	5.130E-4
ADP-f	MJ	4.915E+2	1.410E+1	2.226E+0	5.078E+2	0	8.881E-1	5.087E+2
WDP	m3 depriv.	1.265E+1	5.542E-2	9.566E-2	1.280E+1	0	1.567E-2	1.281E+1
PM	disease inc.	9.836E-7	1.020E-7	2.042E-8	1.106E-6	0	1.358E-8	1.120E-6
IR	kBq U-235 eq	5.655E-1	5.904E-2	5.720E-3	6.303E-1	0	3.714E-3	6.340E-1
ETP-fw	CTUe	5.437E+2	1.255E+1	9.893E+0	5.662E+2	0	1.750E+1	5.837E+2
HTP-c	CTUh	1.638E-8	4.512E-10	8.397E-10	1.767E-8	0	2.688E-11	1.770E-8
HTP-nc	CTUh	4.216E-7	1.325E-8	1.229E-8	4.472E-7	0	3.704E-9	4.509E-7
SQP	Pt	6.207E+1	1.270E+1	2.656E+0	7.744E+1	0	3.019E+0	8.045E+1
Resource use	Unit	A1	A2	A3	A1-A3	A5	C4	Total
PERE	MJ	1.792E+1	2.428E-1	1.519E+1	3.335E+1	0	6.535E-3	3.336E+1
PERM	MJ	0	0	0	0	0	0	0
PERT	MJ	1.792E+1	2.428E-1	1.519E+1	3.335E+1	0	6.535E-3	3.336E+1
PENRE	MJ	5.280E+2	1.502E+1	2.380E+0	5.454E+2	0	9.433E-1	5.464E+2
PENRM	MJ	0	0	0	0	0	0	0
PENRT	MJ	5.280E+2	1.502E+1	2.380E+0	5.454E+2	0	9.433E-1	5.464E+2
PET	MJ	5.459E+2	1.526E+1	1.183E+0	5.624E+2	0	9.499E-1	5.633E+2
SM	kg	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0
FW	m3	3.227E-1	1.880E-3	2.556E-3	3.272E-1	0	3.855E-4	3.275E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	A5	C4	Total
HWD	kg	8.792E-4	3.684E-5	1.311E-5	9.292E-4	0	2.029E-6	9.312E-4
NHWD	kg	2.597E+0	9.768E-1	1.694E-1	3.743E+0	0	2.076E+0	5.819E+0
RWD	kg	4.837E-4	9.283E-5	6.753E-6	5.833E-4	0	5.976E-6	5.893E-4
CRU	kg	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0