



THE DANGER OF COUNTERFEIT FILTERS

FAKE FILTERS, REAL PROBLEMS

**FILTER
IT OUT**

FAKE FILTERS, REAL PROBLEMS

Online sales of counterfeit refrigerator water filters are a rapidly growing problem. These counterfeit water filters are sold with misleading and fraudulent labeling, often including the illegal use of brand names, logos and product labels. Although marketers of these counterfeit filters say they meet recognized standards for effectiveness, in reality they are untested and fail to remove toxic substances from water as the label claims. Yet consumers — and even experts at U.S. Customs and Border Protection — have difficulty identifying counterfeit water filters.

Buying from a trusted source is the only way to ensure a water filter is legitimate and safe for your family and appliance.

Often, counterfeit filters make deceptive or faulty claims about fit and performance, but they lack the technologies and components for proper water filtration and appliance functionality. These filters may not fit properly, causing leaks and even introducing pollutants into the water your family drinks. More importantly, these false filters make performance claims about removing impurities from water when in fact, they fail to do so.

Counterfeit filters can:





- Fail to remove contaminants from your drinking water such as lead, mercury, herbicides, pesticides, asbestos and pharmaceuticals
- Add contaminants to your drinking water
- Leak and damage your refrigerator and kitchen
- Violate your refrigerator's warranty, costing you additional time and money for repairs

Three independent labs conducted studies to measure counterfeit water filters’ performance. The results reveal the hidden danger of counterfeit water filters.

Manufacturers, including LG, Electrolux, Samsung, Whirlpool, GE Appliances and Sub-Zero provided the Association of Home Appliance Manufactures (AHAM) with known counterfeit filters that were purchased online through popular websites.

We tested for performance and the presence of contaminants

AHAM used independent testing to support its hypothesis that counterfeit filters were dangerous. The data has been presented to the U.S. Consumer Product Safety Commission and U.S. Customs and Border Protection (CBP), and is being used to raise awareness with consumers.

	Lead Testing	Cyst Testing	Extraction Testing
Requirements to meet U.S. standards	NSF/ANSI 53 Clause 7.4.3	NSF/ANSI 53 Clause 7.3.2	NSF/ANSI 42/53 Clause 4.1
Methodology	Compare filter performance against certified standard	Compare filter performance against certified standard	Identify any extracted organic or inorganic compounds <i>[Note: Testing has not been finalized; Results based on partial data]</i>
Testing Organization	NSF International & The International Association of Plumbing and Mechanical Officials (IAPMO)	NSF International	Water Quality Association (WQA)
	 		

COUNTERFEIT FILTERS DON'T GET THE JOB DONE

LEAD TEST

6.5 PH lead test pursuant to NSF/ANSI 53, clause 7.4.3.

Requirement:

NSF/ANSI standard requires lead reductions to less than 10 parts per billion (ppb).

Methodology:

- The filters were flushed with 1.5 gallons of water prior to testing. They were tested at the appliance manufacturer's specified flow rate on their representative cycle (for example 50 percent on, 50 percent off cycle).
- Samples were taken at 50, 100, 150, 180 and 200 percent of specified capacity, which is a requirement for genuine filters per NSF/ANSI 53.
- 100% of stated capacity is equal to 6 months.
- The filters were tested to 200 percent of the stated capacity since consumers rarely replace their filter in a timely manner, especially when they don't have an indicator on their refrigerator.
- A typical filter capacity range is from 350 to 700 gallons of water. The water that is run through the filters (influent) had an elevated level of lead in it, ranging from 140 to 189 ppb.

