Environmental Profile

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

Ecochain v3.5.71

Product:	3030717 - Hep20 Branch Reduced Tee Spigot W 22x15
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	4.17E-1	6.73E-3	2.99E-2	4.54E-1	1.50E-3	6.20E-2	6.74E-4	-2.09E-1	3.09E-1
GWP-f	kg CO2 eq	4.21E-1	6.72E-3	2.77E-2	4.55E-1	1.50E-3	5.08E-2	6.74E-4	-2.13E-1	2.95E-1
GWP-b	kg CO2 eq	-3.43E-3	3.88E-6	2.10E-3	-1.33E-3	9.12E-7	1.12E-2	6.78E-7	3.33E-3	1.32E-2
GWP-luluc	kg CO2 eq	6.54E-5	2.45E-6	1.09E-5	7.88E-5	5.31E-7	6.91E-6	1.31E-8	-5.25E-5	3.38E-5
ODP	kg CFC11 eq	5.78E-9	1.54E-9	3.13E-9	1.05E-8	3.46E-10	1.28E-9	1.84E-11	-2.72E-9	9.38E-9
AP	mol H+ eq	2.03E-3	4.50E-5	6.92E-5	2.15E-3	8.55E-6	4.94E-5	4.57E-7	-8.40E-4	1.37E-3
EP-fw	kg P eq	5.02E-6	5.42E-8	2.00E-7	5.27E-6	1.24E-8	2.34E-7	6.04E-10	-2.28E-6	3.23E-6
EP-m	kg N eq	3.60E-4	1.52E-5	1.45E-5	3.90E-4	3.06E-6	1.51E-5	8.64E-7	-1.68E-4	2.41E-4
EP-T	mol N eq	3.68E-3	1.68E-4	1.41E-4	3.98E-3	3.37E-5	1.65E-4	1.82E-6	-1.71E-3	2.48E-3
POCP	kg NMVOC eq	1.42E-3	4.74E-5	4.56E-5	1.51E-3	9.64E-6	4.97E-5	6.61E-7	-6.59E-4	9.14E-4
ADP-mm	kg Sb eq	7.97E-6	1.69E-7	2.99E-7	8.44E-6	3.88E-8	1.90E-7	4.46E-10	-1.15E-6	7.53E-6
ADP-f	MJ	6.06E+0	1.03E-1	3.89E-1	6.55E+0	2.31E-2	1.44E-1	1.36E-3	-3.06E+0	3.66E+0
WDP	m3 depriv.	1.25E-1	3.09E-4	3.91E-3	1.29E-1	7.07E-5	3.06E-3	6.27E-6	-5.88E-2	7.35E-2
PM	disease inc.	1.75E-8	5.92E-10	5.07E-10	1.86E-8	1.36E-10	7.39E-10	9.24E-12	-7.96E-9	1.15E-8
IR	kBq U-235 eq	2.19E-3	4.48E-4	3.35E-4	2.97E-3	1.01E-4	4.49E-4	6.54E-6	-5.94E-4	2.94E-3
ETP-fw	CTUe	1.94E+0	8.27E-2	3.60E-1	2.38E+0	1.87E-2	2.40E-1	2.86E-3	-7.05E-1	1.94E+0
HTP-c	CTUh	9.67E-11	3.00E-12	1.49E-11	1.15E-10	6.66E-13	1.98E-11	3.59E-14	-2.07E-11	1.15E-10
HTP-nc	CTUh	1.52E-9	9.78E-11	3.15E-10	1.94E-9	2.23E-11	2.67E-10	1.15E-12	-4.99E-10	1.73E-9
SQP	Pt	9.40E-1	8.55E-2	5.03E-2	1.08E+0	1.97E-2	-1.78E-1	3.44E-3	-1.35E+0	-4.25E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.78E-1	1.45E-3	7.11E-1	8.90E-1	3.31E-4	-3.54E-2	6.26E-5	-2.57E-1	5.99E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.78E-1	1.45E-3	7.11E-1	8.90E-1	3.31E-4	-3.54E-2	6.26E-5	-2.57E-1	5.99E-1
PENRE	MJ	6.53E+0	1.09E-1	4.27E-1	7.07E+0	2.45E-2	1.53E-1	1.44E-3	-3.31E+0	3.93E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.53E+0	1.09E-1	4.27E-1	7.07E+0	2.45E-2	1.53E-1	1.44E-3	-3.31E+0	3.93E+0
PET	MJ	6.71E+0	1.10E-1	1.14E+0	7.96E+0	2.48E-2	1.18E-1	1.50E-3	-3.57E+0	4.53E+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	3.01E-3	1.14E-5	1.17E-4	3.14E-3	2.61E-6	1.00E-4	1.69E-6	-1.40E-3	1.84E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.88E-7	2.57E-7	4.05E-7	1.55E-6	5.90E-8	2.45E-7	1.62E-9	-4.96E-7	1.36E-6
NHWD	kg	2.07E-2	6.17E-3	1.89E-3	2.88E-2	1.43E-3	7.41E-3	5.91E-3	-2.42E-3	4.11E-2
RWD	kg	2.60E-6	6.98E-7	3.07E-7	3.61E-6	1.57E-7	5.71E-7	8.94E-9	-6.20E-7	3.73E-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

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