



**Definitions:**

**Filters, or microfilters,** strain objects from the water, and the general standard for backcountry filters is a pore size of 0.2 microns or smaller to remove protozoans like Giardia lamblia and Cryptosporidium.

**Purifiers,** which must pass Environmental Protection Agency testing to be licensed for sale in this country, are essentially a filter with an iodine element to kill viruses and a carbon element to remove the iodine taste. The carbon also reduces organic chemical contaminants like pesticides, herbicides, and chlorine, as well as heavy metals.

**Equipment** is changing so rapidly, and models come and go so quickly, that an equipment comparison chart cannot be readily maintained. Visit your local outfitter, or refer to the annual March Edition of Backpacker Magazine (The Gear Guide) available on newsstands each February.

**Micron:** A micron = 1/25000-inch or, more exactly, 0.0000394-inch.

A magazine ‘.’ = 500-600 microns

A human hair = 80 microns

**Iodine** alone will not kill Cryptosporidium, only boiling or filtering will do that

**When looking for equipment, compare:**

**Filters - Purifiers:**

Weight.

Ease of changing cartridges, prefilters, etc.

Size for packing.

How many gallons it will filter before it needs cleaning or a replacement cartridge replacement ?

Cost.

Cost and availability of replacement cartridges (if so equipped).

How easy it is to clean, and can it be cleaned ?

What indication does it give you that it needs cleaning or a new cartridge ?

Does it have a gross pre-filter for large sediment ?

Does it also have a smaller pre-filter ?

Does it filter organic chemicals (pesticides, herbicides, diesel fuel, fertilizers, strip mine runoff) ?

Does the filter output attach to various water containers (wide mouth water bottle, soda bottle, and to water bladders like the Platypus ® and Camelbak ®), or do you need four hands to hold it and the canteen and the in / out tubes, and etc.?

Does it have an easy action pump that's comfortable to use ?

Ergonomically acceptable in use ?

Does it use iodine ? *If you are pregnant or nursing, are allergic to sea food or iodine, or have a thyroid problem, you should check with your doctor **before** using an iodine-based filter, or tablets containing iodine !!*

Can you readily protect it in freezing weather?

When you are finished filtering your water, how easy is it to pack the unit away so that the intake and outlet hoses are kept separate to prevent the inlet hose & pre-filter from contaminating the outlet hose ?

What is its packing size-shape-breakability in your pack ?

What is the actual filtering capability (for utmost safety it should filter down to 0.2-microns) ?

How many liters/minute will it filter, or how many minutes does it take to filter one-liter?

**Tablets:**

Do they kill bacteria, protozoa (including Giardia Lamblia and Cryptosporidium), viruses?

How long does it take for them to work in what conditions?

How much water can you treat per tablet?

When do they need to be replaced?

Do they contain iodine?

**Reference**

Refer to the TATC Educational handout titled: "WATER - THE BASIC ESSENTIALS."