

Build Your Own Colloidal Silver Generator

Several years ago, I was at my local health food store picking up some vitamins and I decided to browse the store to see what new and exciting scientific breakthroughs that modern nutrition has recently put on the shelves. I'd already seen all the amino acid protein supplements for the body builders and the latest herbal remedies that lets nature do what modern science can't. I browsed down one isle and noticed some flyers on top of the shelf. Since I don't normally see flyers in health food stores, I was curious enough to pick one up and read it. The flyer was about 'colloidal silver', the antibiotic of choice at the turn of the twentieth century.

WHAT IS COLLOIDAL SILVER

Colloidal silver is a suspension of silver ions in distilled water. It is produced by passing a DC current through two electrodes immersed in distilled water. As the current flows from the + side attached to a silver electrode to the - side electrode (silver or stainless steel) silver begins to release as positively charged ions into the solution. Since the ions are charged and like charges repel, the ions stay detached from each other. As time goes on, more and more ions become suspended in solution. As this occurs, the conductivity and current will begin to rise. It is this property that allows us to design circuitry which will monitor this current and alarm at a threshold that will allow you to produce your own colloidal silver for pennies per dose.

A LITTLE BIT OF HISTORY

Colloidal silver has been around most of this century. Back in the earliest part of the 1900's, it was considered the best choice for pneumonia. Unlike present day antibiotics, colloidal silver has the ability to kill viruses as well as fungus and bacteria. I'm not going to go into detail about the history or properties of this product. Due to the prohibitively high prices of silver in the early 1900's, modern medicine had the financial incentive to develop modern day antibiotics. Unfortunately, modern day antibiotics have produced strains of bacteria that are resistant to them. In other words, the products invented by the pharmaceutical companies don't do the trick anymore! So now what do you do ? Well, keep reading and we'll show you how to make your own colloidal silver.

A SIMPLE DESIGN

Although this is the age of microcontroller based engineering for nearly all applications, it ain't always so. This is a perfect example of that. Keep It Simple is the basis of all good design, and if you can use a commonly available low cost component, then by all means, use it.

We've build a current sensing unit based on the good ole' 555 timer chip. The inside of the chip consists of a pair of voltage comparators, a RS flip flop, and a power transistor to discharge the capacitor. Normally, the output turns ON whenever the TRIGGER drops below $1/3 V_{cc}$ voltage and OFF when the THRESHOLD exceeds $2/3 V_{cc}$ voltage. What we've done is use the THRESHOLD comparator as a level detect circuit and then use an external resistor and a 3.9 V zener diode hooked up to the CONTROL VOLTAGE terminal to give a LOWER reference voltage. By monitoring the RETURN CURRENT from the output terminal via VOLTAGE DROP accross a resistor, a HIGHLY REPEATABLE current trip circuit can be built easily and inexpensively. The 555 can supply as much as 100 ma. We've even included some Radio Shack part #'s on the schematic. Now, let's go through the actual process and equipment you'll need to get.

THE EQUIPMENT

You're going to need to get some GOOD QUALITY distilled water. Here in Southern California, we have Rite-Aid pharmacies every few blocks. I'm not kidding ! There must be dozens of them here in Bakersfield. They sell distilled water for 99 cents a gallon. I have tested it with a TDS (total disolved solids) pocket analyzer and it always reads 0.0 PPM. You might want to consider the purchase of such a device to help YOU select the purest distilled water in your area. These LCD devices are ranged 0-999 PPM and are available from Hanna Instruments as TDS 1 for \$ 14.90 plus shipping and handling. You can contact them at <http://hannainst.com> for more information. Peter Smith from their technical department states that what you read is a true reading of colloidal silver concentration with a full scale accuracy of + 2 %. That's pretty good for a handheld digital instrument for \$ 15.00 !

Now that we've got the water taken care of, let's look at how your going to store the product once you make it. I would STRONGLY recommend using amber glass bottles. They are available from laboratory supply houses or pharmacies. Once again, I went to Rite-Aid and got 2 oz. amber glass bottles for 50 cents a piece. Remember, what you are going to make is an ionically charged suspension and ultraviolet light from sunlight and other sources will discharge the particles, which, in turn, will allow them to create large silver particles instead of the ionic molecues that we made in the first place.

