

## No. 267: How to Clean That Radio

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What the heck is he writing about now? Well folks, with the current Coronavirus problem, what do you use to clean up a radio you bought at a swapfest? What do you use to clean that chassis you are rebuilding? What do you use to clean the resistors, capacitors and other parts for that fresh project you are about to construct? Here are some basic guidelines recently outlined by Consumer Reports (June 2020), based upon scientific studies they have reviewed recently, with a few bits thrown in by your author (I was trained as a biomedical scientist and dealt with killing bacteria and viruses on cadavers as part of my job).

**Soap and water**, of course, for our hands before and after working with devices with unknown contamination. Soap and water breaks the protective envelope around the virus quickly and effectively, as we have all heard. It cannot really “kill” a virus because they are not living entities, so we more accurately say it inactivates them and prevents them from infecting a cell. But, we can be sloppy and say it “kills” them. Make sure it is at least a 17-second rinse (recently upped to 20 seconds just to make it to the nearest round number, but Stan remembers experiments done over 50 years ago using radioactive markers on the hands of volunteers that showed a 17-second rinse after a soap and water wash to be effective). Don’t use soap and water and a long rinse for intact radio equipment, though!

**Bleach.** A half cup of bleach in a gallon of water (or 4 teaspoons per quart of water) makes a solution that will definitely kill viruses and bacteria (embalmers use bleach solution plus other additives to decontaminate the exterior of bodies prior to starting the embalming process, so that tells you something). Use gloves to protect your skin when preparing the solution. Make it fresh every few days because the chlorine gas in bleach will evaporate with time (that is the smell you smell – chlorine gas, and we humans can detect as little as 0.1-0.3 parts per million in air). Bleach can corrode metal with time and damage some plastic, so it needs to be water-rinsed a few minutes after application to whatever you are disinfecting. Keep all that in mind when treating electronic gadgets or components. Not the best choice for radios or their parts.

**Hydrogen peroxide.** Household hydrogen peroxide (3% in water) will “kill” almost all viruses in 6-8 minutes. Use a spray bottle and let it sit for awhile before drying with towels and vigorous air streams. It won’t corrode metal surfaces, and it decomposes into simple oxygen and water. A caution. It is in a light proof bottle for a reason. Light will decompose hydrogen peroxide, so put fresh solution in that spray bottle you will use today. And it decomposes spontaneously with time, so make sure to follow the use-by date on the container. Don’t bother using that bottle in your bathroom cabinet that you purchased 10 years ago! So, hydrogen peroxide is a pretty good candidate for making old radios safer.

**Alcohol.** Specifically, 70% rubbing alcohol. Vodka (80 proof or 40%) or other drinks will not work because they do not contain enough alcohol! Don’t ask me why, but even 95% alcohol is less effective than 70%! Stick with plain, inexpensive 70% isopropyl (“rubbing alcohol”) from your drugstore. It is pretty safe for all surfaces, except it may discolor

some plastics. Spray it on from a spray bottle or pour it on (keep away from flames). But mop it up and dry the equipment with a fan to make it evaporate after a few minutes have gone by.

**Vinegar.** Said to be pretty good for cleaning windows. But forget it in this day and age, since it has not been shown to be effective against any viruses.

**Wipes.** There are a bunch of brands for sale. The one I use and trust is Clorox Disinfecting Wipes (bleach-free), which they claim will kill 99.9% of viruses and bacteria, including human Coronavirus. OK for most hard surfaces (not for skin, unfinished wood, foods, worn surfaces). As always, read the cautions and directions on the package.

So the upshot is, hydrogen peroxide (3%) and isopropyl alcohol (rubbing alcohol, 70%) look like pretty good candidates. Keep safe, and Happy Computing!