Environmental Profile

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

Ecochain v3.5.71

Product:	3030662 - Hep20 4Port Manifold 22x10 PF/SP 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	6.17E-1	9.90E-3	4.57E-2	6.73E-1	2.22E-3	1.18E-1	1.02E-3	-3.07E-1	4.86E-1
GWP-f	kg CO2 eq	6.29E-1	9.89E-3	4.27E-2	6.82E-1	2.21E-3	8.45E-2	1.02E-3	-3.17E-1	4.52E-1
GWP-b	kg CO2 eq	-1.19E-2	5.71E-6	3.03E-3	-8.89E-3	1.34E-6	3.31E-2	1.02E-6	9.67E-3	3.39E-2
GWP-luluc	kg CO2 eq	1.65E-4	3.60E-6	1.90E-5	1.88E-4	7.84E-7	7.34E-6	1.98E-8	-1.49E-4	4.73E-5
ODP	kg CFC11 eq	1.25E-8	2.27E-9	4.65E-9	1.94E-8	5.10E-10	1.91E-9	2.78E-11	-5.21E-9	1.67E-8
AP	mol H+ eq	3.06E-3	6.60E-5	1.16E-4	3.24E-3	1.26E-5	7.26E-5	6.89E-7	-1.26E-3	2.06E-3
EP-fw	kg P eq	8.35E-6	7.98E-8	3.27E-7	8.75E-6	1.82E-8	3.11E-7	9.11E-10	-4.23E-6	4.86E-6
EP-m	kg N eq	5.50E-4	2.23E-5	2.33E-5	5.96E-4	4.51E-6	2.29E-5	1.30E-6	-2.55E-4	3.70E-4
EP-T	mol N eq	5.61E-3	2.46E-4	2.31E-4	6.09E-3	4.97E-5	2.49E-4	2.74E-6	-2.61E-3	3.78E-3
POCP	kg NMVOC eq	2.14E-3	6.96E-5	7.42E-5	2.29E-3	1.42E-5	7.31E-5	9.98E-7	-9.87E-4	1.39E-3
ADP-mm	kg Sb eq	1.62E-5	2.49E-7	5.25E-7	1.69E-5	5.73E-8	2.83E-7	6.73E-10	-1.88E-6	1.54E-5
ADP-f	MJ	9.20E+0	1.51E-1	5.91E-1	9.94E+0	3.40E-2	2.04E-1	2.04E-3	-4.58E+0	5.60E+0
WDP	m3 depriv.	1.92E-1	4.55E-4	6.29E-3	1.99E-1	1.04E-4	4.38E-3	9.45E-6	-1.00E-1	1.03E-1
PM	disease inc.	2.70E-8	8.71E-10	8.51E-10	2.87E-8	2.00E-10	1.04E-9	1.39E-11	-1.25E-8	1.74E-8
IR	kBq U-235 eq	4.68E-3	6.59E-4	5.28E-4	5.87E-3	1.49E-4	6.54E-4	9.87E-6	-1.56E-3	5.12E-3
ETP-fw	CTUe	4.36E+0	1.22E-1	6.19E-1	5.10E+0	2.76E-2	3.62E-1	4.32E-3	-1.82E+0	3.68E+0
HTP-c	CTUh	1.54E-10	4.42E-12	2.54E-11	1.83E-10	9.82E-13	2.78E-11	5.42E-14	-3.64E-11	1.76E-10
HTP-nc	CTUh	2.51E-9	1.44E-10	5.44E-10	3.20E-9	3.29E-11	3.91E-10	1.74E-12	-9.35E-10	2.69E-9
SQP	Pt	2.42E+0	1.26E-1	8.48E-2	2.63E+0	2.91E-2	-7.13E-1	5.19E-3	-3.83E+0	-1.88E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.41E-1	2.13E-3	1.26E+0	1.71E+0	4.88E-4	-1.18E-1	9.44E-5	-7.15E-1	8.76E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.41E-1	2.13E-3	1.26E+0	1.71E+0	4.88E-4	-1.18E-1	9.44E-5	-7.15E-1	8.76E-1
PENRE	MJ	9.91E+0	1.60E-1	6.47E-1	1.07E+1	3.61E-2	2.17E-1	2.17E-3	-4.96E+0	6.02E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	9.91E+0	1.60E-1	6.47E-1	1.07E+1	3.61E-2	2.17E-1	2.17E-3	-4.96E+0	6.02E+0
PET	MJ	1.04E+1	1.62E-1	1.91E+0	1.24E+1	3.66E-2	9.96E-2	2.26E-3	-5.67E+0	6.90E+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	4.68E-3	1.68E-5	1.92E-4	4.89E-3	3.85E-6	1.55E-4	2.55E-6	-2.43E-3	2.62E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.72E-6	3.78E-7	5.87E-7	2.68E-6	8.69E-8	3.53E-7	2.44E-9	-9.37E-7	2.19E-6
NHWD	kg	3.31E-2	9.08E-3	2.74E-3	4.49E-2	2.11E-3	1.11E-2	8.91E-3	-4.38E-3	6.27E-2
RWD	kg	5.66E-6	1.03E-6	4.44E-7	7.13E-6	2.31E-7	8.41E-7	1.35E-8	-1.58E-6	6.63E-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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