Environmental Profile

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

Ecochain v3.5.71

Product:	3029616 - Hep20 Pb Elbow 90° WT 15
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	2.59E-1	4.04E-3	1.94E-2	2.82E-1	8.71E-4	4.35E-2	4.00E-4	-1.30E-1	1.96E-1
GWP-f	kg CO2 eq	2.63E-1	4.04E-3	1.81E-2	2.85E-1	8.70E-4	3.32E-2	4.00E-4	-1.32E-1	1.87E-1
GWP-b	kg CO2 eq	-3.94E-3	2.33E-6	1.22E-3	-2.71E-3	5.28E-7	1.03E-2	4.02E-7	1.43E-3	8.98E-3
GWP-luluc	kg CO2 eq	4.81E-5	1.47E-6	8.80E-6	5.84E-5	3.08E-7	3.14E-6	7.80E-9	-3.76E-5	2.43E-5
ODP	kg CFC11 eq	4.62E-9	9.26E-10	1.92E-9	7.47E-9	2.00E-10	7.21E-10	1.09E-11	-1.84E-9	6.56E-9
AP	mol H+ eq	1.23E-3	2.68E-5	5.25E-5	1.31E-3	4.96E-6	2.77E-5	2.71E-7	-5.02E-4	8.37E-4
EP-fw	kg P eq	3.44E-6	3.26E-8	1.46E-7	3.61E-6	7.16E-9	1.24E-7	3.58E-10	-1.57E-6	2.18E-6
EP-m	kg N eq	2.28E-4	9.08E-6	1.02E-5	2.47E-4	1.77E-6	8.61E-6	5.13E-7	-1.05E-4	1.53E-4
EP-T	mol N eq	2.31E-3	1.00E-4	1.03E-4	2.52E-3	1.95E-5	9.37E-5	1.08E-6	-1.06E-3	1.57E-3
POCP	kg NMVOC eq	8.63E-4	2.83E-5	3.29E-5	9.24E-4	5.59E-6	2.77E-5	3.92E-7	-3.94E-4	5.64E-4
ADP-mm	kg Sb eq	6.62E-6	1.02E-7	2.45E-7	6.97E-6	2.25E-8	1.06E-7	2.65E-10	-8.23E-7	6.27E-6
ADP-f	MJ	3.64E+0	6.16E-2	2.49E-1	3.95E+0	1.34E-2	7.91E-2	8.04E-4	-1.80E+0	2.24E+0
WDP	m3 depriv.	8.25E-2	1.86E-4	2.76E-3	8.55E-2	4.10E-5	1.73E-3	3.72E-6	-3.91E-2	4.81E-2
PM	disease inc.	1.08E-8	3.56E-10	3.85E-10	1.16E-8	7.85E-11	3.98E-10	5.48E-12	-4.84E-9	7.20E-9
IR	kBq U-235 eq	1.73E-3	2.69E-4	2.28E-4	2.23E-3	5.84E-5	2.49E-4	3.88E-6	-4.28E-4	2.11E-3
ETP-fw	CTUe	1.36E+0	4.97E-2	2.84E-1	1.69E+0	1.08E-2	1.40E-1	1.70E-3	-4.95E-1	1.35E+0
HTP-c	CTUh	6.05E-11	1.80E-12	1.16E-11	7.39E-11	3.86E-13	1.08E-11	2.13E-14	-1.34E-11	7.17E-11
HTP-nc	CTUh	9.82E-10	5.88E-11	2.50E-10	1.29E-9	1.29E-11	1.51E-10	6.84E-13	-3.25E-10	1.13E-9
SQP	Pt	7.68E-1	5.14E-2	3.85E-2	8.58E-1	1.14E-2	-2.29E-1	2.04E-3	-9.65E-1	-3.23E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.39E-1	8.69E-4	5.93E-1	7.34E-1	1.92E-4	-3.86E-2	3.71E-5	-1.83E-1	5.12E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.39E-1	8.69E-4	5.93E-1	7.34E-1	1.92E-4	-3.86E-2	3.71E-5	-1.83E-1	5.12E-1
PENRE	MJ	3.93E+0	6.54E-2	2.72E-1	4.26E+0	1.42E-2	8.42E-2	8.53E-4	-1.95E+0	2.41E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.93E+0	6.54E-2	2.72E-1	4.26E+0	1.42E-2	8.42E-2	8.53E-4	-1.95E+0	2.41E+0
PET	MJ	4.06E+0	6.63E-2	8.66E-1	5.00E+0	1.44E-2	4.56E-2	8.90E-4	-2.14E+0	2.92E+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	1.99E-3	6.85E-6	8.52E-5	2.08E-3	1.51E-6	6.10E-5	1.00E-6	-9.36E-4	1.21E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.26E-7	1.55E-7	2.38E-7	1.02E-6	3.42E-8	1.35E-7	9.59E-10	-3.33E-7	8.56E-7
NHWD	kg	1.27E-2	3.71E-3	1.11E-3	1.75E-2	8.28E-4	4.28E-3	3.50E-3	-1.55E-3	2.46E-2
RWD	kg	2.12E-6	4.19E-7	1.80E-7	2.71E-6	9.08E-8	3.18E-7	5.30E-9	-4.47E-7	2.68E-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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