Substance Reduction Test Report

Detailed performance and contaminant reduction data for the

Patriot Pure® Nanomesh™ Water Filter

Filter Model	Patriot Pure® Nanomesh™ Water Filter
Report Number	23-56
Test Type	R&D Testing
Version	1.2
Report Date	January 29, 2024
Conducted for	4Patriots 2920 Berry Hill Drive Suite #300 Nashville, TN 37204
Conducted by	IAPMO R&T Laboratory

TESTING METHODOLOGY & QUALITY STANDARDS OVERVIEW

The lab results presented in this report were obtained by using a single Patriot Pure® Nanomesh™ water filter. **For filtration systems using two Patriot Pure® Nanomesh™ filters, the stated capacity may be doubled.**

The testing was carried out under controlled conditions in an ISO/IEC 17025:2017 accredited laboratory.

Influent Challenge Concentration Before Filtration (i.e.,"Before Filtration") and Maximum Allowable Effluent Concentration (i.e., "After Filtration") provided in the table below adhere to the specifications defined in the NSF/ANSI Standards 42, 53, and 401, except where those standards do not specify parameters for the listed substances.

The testing of Volatile Organic Compounds (VOCs) listed below utilized Chloroform as a surrogate chemical.

TEST RESULTS FOR PATRIOT PURE® NANOMESH™ FILTERS

Contaminant	Gallons Tested	Concentration Before Filtration (ug/L)	Concentration After Filtration (ug/L)	Reduction Rate
2,4-D	800	102.2	<0.1	99.9%
2,4-DB	800	101.7	<0.1	96.09%
2,4,5-T	800	101.8	<0.1	99.9%
2,4,5-TP	800	100.9	<0.1	99.9%
3,5-Dichlorobenzoic	800	102.3	<0.1	99.9%
Acifluorfen	800	94.8	<0.1	94.4%
Alachlor	800	92	<0.1	99.5%
Aldrin	800	21	<0.1	99.9%
Alpha-BHC	800	51	<0.1	99.9%
Arsenic pH 6.5	400	53	<1	99.9%
Arsenic pH 8.5	400	42	<1	97.6%
Atenolol	400	240 ng/L	<1 ng/L	95.8%
Atrazine	800	48	<0.1	99.9%
Bentazon	800	101.5	<0.1	91.70%
Beta-BHC	800	50	<0.1	99.9%
Bisphenol	400	2156 ng/L	74 ng/L	96.6%

Contaminant	Gallons Tested	Concentration Before Filtration (ug/L)	Concentration After Filtration (ug/L)	Reduction Rate
Bromacil	800	96	<0.1	99.9%
Butachlor	800	52	<0.1	99.9%
Butylate	800	53	<0.1	99.9%
Cadmium pH 6.5	400	25	1	98%
Cadmium pH 8.5	400	24	1	93.8%
Carbamazepine	400	1515 ng/L	<10 ng/L	99.9%
Chloramben	800	101.9	<0.1	99.9%
Chlorine	800	2 mg/L	<0.01 mg/L	99.99%
Chloroform	400	293	<0.1	99.9%
Chloropham	800	41	<0.1	99.9%
Chlorpyrifos	800	55	<0.1	99.9%
Chromium pH 6.5	400	300	1	96.5%
Chromium pH 8.5	400	243	8	95.5%
Cis-Chlordane	800	57	<0.1	99.9%
Copper pH 6.5	400	3023	3	98.9%
Copper pH 8.5	400	3032	31	99.9%
Cyanazine	800	67	<0.1	99.5%
Cyanizine	800	104	<0.1	99.9%
Dalapon	800	101.9	<0.1	99.9%
DCPA	800	101.4	<0.1	99.9%
DEET	400	1462 ng/L	<10 ng/L	99.9%
Delta-BHC	800	51	<0.1	99.9%
Dicamba	800	101.5	<0.1	94.6%
Dichlorovos	800	67	<0.1	99.9%
Dieldrin	800	55	<0.1	99.9%
Dinoseb	800	101.9	<0.1	99.9%

