Environmental Profile

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

Ecochain v3.5.71

Product:	3030659 - Hep20 2Port Manifold 22x10 PF/PF OppSide
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	6.40E-1	1.01E-2	4.42E-2	6.94E-1	2.16E-3	1.11E-1	9.83E-4	-3.19E-1	4.90E-1
GWP-f	kg CO2 eq	6.52E-1	1.01E-2	4.12E-2	7.03E-1	2.16E-3	7.83E-2	9.83E-4	-3.29E-1	4.56E-1
GWP-b	kg CO2 eq	-1.18E-2	5.82E-6	3.03E-3	-8.81E-3	1.31E-6	3.31E-2	9.88E-7	9.68E-3	3.40E-2
GWP-luluc	kg CO2 eq	1.61E-4	3.65E-6	1.71E-5	1.82E-4	7.65E-7	7.14E-6	1.92E-8	-1.49E-4	4.09E-5
ODP	kg CFC11 eq	1.12E-8	2.31E-9	4.58E-9	1.81E-8	4.98E-10	1.88E-9	2.69E-11	-4.93E-9	1.56E-8
AP	mol H+ eq	3.07E-3	6.68E-5	1.06E-4	3.24E-3	1.23E-5	7.08E-5	6.66E-7	-1.29E-3	2.04E-3
EP-fw	kg P eq	8.75E-6	8.12E-8	3.04E-7	9.14E-6	1.78E-8	3.05E-7	8.81E-10	-4.52E-6	4.95E-6
EP-m	kg N eq	5.72E-4	2.27E-5	2.19E-5	6.17E-4	4.40E-6	2.23E-5	1.26E-6	-2.67E-4	3.77E-4
EP-T	mol N eq	5.80E-3	2.50E-4	2.15E-4	6.27E-3	4.85E-5	2.42E-4	2.65E-6	-2.73E-3	3.84E-3
POCP	kg NMVOC eq	2.16E-3	7.06E-5	6.93E-5	2.30E-3	1.39E-5	7.14E-5	9.64E-7	-1.00E-3	1.38E-3
ADP-mm	kg Sb eq	1.44E-5	2.53E-7	4.69E-7	1.51E-5	5.59E-8	2.78E-7	6.50E-10	-1.99E-6	1.35E-5
ADP-f	MJ	9.07E+0	1.54E-1	5.75E-1	9.80E+0	3.32E-2	2.00E-1	1.98E-3	-4.55E+0	5.48E+0
WDP	m3 depriv.	2.02E-1	4.63E-4	5.91E-3	2.09E-1	1.02E-4	4.25E-3	9.13E-6	-1.07E-1	1.06E-1
PM	disease inc.	2.72E-8	8.87E-10	7.81E-10	2.88E-8	1.95E-10	1.02E-9	1.35E-11	-1.28E-8	1.73E-8
IR	kBq U-235 eq	4.19E-3	6.71E-4	5.02E-4	5.37E-3	1.45E-4	6.43E-4	9.54E-6	-1.53E-3	4.64E-3
ETP-fw	CTUe	4.26E+0	1.24E-1	5.60E-1	4.94E+0	2.69E-2	3.49E-1	4.17E-3	-1.83E+0	3.50E+0
HTP-c	CTUh	1.53E-10	4.49E-12	2.31E-11	1.80E-10	9.59E-13	2.73E-11	5.24E-14	-3.76E-11	1.71E-10
HTP-nc	CTUh	2.49E-9	1.46E-10	4.91E-10	3.13E-9	3.21E-11	3.82E-10	1.68E-12	-9.58E-10	2.59E-9
SQP	Pt	2.39E+0	1.28E-1	7.76E-2	2.59E+0	2.84E-2	-7.16E-1	5.02E-3	-3.83E+0	-1.92E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.34E-1	2.17E-3	1.12E+0	1.56E+0	4.76E-4	-1.18E-1	9.13E-5	-7.15E-1	7.27E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.34E-1	2.17E-3	1.12E+0	1.56E+0	4.76E-4	-1.18E-1	9.13E-5	-7.15E-1	7.27E-1
PENRE	MJ	9.78E+0	1.63E-1	6.29E-1	1.06E+1	3.52E-2	2.13E-1	2.10E-3	-4.92E+0	5.90E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	9.78E+0	1.63E-1	6.29E-1	1.06E+1	3.52E-2	2.13E-1	2.10E-3	-4.92E+0	5.90E+0
PET	MJ	1.02E+1	1.65E-1	1.75E+0	1.21E+1	3.57E-2	9.55E-2	2.19E-3	-5.64E+0	6.62E+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	4.91E-3	1.71E-5	1.79E-4	5.11E-3	3.75E-6	1.47E-4	2.46E-6	-2.59E-3	2.67E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.63E-6	3.85E-7	5.87E-7	2.60E-6	8.48E-8	3.43E-7	2.36E-9	-8.89E-7	2.14E-6
NHWD	kg	3.27E-2	9.25E-3	2.74E-3	4.46E-2	2.06E-3	1.08E-2	8.61E-3	-4.44E-3	6.17E-2
RWD	kg	5.01E-6	1.04E-6	4.44E-7	6.50E-6	2.26E-7	8.27E-7	1.30E-8	-1.54E-6	6.02E-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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