

BACKCOUNTRY TREATMENT METHOD MATRIX

Method	Bacteria & Protozoa (<i>Giardia</i> , <i>E. Coli</i>)	Viruses (<i>Hepatitis</i> , <i>Norovirus</i>)	Wait Time	Pros & Cons
Rolling Boil	✓ 100% Effective	✓ 100% Effective	Immediate (After 1 min boil)	Pros: Most reliable. Works in turbid water. Cons: Uses fuel, requires cooling time.
Squeeze Filter (0.1 Micron Hollow Fiber)	✓ 99.99% Effective	✗ Ineffective (Pores too large)	Instant	Pros: Lightweight, fast flow rate. Cons: Can freeze/crack in winter; clogs in silty water.
Chemical Drops (Aquatabs / Chlorine Dioxide)	✓ 99.99% Effective	✓ 100% Effective	30 mins – 4 hrs (4 hrs for <i>Cryptosporidium</i>)	Pros: Ultralight backup, zero weight. Cons: Chemical taste, long wait times in cold water.
UV Purifier (SteriPEN)	✓ 99.99% Effective	✓ 100% Effective	90 seconds / Liter	Pros: Very fast, kills viruses. Cons: Requires batteries; ineffective in murky/cloudy water.

WINTER WATER FILTER WARNING

NEVER let hollow-fiber filters freeze!

If water inside internal capillary tubes freezes, ice expands and cracks microscopic fibers. This renders the filter useless without visible damage.

Winter Rule: Sleep with your filter inside your sleeping bag at night and carry it in an inside jacket pocket during freezing day hikes.

WATER SOURCE SELECTION TIPS

- **Choose Fast-Flowing Water:** Avoid stagnant ponds or still shoreline water.
- **Upstream Inspection:** Collect water upstream from trail crossings or livestock pastures.
- **Pre-Filter Silty Water:** Filter cloudy water through a bandana or coffee filter first to avoid clogging micro-filters.