Environmental Profile

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

Ecochain v3.5.71

Product:	3031476 - Hep20 Brass Elbow 90° 15x1/2 PF/TF
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	6.20E-1	3.81E-3	5.70E-2	6.81E-1	3.29E-3	1.55E-2	2.08E-4	-1.76E-1	5.24E-1
GWP-f	kg CO2 eq	6.19E-1	3.81E-3	5.24E-2	6.75E-1	3.29E-3	1.56E-2	2.08E-4	-1.73E-1	5.21E-1
GWP-b	kg CO2 eq	3.23E-4	2.27E-6	4.61E-3	4.94E-3	2.00E-6	-1.21E-4	2.67E-7	-2.42E-3	2.39E-3
GWP-luluc	kg CO2 eq	7.98E-4	1.36E-6	1.33E-5	8.13E-4	1.16E-6	4.02E-6	1.95E-8	-2.36E-4	5.83E-4
ODP	kg CFC11 eq	3.49E-8	8.77E-10	6.47E-9	4.23E-8	7.58E-10	5.89E-10	2.86E-11	-9.76E-9	3.39E-8
AP	mol H+ eq	4.59E-2	2.30E-5	9.76E-5	4.60E-2	1.87E-5	3.55E-5	6.66E-7	-3.59E-3	4.24E-2
EP-fw	kg P eq	3.66E-4	3.11E-8	3.08E-7	3.66E-4	2.71E-8	1.89E-7	8.00E-10	-2.96E-5	3.37E-4
EP-m	kg N eq	2.39E-3	8.07E-6	2.40E-5	2.43E-3	6.71E-6	8.81E-6	3.85E-7	-4.24E-4	2.02E-3
EP-T	mol N eq	3.49E-2	8.90E-5	2.18E-4	3.52E-2	7.39E-5	9.99E-5	2.54E-6	-5.84E-3	2.95E-2
POCP	kg NMVOC eq	9.32E-3	2.53E-5	7.21E-5	9.42E-3	2.11E-5	2.86E-5	7.68E-7	-1.38E-3	8.09E-3
ADP-mm	kg Sb eq	2.91E-3	9.76E-8	3.41E-7	2.91E-3	8.51E-8	1.51E-7	6.43E-10	-1.36E-3	1.55E-3
ADP-f	MJ	7.21E+0	5.84E-2	7.59E-1	8.03E+0	5.05E-2	6.13E-2	1.96E-3	-2.27E+0	5.87E+0
WDP	m3 depriv.	4.67E-1	1.78E-4	6.44E-3	4.74E-1	1.55E-4	6.60E-4	7.60E-5	-1.27E-1	3.47E-1
PM	disease inc.	1.05E-7	3.41E-10	7.16E-10	1.06E-7	2.97E-10	5.10E-10	1.30E-11	-1.41E-8	9.27E-8
IR	kBq U-235 eq	2.45E-2	2.55E-4	5.92E-4	2.54E-2	2.21E-4	2.41E-4	8.27E-6	-9.70E-3	1.61E-2
ETP-fw	CTUe	4.51E+2	4.73E-2	4.60E-1	4.51E+2	4.10E-2	1.81E-1	1.71E-3	-6.36E+1	3.88E+2
HTP-c	CTUh	6.56E-9	1.69E-12	1.98E-11	6.58E-9	1.46E-12	7.68E-12	3.29E-14	-1.43E-9	5.16E-9
HTP-nc	CTUh	5.27E-7	5.62E-11	3.96E-10	5.28E-7	4.89E-11	1.98E-10	1.02E-12	-9.10E-8	4.37E-7
SQP	Pt	7.03E+0	4.95E-2	6.97E-2	7.15E+0	4.32E-2	8.36E-2	4.25E-3	-1.27E+0	6.01E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.47E+0	8.32E-4	7.62E-1	2.23E+0	7.25E-4	5.85E-3	2.72E-5	-3.81E-1	1.86E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.47E+0	8.32E-4	7.62E-1	2.23E+0	7.25E-4	5.85E-3	2.72E-5	-3.81E-1	1.86E+0
PENRE	MJ	7.70E+0	6.20E-2	8.35E-1	8.59E+0	5.36E-2	6.52E-2	2.08E-3	-2.43E+0	6.28E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	7.70E+0	6.20E-2	8.35E-1	8.59E+0	5.36E-2	6.52E-2	2.08E-3	-2.43E+0	6.28E+0
PET	MJ	9.17E+0	6.28E-2	1.60E+0	1.08E+1	5.44E-2	7.10E-2	2.11E-3	-2.81E+0	8.15E+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	1.23E-2	6.56E-6	1.83E-4	1.25E-2	5.72E-6	3.11E-5	2.15E-6	-3.43E-3	9.09E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.63E-4	1.48E-7	8.88E-7	3.64E-4	1.29E-7	1.44E-7	2.84E-9	-1.71E-4	1.94E-4
NHWD	kg	1.80E-1	3.58E-3	4.13E-3	1.88E-1	3.13E-3	2.55E-3	1.26E-2	-5.93E-2	1.47E-1
RWD	kg	2.09E-5	3.97E-7	6.71E-7	2.20E-5	3.44E-7	2.98E-7	1.29E-8	-7.74E-6	1.49E-5
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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