The rest is available anywhere. Get a small PLASTIC funnel, some coffee filters, and some plain paper towels. A 3 " or so diameter glass container ~ 4 " tall is also needed. I use a MASON jar from my local food store. Be sure to clean it out thoroughly and rinse it many, many times to insure there's no food or soap residue left inside. Dry it thoroughly and we should be all set.

LET'S DO IT

Fill your clean jar to within ½ “ of the top of the jar with pure distilled water. Place the jar in a microwave oven and set it to HIGH for 2 ½ minutes. Carefully remove the jar with hot pad holders or gloves because it will be HOT. Somewhere around 150 degrees Fahrenheit. Bend your 6 “ silver wires with a short hook on one end. This will allow you to place them over the top of the jar; directly across from each other. Make sure the wires go straight down the inside of the jar. This insures that the silver will be removed equally along the entire length.

Place the silver electrodes in the jar and hook up the wiring to the control circuitry. Push the RESET pushbutton and current will begin to flow. Nothing will appear to happen for 15-30 minutes, depending on ambient temperature. Eventually, you will begin to notice the electrode attached to the + side will start turning black. As current flows through water, it becomes oxygen and hydrogen atoms; the oxygen stays near the anode (+ side) and the hydrogen stays near the cathode (- side) . A small amount of the silver will react with the oxygen to form silver oxide, which is the black tarnish you see. You may notice microscopic bubbles on each electrode and these gases are from electrolysis of the water itself.

Since silver doesn't react with hydrogen, no compounds are formed here. However, when some of the silver ions are attracted to the cathode, they can lose their charge and 'plate out' as 'silver sludge' on the cathode. What we normally do is clean the electrodes by removing them from the process and pulling them through the paper towels that are tightly wrapped around them. I think they call this work, but it's the only safe way to remove the tarnish and sludge. You don't want to use scotchbrite, steel wool, or any type of cleanser because it can leave a residue in the pores of the electrodes which can later become part of your product. Just remember, if you follow these directions, you'll be making a pure product similar to what you can buy but at 3-5 % of the cost.

Clean the electrodes at ~ 15 minute intervals once the tarnish is noticeable. We have found that the total process usually takes 1 hour and yields 5 PPM colloidal silver. Near the end of the cycle, a sediment will be noticeable at the bottom of the jar. When the proper conductivity has been determined to be reached either by the test circuit or the TDS 1 meter, disconnect the circuitry and SLOWLY remove the electrodes. SLOWLY pour the product through several coffee filters which line your small funnel into the amber glass bottle. I find that a batch made in this way yields 5-6 bottles. The product itself will be slightly amber in color. Once it sits for several hours, pour some out in a PLASTIC or GLASS container, and it will have turned a golden amber color.

It's a good idea not to let anything conductive come into contact with the colloidal silver once you make it. Any contact will bleed off some of the charge and clump together as molecules instead of ions. We've already covered the uses on the website. Personally, I take 1 teaspoon a day, and although I can't recommend dosages or usages, there's lots of info on the web that you can educate yourself with.

[Http://home.att.net/~dennis.shepard/](http://home.att.net/~dennis.shepard/)

Now, here's what we're going to do to make it convenient for you. If you get the TDS 1, you can probably get away with using 3 standard 9 VDC batteries wired in series going to the electrodes and not use the circuitry if you're going to stay right there and watch the WHOLE TIME. Don't let the process go too long or a milky residue will form that won't filter out. That's one of the main reasons to carefully remove the electrodes periodically and clean them.

The currents listed on the schematic are consistently accurate for determining the concentration. And please don't just stick the leads of a Ohmmeter in the solution to determine conductivity that way. Ohmmeters produce current and we don't want the metal on the probes to become part of the solution. And in case common sense doesn't tell you, you shouldn't even touch the part of the silver electrode that is in solution. Your fingers produce oils which could contaminate the silver. Just make sure you wipe everything down real good and you'll be OK.

Since Radio Shack already carries all the parts, it would seem pointless for us to offer you something you can easily get around the corner. However, we can offer you two 6" # 14 AWG wire electrodes made of 99.99 % pure silver which we've purchased from a major jewelry wholesaler for only \$ 10.00 including shipping and handling. The electrodes should last you a very long time. I've made 5-6 gallons from the electrodes I've got and I can't see any reduction in size. You should be able to get years of use for your own personal family needs. We are very happy to be able to offer you this exceptional quality and price. And once you make some, please be sure to share it with your friends, too. The gift of good health is a good gift indeed and everyone should benefit from that!

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