FIGURE 1

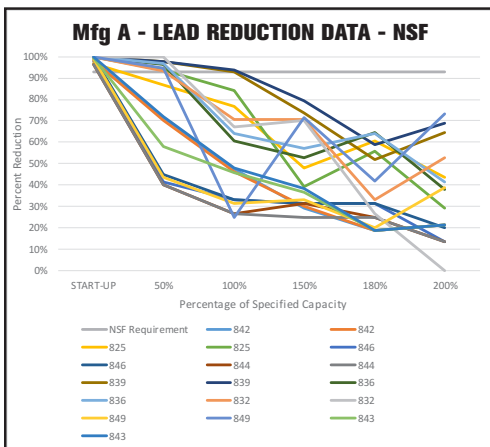


FIGURE 2

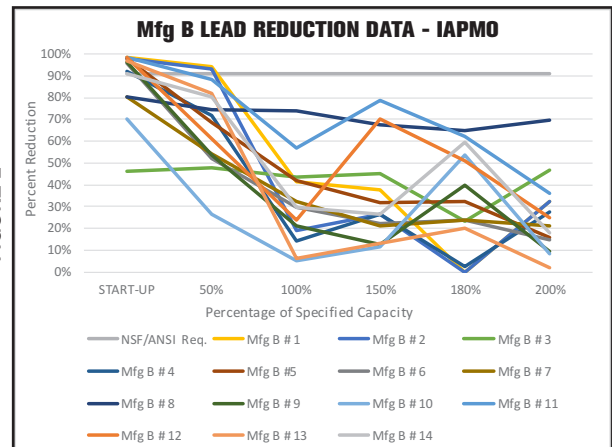
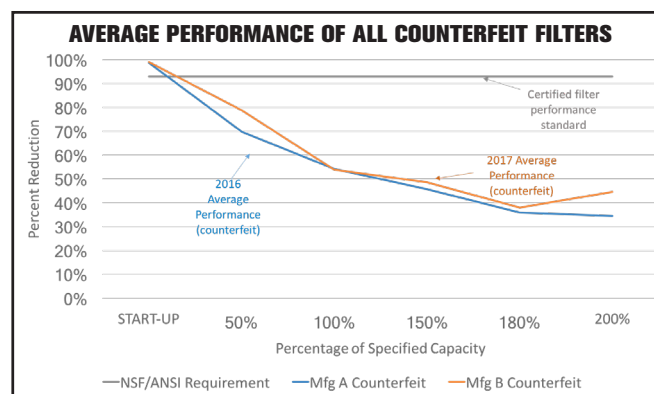


FIGURE 3



Findings:

- Of the 32 filters tested, 100% failed to meet NSF/ANSI standards to two times the life cycle (200% of the rated or specified capacity).
- Two counterfeit filters performed to the 100% mark before failing.
- Each of these filters are labeled with the promise of filtering harmful lead out of consumers' household water.
- Two counterfeit filters performed to the 50% mark before failing.
- Two studies, by two different labs, of two different manufacturers had the same result. (Figure 3)
- Every counterfeit filter tested failed to meet NSF/ANSI standards of less than 10 parts per billion for lead reduction.
- These filters were purchased from widely used websites. Each one — in addition to being counterfeit — made promises to consumers to remove lead from household water per NSF/ANSI 53. However, consumers who purchase these counterfeit filters are not receiving the health and safety benefits promised.

CYST TEST:

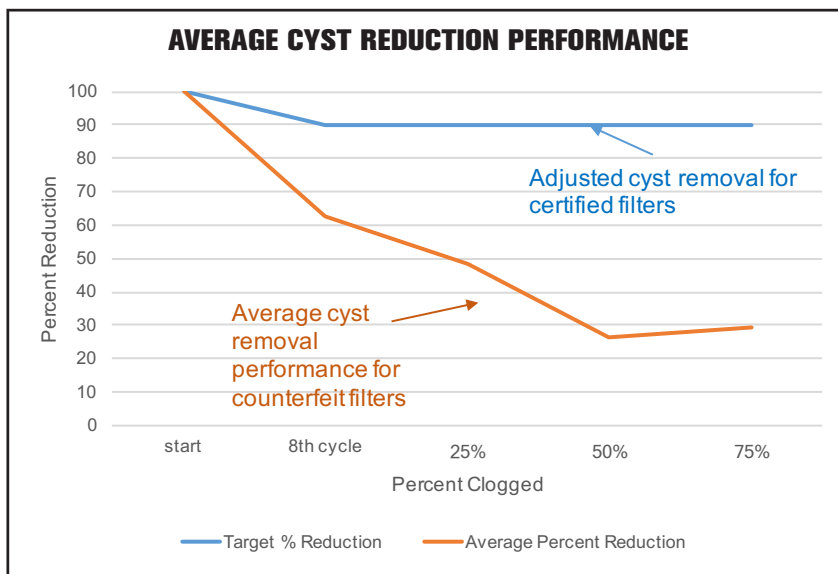
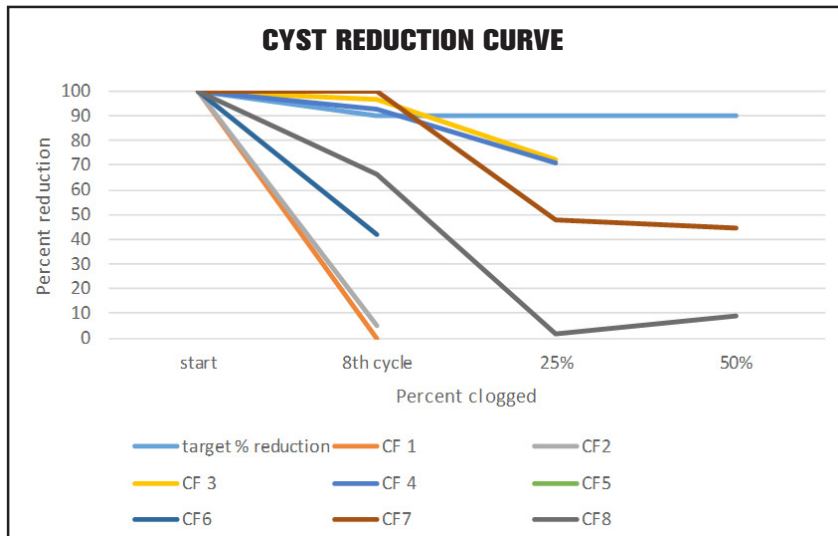
Cyst test pursuant to NSF/ANSI 53 clause 7.3.2

Requirement:

99.95 percent reduction in cysts, yet a lower evaluation point of 90 percent reduction was evaluated to provide a reasonable margin of error.

