

Smart MultiPure 2.0

Smart Multipure 2.0 is an all-in-one solution for portable water filtration. It instantly filters out multiple contaminants from your tap water, especially heavy metals, pesticides and microbiological pollutants. i.e. bacteria. Cartridge works with the four stages filtration process: 1) a plant-based washable fabric takes care of macroparticles and dust; 2) a coconut carbon block takes care of water taste, smell and microfiltration; 3) BluAct patented granulated media with milk proteins removes heavy metals and organic pollutants; 4) a last stage hollow fibers take care of the microbiology of water.

Key Benefits

- Ultimate portable All-in-One filtration: Removes heavy metals, organic pollutants (pesticides) and microbiological pollutants.
- Easy to Install and easy to use: No need of plumbing
- Instant filtration: Faucet attachment with diverter valve
- Digital flow meter: real time monitoring alert for change of the filters
- Decoloration, deodorization, neutral taste of the water.
- Hormones, Chlorine and other trace elements removal.
- No electricity or additional energy is required.
- No additional remineralization is required.
- 100 % throughput of water. No waste!











Certifications

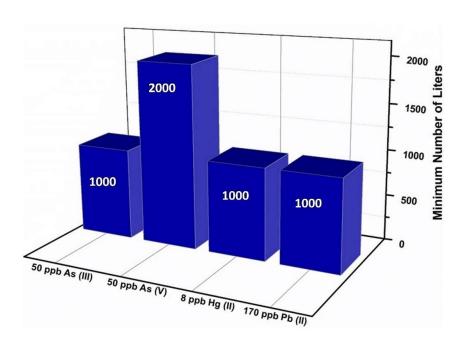
Heavy metals: Removal efficiency meets (and greatly exceeds) NSF53 Certification standards and has been validated by numerous field studies across Asia, Europe and America. Certified by Swiss Government (Labor Spiez); Indian government (Council of Scientific and Industrial Research, CSIR-NGRI).

Food contact certification: all components used in our technologies are in compliance with food-contact legislation (EU 1935/ 2004 regulations).

BluAct cartridges are able to remove most microbiological contaminants: for example 7.5 Logs reduction of the E-coli concentration in the most microbiologically challenging and polluted water sources. Certified by World Health Organization (WHO).

Benchmark to NSF53 standards

BluAct Technologies, complies with most stringent certifications and largely meets NSF 53 standards in all heavy metals of concerns, such as Arsenic (III and V forms), Lead, Mercury, etc. For example, with one all-in-one cartridge, the performance against NSF53 standards is as follow:



The minimum number of liters treated by one single all-in-one cartridge for various heavy metals removal according to NSF 53 standards.





EFFICIENCY

Some Representative Removal efficiencies:

Natural and wastewater heavy metals Precious metals removal and recovery

 Arsenic (V & III): 99.9 %
 Gold
 : 99.6 %

 Lead
 : 99.9 %
 Platinum
 : 99.9 %

 Mercury
 : 99.5 %
 Silver
 : 99.8 %

 Nickel
 : 99.8 %
 Palladium
 : 99.8 %

Chromium : 99.2 % Aluminium : 98 %

Radioactive Pollutants Organic Pollutants

 Technetium (Tc-99m): 99.9 %
 Acetoamenophene
 : 99.9 %

 Iodine (I-123)
 : 99.9 %
 Desethylatrazine
 : 99.9 %

 Gallium (Ga-68)
 : 99.8 %
 Acesulfame
 : 99.9 %

Lutetium (Lu-177) : 99.9 %

Iodine (I- 131) : 99.9 %

Other Pollutants

Cesium (Cs-137) : 99.7 % PFAS and Micropollutants > 97%

Phosphorous (P-32) : 99.8 %

: 99.3 %

Uranium

Technical Specification

Best performance Flow rate: 0.8 Liter / min Membrane pore sizes: 0.1 μ m Approximate differential pressure 0.5 bar Cartridge capacity @ moderate pollution levels 4000 lts

Representative arsenic data: approximate removal capacity and cost per m³ of water treatment using All-in-one cartridge at various arsenic contamination levels.