Contaminant	Gallons Tested	Concentration Before Filtration (ug/L)	Concentration After Filtration (ug/L)	Reduction Rate
Diphenamid	800	56	<0.1	99.9%
Disulfoton	800	56	<0.1	99.9%
Endosulfan I	800	27	<0.1	99.9%
Endosulfan II	800	52	<0.1	98.9%
Endosulfan Sulfate	800	57	<0.1	99.1%
Endrin	800	51	<0.1	99.9%
Endrin Aldehyde	800	57	<0.1	94.3%
Endrin Ketone	800	56	<0.1	99.9%
Estrone	400	134 ng/L	6 ng/L	94.8%
Ethoprop	800	52	<0.1	99.9%
Fenamiphos	800	75	<0.1	99.9%
Fenarimol	800	88	<0.1	99.9%
Fluoridone	800	54	<0.1	99.9%
Gamma-BHC (Lindane)	800	57	<0.1	99.9%
Heptachlor	800	55	<0.1	99.9%
Heptachlor Epoxide	800	47	<0.1	99.9%
Hexachlorobenzene	800	53	<0.1	99.9%
Hexachlorocyclopentadiene	800	53	<0.1	99.9%
Ibuprofen	400	386 ng/L	7 ng/L	96.9%
Lead pH 6.5	400	150	<1	99.9%
Lead pH 8.5	400	152	<1	99.9%
Linuron	400	138 ng/L	<1 ng/L	94.2%
Meprobamate	400	433 ng/L	<1 ng/L	99.9%
Mercury pH 6.5	400	6.2	<0.1	99.9%
Mercury pH 8.5	400	6.2	<0.1	99.9%
Methoxychlor	800	57	<0.1	99.9%

Contaminant	Gallons Tested	Concentration Before Filtration (ug/L)	Concentration After Filtration (ug/L)	Reduction Rate
Metolachlor	800	95	<0.1	99.9%
Metolachlor	400	1518 ng/L	<10 ng/L	99.9%
Metribuzin	800	56	<0.1	99.9%
Molinate	800	49	<0.1	99.9%
Naproxen	400	139 ng/L	7 ng/L	94.6%
Nonylphenol	400	1398 ng/L	50 ng/L	94.0%
p,p'-DDD	800	48	<0.1	99.9%
p,p'-DDE	800	48	<0.1	99.9%
p,p'-DDT	800	57	<0.1	99.9%
PCB	800	54	<0.1	99.9%
Pentachlorophenol	800	101.8	<0.1	99.9%
PFHpA	400	0.04	<0.01	99.9%
PFHxS	400	0.3	<0.01	99.9%
PFNA	400	0.05	<0.01	99.9%
PFOA	400	0.5	<0.01	99.9%
PFOA & PFOS	400	1.5	<0.01	99.9%
PFOS	400	1	<0.01	99.9%
Phenytoin	400	209 ng/L	11 ng/L	95.7%
Pichloram	800	101.5	<0.1	77.7%
Propachlor	800	53	<0.1	99.9%
Propazine	800	52	<0.1	99.9%
Quinclorac	800	112	<0.1	88.5%
Selenium pH 6.5	400	108	1	98.2%
Selenium pH 8.5	400	107	<1	99.9%
Simazine	800	35	<0.1	99.9%
TCEP	400	5173 ng/L	108 ng/L	97.5%

Contaminant	Gallons Tested	Concentration Before Filtration (ug/L)	Concentration After Filtration (ug/L)	Reduction Rate
TCPP	400	5200 ng/L	115 ng/L	97.2%
Toxaphene	800	54	<0.1	99.9%
Trans-Chlordane (Nonachlor)	800	56	<0.1	99.5%
Trimethoprim	400	150 ng/L	<1 ng/L	99.9%
Vernolate	800	54	<0.1	99.9%

Volatile Contaminants (VOCs)

Contaminant	Gallons Tested	Testing Status	Reduction Rate
1,1-Dichloroethane	800	Completed	99.9%
1,1-Dichloropropane	800	Completed	99.9%
1,1,1-Trichloroethane	800	Completed	99.9%
1,1,1,2-Tetrachloroethane	800	Completed	99.9%
1,1,2-Trichloroethane	800	Completed	99.9%
1,1,2,2-Tetrachloroethane	800	Completed	99.9%
1,2-Dibromo-3-Chloropropane	800	Completed	99.9%
1,2-Dibromoethane (EDB)	800	Completed	99.9%
1,2-Dichlorethane	800	Completed	99.9%
1,2-Dichlorobenzene	800	Completed	99.9%
1,2-Dichloropropane	800	Completed	99.9%
1,2,3-Trichlorobenzene	800	Completed	99.9%
1,2,3-Trichloropropane	800	Completed	99.9%
1,2,4-Trichlorobenzene	800	Completed	99.9%
1,2,4-Trimethylbenzene	800	Completed	99.9%
1,3-Dichlorobenzene	800	Completed	99.9%
1,3-Dichloropropane	800	Completed	99.9%