Methodology:

- Eight filters were tested.
- The test requirement of the system is to reduce the number of live cryptosporidium parvum oocysts from an influent challenge of at least 50,000 (5×10^4) oocysts per liter by at least 99.95 percent at every individual unit effluent sample point.
- The initial flow rate was tested at the start of the test, the 8th cycle, and at the 25 and 50 percent reductions in flowrate.
- Since the water had dust in addition to the oocysts, the filters are supposed to clog.
- Testing on one filter was stopped after the 8th cycle due to clogging; however, this filter had also already failed to remove 90 percent of the oocysts.



Findings:

- No counterfeit filters met standards for removing cysts through the 75% clogging rate.
- Three filters performed through the 8th cycle, but testing stopped after they became clogged.
- Every filter failed to remove live cysts by the 25% clogging point.
- CF5 was stopped at the 8th cycle because its companion filter had clogged. It is not known if it would have continued to perform or fail.
- No counterfeit filter removed live cysts to the standards of NSF/ANSI 53, despite lowering the testing threshold to 90% removal.
- The labeling from the original manufacturer that was fraudulently copied onto these counterfeits told consumers these filters were certified to remove cysts.
- Consumers who purchased these filters are likely not receiving the promised health and safety benefits.

EXTRACTION TEST:

Extraction test per NSF/ANSI 42/53 4.1 (evaluates materials in contact with drinking water)

Requirement:

Filters should not introduce contaminants into clean water.

Methodology:

The test assessed 159 different contaminants, including:

- **Volatile Organic Compounds (91)**
- **Semi-Volatile Organics (PNA – 17)**
- **Other Semi-Volatile Organics (32)**
- **Regulated Metals (11)**
- **Nitrosamines (8)**

- All filters were flushed with 3 gallons of exposure water according to the manufacturer's conditioning instructions.
- After conditioning, the outlets of the filters were closed so they could hold the exposure water for 24 hours. Filters were exposed for three separate 24-hour periods. Samples were collected after each period, with three samples for the final round.
- A portion of the exposure water was collected through a spare filter head at the same time as the filters were filled to use as the blank for comparison.

Findings:

- A total of 46 filters were tested. In total, 10 separate compounds were introduced into clean sample water by counterfeit filters that were over the total allowable concentration. Multiple sample groups were tested of each of the filter styles and 33-40% of sample water had contaminants.



Findings cont'd:

- At the start of the test of Manufacturer E, the water was free of contaminants. Fourteen counterfeit filters were sorted into three groups for testing, and of those, one of the groups showed contaminants — meaning the counterfeit filters actually added contaminants to the water.
- When 11 counterfeit filters from Manufacturer F were tested, they were sorted into three groups. One of these groups showed contaminants, meaning contaminants were added to the water.
- When 21 counterfeit filters from Manufacturer G were tested, in 10 different groups, four of the groups had contaminants. In one of these groups, the water had arsenic levels that exceeded the total allowable limit, which is required to be less than 5 ppb. The arsenic extraction exposure level was set under a settlement agreement pursuant to the California Safe Drinking Water and Toxic Enforcement Act of 1986.
- Fraudulent labeling assured consumers that these filters were certified not to leach contaminants into household water above acceptable levels. Unlike food grade materials used in certified filters that are tested and approved, these counterfeits likely used cheaper, non-food grade materials, which are known to leach these kinds of chemicals.



COUNTERFEITS POSE A PUBLIC HEALTH CONCERN

Water may look, smell or taste fine, but human senses cannot always detect microbial and organic contaminants lurking in the water that can seriously harm our health and wellbeing.

Of the randomly selected and tested counterfeit filters:

- Counterfeit filters failed to remove harmful lead from household water.
- Counterfeit filters failed to remove live cysts from household water.
- Some counterfeit filters introduced harmful compounds into household water.

[Note: based on partial data]

ONLY BUY FILTERS FROM TRUSTED SOURCES



With so much uncertainty about the quality of water filters available online, only choose one that is trusted and sold by a certified genuine source that stands behind its products.

For more information and a full list of trusted genuine sources, visit FilterItOut.org.