



Berkey® PF-2 Fluoride and Arsenic Reduction Elements

PF-2 reduction elements are designed for use in conjunction with **Black Berkey®** water purification elements to adsorb the following unwanted elements found in drinking water.

- Fluoride
- Arsenic V and pre oxidized Arsenic III
- Other residual heavy metal ions

TECHNICAL INFORMATION:

FLUORIDE: Testing for fluoride was based on 20-30ppm of the ion in the influent aqueous solution at a flow rate of no more than 3 gpm per cubic foot of media. Results of < 1ppm of the fluoride ion in the effluent were typical for the media (>95% reduction). Under optimum conditions, effluent concentrations of less than 50 ppb were readily achieved (>99.75% reduction).

ARSENIC: This product uniquely targets the entire family of arsenic oxide anions as well as the arsenic cations.

REPLACEMENT:

Under normal conditions it is recommended that each set of two PF-2 elements be replaced after 1,000 gallons (*The Berkey Light™ is 2.5 gallons therefore the PF-2 filters should be replaced after 400 refills. If the system is refilled about one time per day, the PF-2's should be replaced annually, if the system is refilled about twice per day, the PF-2's should be replaced about every six months*).

NOTES:

- 1) Do not boil this element.
- 2) PF-2 elements reduce filtration flow rate by 15-20%.
- 3) The media used in the PF-2 filter elements contains high-grade activated aluminum oxide, which currently is the most efficient media available for extracting fluoride from water. Below are the results we obtained when testing the PF-2 elements (the water was not pre-filtered through the **Black Berkey®** elements). The reduction over time is due to additional residual process dust being washed free from the PF-2 elements as the system is used. To give a scale for comparison purposes we include test results from a national brand toothpaste and water boiled in an aluminum pan.

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|-----------------------------------------------------|---------------------|
| • National brand toothpaste | 52.878 ppm aluminum |
| • Water boiled in an aluminum pan for five minutes: | 2.791 ppm aluminum |
| • PF2 after conditioning (5 cycles): | .178 ppm aluminum |
| • PF2 after 10 Cycles: | .037 ppm aluminum |
| • PF2 after 20 Cycles: | .029 ppm aluminum |

While the above results indicate that the residual process dust adds a minute amount of aluminum to the water, the **Black Berkey®** purification elements reduce aluminum from the water. We tested water that naturally contained .320ppm aluminum and filtered it through the combination of the **Black Berkey®** and the post conditioned PF-2 filtration elements (5 cycles). The results showed a net reduction in aluminum contamination (Raw influent: .320ppm - Effluent after passing through the **Black Berkey®** and PF-2 elements: .232ppm). In other words the **Black Berkey®** elements removed more aluminum from the water than was added by the PF-2 elements.

Berkey® PF-2 ELEMENTS (Set of Two):	\$49.00
SIZE: Length 6", width 2.5" COLOR: WHITE	REPLACEMENT: 1,000

* Actual capacity is dependent on the presence of other competing contaminants in the source water. High levels of Fluoride, arsenic and heavy metals may reduce the capacity and efficiency of the elements.

IMPORTANT: FILTERS MUST BE CONDITIONED BEFORE USE.

1) Utilizing the washers and nuts from the **Black Berkey®** purification elements, replace **Black Berkey®** purification elements with the black pf-2 conditioning caps (*Place the large sealing washer over the threaded mount of the conditioning caps and place the threaded mount stems into the holes in the interior base of the upper chamber. Secure conditioning caps in the base of the chamber by screwing the wing nut onto the threaded mount). The conditioning caps are designed to speed up the conditioning process.*

2) With clean hands, remove blue caps on each end of each PF-2 filter and screw one filter onto each filter stem (*the flow arrow should point away from upper chamber*) giving **eight full revolutions**. Notes: 1) *Do not remove tape from the pressure release hole during conditioning.* 2) *Do not screw more than eight revolutions as this may damage the internal media screen.* When complete, seat upper chamber on top of the lower chamber. Fill upper reservoir. When the lower reservoir is full, discard the first batch of water, which contains process dust. Repeat the above four more times and discard subsequent batches of water. NOTE: This process can be sped up by doing the following: remove base from **Berkey Light™** and place system in sink. Prop open spigot with an object about 1 ½" square by placing the object between the spigot lever and the wall of the lower chamber. This prevents the water level from rising above the bottom of the PF-2 elements

INSTALLATION:

- 1) With ordinary dish soap rinse process dust from lower chamber
- 2) Remove PF-2 elements from the conditioning bases
- 3) Remove conditioning bases and re-install **Black Berkey®** water purification elements.
- 4) Remove tape from the pressure release holes on each PF-2 element and screw one PF-2 filter onto each **Black Berkey®** filter stem (*the flow arrow should point away from upper chamber*) giving no more than eight full revolutions.

Your filtration system is now ready for use.

Notes:

- 1) When lower chamber is full of water, the PF-2 filters will be immersed.
- 2) When water level in lower chamber rises above the bottom of the PF-2 elements, it is normal for small amounts of water to burp through pressure release hole at top of element.
- 3) The chamber in the **Berkey Light™** holds about 2.5 gallons. Most households use about one refill per day. We recommend that the **Berkey Light™** be filled at night and by morning the water from upper chamber should be filtered. Household requiring more water can speed up the flow rate by drawing off the purified water into a water pitcher or other container when water level in lower chamber rises above the outlet of the PF-2 elements. It is normal for the purification process to slow down significantly when water level in lower chamber rises above the outlet of the PF-2 elements.

GENERAL WARRANTY INFORMATION

New Millennium Concepts, Ltd. warrants this product to be free from defects in materials and workmanship for a period of 6 months from date of purchase. New Millennium Concepts, Ltd. will replace or repair any product that it deems is not properly functioning during the stated warranty period. Relief under this warranty is limited to the replacement or repair of defective materials or workmanship only. New Millennium Concepts, Ltd. shall not be held liable for incidental or consequential damage to personal property from, but not limited to, a defective unit, improper use, abuse, accident, or neglect, etc. No warranty will apply to units which have been used for purposes not intended, which have been altered so as, in the manufacturers judgement, to affect adversely its performance. This warranty is for the original retail purchaser only, and cannot be transferred. Repair or replacement of parts will be made upon delivery to manufacturer's plant or authorized service dealer at customer's expense. The laws of the State of Texas, USA, will govern any disputes regarding this warranty or claim made. This warranty which is given expressly in lieu of all warranties, expressed or implied, or merchantability and fitness for a particular purpose, constitutes the only warranty made by New Millennium Concepts, Ltd.

- *For maximum removal efficiency, maintain the water being treated between a PH level of 5 and 8. Actual capacity is dependent on the level of contamination of arsenic, fluoride and other competing heavy metal ions. Unusually high levels of these contaminants may reduce the capacity and efficiency of the elements.*