1 Cartridge Unit	capacity m³ / unit	Cost CHF/ m ³
Arsenic Contamination 20 ug/L (2 times above WHO limit)	> 8.3 - 13.3	1.6-2.6
Arsenic Contamination 100 ug/L (10 times above WHO limit)	> 2 – 3.3	6.6-11
Arsenic Contamination 300 ug/L (30 times above WHO limit)	0.6 – 1.3	17-36

Sterilization

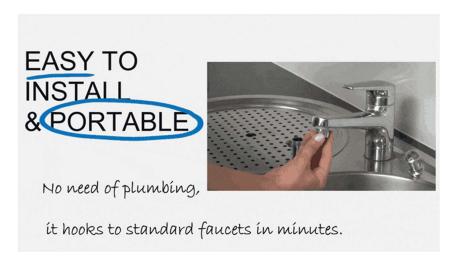
The cartridges should be sterilized with hot water or chlorinated water first time used. Clogging can be removed by backflushing.





Safety

No adverse effects are known when the product is used in accordance with its intended purpose. Storage, handling and transportation are not hazardous to humans or the environment. The cartridges should be stored in original packaging in a dry and odorless place, protected against UV radiation. The cartridges should be used within 36 months of the date of production. The cartridges need to be disposed according the national regulations.



Just filter what you need, when you need it. With the diverter valve attached to the faucet, you can choose when to filter water. Use clean filtered water to prepare your favorite drinks, from your coffee/tea in the morning to your detox waters to stay hydrate all day long. Don't forget to use safe filtered water to rinse your veggies and fruits.







References

- Amyloid carbon Hybrid materials for universal water purification.
 Nature Nanotechnology, 2016, 11, 365–371 http://dx.doi.org//10.1038/nnano.2015.310
- 2) Amyloid fibril-based membranes for PFAS removal from water. *Environmental Science: Water Research & Technology*, 2021, 7, 1873-1884 https://doi.org/10.1039/D1EW00373A
- Arsenic removal from Peruvian drinking water using milk protein nanofibril–carbon filters: a field study
 Environmental Science: Water Research & Technology, 2021,7, 2223-2230
 https://doi.org/10.1039/D1EW00456E
- Sustainable Technologies for Water Purification from Heavy Metals: Review and Analysis Chemical Society Reviews, 2019, 48, 463-487. http://dx.doi.org//10.1039/C8CS00493E
- 5) An anti-viral trap made of protein nanofibrils and iron hydroxide Nanoparticles. *Nature Nanotechnology*, 2021, 16, 918-925. https://doi.org/10.1038/s41565-021-00920-5
- 6) Efficient purification of arsenic-contaminated water using amyloid-carbon hybrid membranes., *Chemical Communications*, 2017, 53, 5714-5717. http://dx.doi.org//10.1039/C7CC00406K
- Selective and Efficient Removal of Fluoride from Water: In Situ Engineered Amyloid Fibril/ZrO2 Hybrid Membranes
 Angewandte Chemie, 2019, 58, 6012-6016. https://doi.org/10.1002/anie.201901596
- Amyloid Fibrils Aerogel for Sustainable Removal of Organic Contaminants from Water Advanced Materials, 2020, 32, 1907932. https://doi.org/10.1002/adma.201907932
- 9) Amyloid hybrid membranes for bacterial & genetic material removal from water and their anti-biofouling properties. *Nanoscale Advances*, 2020, 2, 4665-4670. https://doi.org/10.1039/D0NA00189A
- 10) Amyloid hybrid membranes for removal of clinical and nuclear radioactive wastewater Environmental Science: Water Research & Technology, 2020, 6, 3249-3254. https://doi.org/10.1039/D0EW00693A
- 11) Assessing the Binding Performance of Amyloid–Carbon Membranes toward Heavy Metal Ions *Langmuir*, 2019, 35 (11), 4161-4170. https://doi.org/10.1021/acs.langmuir.8b04234
- 12) Ubiquitous aluminium contamination in water and amyloid hybrid membranes as a sustainable possible solution *Chemical Communications*, 2019, 55 (74), 11143-11146. https://doi.org/10.1021/acs.langmuir.8b04234

Contact

BluAct Technologies GmbH,

Dufaux-strasse 57, 8152, Glattpark, Zurich-Opfikon, Switzerland.

www.bluact.com