Environmental Profile

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

Ecochain v3.5.71

Product:	3029595 - Hep20 Pb End Reduce Tee WT 22x15x22
Unit:	1 piece
Manufacturer:	Wavin - UK - Doncaster - Verified

Suitable for various professional plumbing jobs. Hep20 is packed with unique features that make push-fit plumbing fitting easier quicker and more secure for installers. No additional equipment or tools required when installing or demounting fittings compared to others where a solder or glue is required. Just push the pipework into the fitting to create a watertight seal. A wide range of plastic fittings, plumbing pipes and tubes are available. It is the only system with joint recognition and se

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	09-02-2023
End of validity:	09-02-2028
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 - UK - Doncaster - Verified (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 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

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	6.07E-1	9.51E-3	4.18E-2	6.58E-1	2.06E-3	8.73E-2	9.26E-4	-3.04E-1	4.44E-1
GWP-f	kg CO2 eq	6.12E-1	9.50E-3	3.89E-2	6.61E-1	2.05E-3	7.08E-2	9.26E-4	-3.09E-1	4.26E-1
GWP-b	kg CO2 eq	-5.30E-3	5.49E-6	2.96E-3	-2.33E-3	1.25E-6	1.65E-2	9.30E-7	4.53E-3	1.87E-2
GWP-luluc	kg CO2 eq	9.37E-5	3.45E-6	1.50E-5	1.12E-4	7.27E-7	9.19E-6	1.80E-8	-7.50E-5	4.71E-5
ODP	kg CFC11 eq	8.38E-9	2.18E-9	4.41E-9	1.50E-8	4.74E-10	1.74E-9	2.53E-11	-3.82E-9	1.34E-8
AP	mol H+ eq	2.87E-3	6.33E-5	9.54E-5	3.03E-3	1.17E-5	6.74E-5	6.27E-7	-1.19E-3	1.92E-3
EP-fw	kg P eq	7.62E-6	7.67E-8	2.77E-7	7.97E-6	1.69E-8	3.17E-7	8.29E-10	-3.49E-6	4.81E-6
EP-m	kg N eq	5.28E-4	2.14E-5	2.01E-5	5.70E-4	4.19E-6	2.07E-5	1.19E-6	-2.46E-4	3.50E-4
EP-T	mol N eq	5.36E-3	2.37E-4	1.95E-4	5.79E-3	4.62E-5	2.25E-4	2.50E-6	-2.49E-3	3.57E-3
POCP	kg NMVOC eq	2.01E-3	6.68E-5	6.32E-5	2.14E-3	1.32E-5	6.77E-5	9.08E-7	-9.33E-4	1.29E-3
ADP-mm	kg Sb eq	1.20E-5	2.39E-7	4.09E-7	1.26E-5	5.32E-8	2.59E-7	6.13E-10	-1.79E-6	1.11E-5
ADP-f	MJ	8.45E+0	1.45E-1	5.46E-1	9.14E+0	3.15E-2	1.96E-1	1.86E-3	-4.26E+0	5.11E+0
WDP	m3 depriv.	1.88E-1	4.38E-4	5.43E-3	1.94E-1	9.68E-5	4.18E-3	8.60E-6	-8.90E-2	1.09E-1
PM	disease inc.	2.49E-8	8.38E-10	7.00E-10	2.65E-8	1.86E-10	1.00E-9	1.27E-11	-1.14E-8	1.63E-8
IR	kBq U-235 eq	3.16E-3	6.34E-4	4.68E-4	4.26E-3	1.38E-4	6.12E-4	8.99E-6	-8.49E-4	4.17E-3
ETP-fw	CTUe	2.77E+0	1.17E-1	4.95E-1	3.38E+0	2.56E-2	3.29E-1	3.93E-3	-1.01E+0	2.73E+0
HTP-c	CTUh	1.37E-10	4.24E-12	2.05E-11	1.62E-10	9.12E-13	2.69E-11	4.93E-14	-3.02E-11	1.60E-10
HTP-nc	CTUh	2.18E-9	1.38E-10	4.33E-10	2.75E-9	3.05E-11	3.64E-10	1.58E-12	-7.24E-10	2.43E-9
SQP	Pt	1.37E+0	1.21E-1	6.93E-2	1.56E+0	2.70E-2	-2.83E-1	4.73E-3	-1.92E+0	-6.18E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.57E-1	2.05E-3	9.70E-1	1.23E+0	4.53E-4	-5.41E-2	8.60E-5	-3.67E-1	8.09E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.57E-1	2.05E-3	9.70E-1	1.23E+0	4.53E-4	-5.41E-2	8.60E-5	-3.67E-1	8.09E-1
PENRE	MJ	9.11E+0	1.54E-1	5.99E-1	9.86E+0	3.35E-2	2.09E-1	1.97E-3	-4.61E+0	5.50E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	9.11E+0	1.54E-1	5.99E-1	9.86E+0	3.35E-2	2.09E-1	1.97E-3	-4.61E+0	5.50E+0
PET	MJ	9.36E+0	1.56E-1	1.57E+0	1.11E+1	3.39E-2	1.55E-1	2.06E-3	-4.97E+0	6.31E+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	4.52E-3	1.61E-5	1.63E-4	4.70E-3	3.57E-6	1.38E-4	2.32E-6	-2.12E-3	2.72E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.27E-6	3.64E-7	5.73E-7	2.21E-6	8.07E-8	3.33E-7	2.22E-9	-6.96E-7	1.93E-6
NHWD	kg	2.91E-2	8.73E-3	2.67E-3	4.05E-2	1.96E-3	1.01E-2	8.11E-3	-3.48E-3	5.72E-2
RWD	kg	3.78E-6	9.87E-7	4.33E-7	5.20E-6	2.15E-7	7.78E-7	1.23E-8	-8.85E-7	5.32E-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

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777