Contaminant	Gallons Tested	Testing Status	Reduction Rate
1,3,5-Trimethybenzene	800	Completed	99.9%
1,4-Dichlorobenzene	800	Completed	99.9%
2-Chlorotoluene	800	Completed	99.9%
2,2-Dichloropropane	800	Completed	99.9%
4-Chlorotoluene	800	Completed	99.9%
4-Isopropyltoluene	800	Completed	99.9%
Benzene	800	Completed	99.9%
Bromobenzene	800	Completed	99.9%
Bromochloromethane	800	Completed	99.9%
Bromodichloromethane	800	Completed	99.9%
Bromoform	800	Completed	99.9%
Bromomethane	800	Completed	99.9%
Carbon Tetrachloride	800	Completed	99.9%
Chlorobenzene	800	Completed	99.9%
Chlorodibromomethane	800	Completed	99.9%
Chloroethane	800	Completed	99.9%
Chloroform	800	Completed	99.9%
Chloromethane	800	Completed	99.9%
cis-1,2-Dichloroethene	800	Completed	99.9%
cis-1,3-Dichloropropene	800	Completed	99.9%
Dibromethane	800	Completed	99.9%
Dichlorodifluoromethane	800	Completed	99.9%
Dimethyl Ether	800	Completed	99.9%
Ethylbenzene	800	Completed	99.9%
Fluorotrichloromethane	800	Completed	99.9%
Hexachlorobutadiene	800	Completed	99.9%
Isopropylbenzene	800	Completed	99.9%

Contaminant	Gallons Tested	Testing Status	Reduction Rate
m and p-Xylene	800	Completed	99.9%
Methylene Chloride	800	Completed	99.9%
MTBE	800	Completed	99.9%
n-Butylbenzene	800	Completed	99.9%
n-Propylbenzene	800	Completed	99.9%
Napthalene	800	Completed	99.9%
o-Xylene	800	Completed	99.9%
sec-Butylbenzene	800	Completed	99.9%
Styrene	800	Completed	99.9%
Tert-Butylbenzene	800	Completed	99.9%
Tetrachloroethane	800	Completed	99.9%
Toluene	800	Completed	99.9%
Trans-1,2-Dichloroethylene	800	Completed	99.9%
trans-1,3-Dichloropropene	800	Completed	99.9%
Trichloroethane	800	Completed	99.9%
Vinylchloride	800	Completed	99.9%

Semi-Volatile Contaminants (VOCs)

Contaminant	Gallons Tested	Testing Status	Reduction Rate
2,4-Dinitrotoluene	400	Completed	99.9%
2,6-Dinitrotoluene	400	Completed	99.9%
Acenaphthene	400	Completed	99.9%
Acenaphthylene	400	Completed	99.9%
Anthracene	400	Completed	99.9%
Anthracene	400	Completed	99.9%
Atraton	400	Completed	99.9%

Contaminant	Gallons Tested	Testing Status	Reduction Rate
Benzo (a) Anthracene	400	Completed	99.9%
Benzo (a) Pyrene	400	Completed	99.9%
Benzo (b) Fluoranthene	400	Completed	99.9%
Benzo (g.h.i) Perylene	400	Completed	99.9%
Benzo (k) Fluoranthene	400	Completed	99.9%
BHT	400	Completed	99.9%
Bis (2-ethylhexyl) Adipate	400	Completed	99.9%
Bis (2-ethylhexyl) Phthalate	400	Completed	99.9%
Butylbenzylphthalate	400	Completed	99.9%
Chrysene	400	Completed	99.9%
Cycloate	400	Completed	99.9%
DEET	400	Completed	99.9%
Di-n-Butylphthalate	400	Completed	99.9%
Di-n-Octylthalate	400	Completed	99.9%
Dibenzo (a,h) Anthracene	400	Completed	99.9%
Diethylphthalate	400	Completed	99.9%
Dimethylphthalate	400	Completed	99.9%
Diphenamid	400	Completed	99.9%
EPTC	400	Completed	99.9%
Etridiazole	400	Completed	99.9%
Fenarimol	400	Completed	99.9%
Fluorene	400	Completed	99.9%
Fluridone	400	Completed	99.9%
Fluroranthene	400	Completed	99.9%
Hexazinone	400	Completed	99.9%
Indeno (1,2,3-cd) Pyrene	400	Completed	99.9%
Isophrone	400	Completed	99.9%

Contaminant	Gallons Tested	Testing Status	Reduction Rate
MGK 264 - Isomer a	400	Completed	99.9%
Naphthalene	400	Completed	99.9%
Napropamide	400	Completed	99.9%
Nitrofen	400	Completed	99.9%
Norflurazon	400	Completed	99.9%
Oxyfluorfen	400	Completed	99.9%
Pebulate	400	Completed	99.9%
Pentachlorophenol	400	Completed	99.9%
Phenanthrene	400	Completed	99.9%
Prometon	400	Completed	99.9%
Prometryn	400	Completed	99.9%
Propyzimide	400	Completed	99.9%
Pyrene	400	Completed	99.9%
Simetryn	400	Completed	99.9%
Tebuconazole	400	Completed	99.9%
Tebuthiuron	400	Completed	99.9%
Terbacil	400	Completed	99.9%
Terbutryn	400	Completed	99.9%
Tridemefon	400	Completed	99.9%
Trifluralin	400	Completed	99.9%
Vinclozalin	400	Completed	99.9%