

This project is at your own risk. Metal Detecting In The USA will not be held responsible for any damage in case you burn your house down or any injuries caused by this project. Heed the warnings in RED.

Electrolysis is a very popular way of cleaning coins. It is the fast lane of coin cleaning and what can take months of soaking in olive oil can be done in seconds with electrolysis. But, with all of this power comes the risk of ruining a good coin. Electrolysis will strip away the patina of a coin. Sometimes the patina is what holds the surface of the coin together. Any holes, pits, and deep scratches will readily be visible once a coin goes through electrolysis. It is best advised to keep a very close watch on the coin or object while going through the cleaning process.

There are however, safety precautions that must be observed as it is an electrical device. Water and electricity do not mix so keep the power adapter away from any fluids. Do not let the clip ends touch or they could short out your adapter. Work in a well ventilated area.

Find an old power adapter or transformer with a voltage around 6 - 12 volts D.C. output. Higher voltages just increase the possibility for electrocution and does not speed up the cleaning process. Cut off the plug end, separate the two wires and strip the wiring down to the metal. You will need to solder or attach the wires to alligator clips. The clips can be purchased at Radio Shack or an auto parts store. File the end of one of the clips smooth to prevent damage to the coin.



The larger clip is the positive (anode) side and will not come in contact with the solution.



File the ends smooth so they do not harm your coins.

This is a charger used for an older White's metal detector.

One of the clips will attach to the coin and one will be used as the anode. The negative side of the adapter will clip onto the coin and the positive clip will attach to the anode. You do have to consider what you use for the anode. Carbon or graphite will eliminate any issue of plating. Aluminum will not plate out onto your coin and would be a very good choice. Always test out on a junk coin first to be sure. A spoon will work, but make sure it is not stainless steel. A thick piece of lead (graphite) for a mechanical pencil works just fine.

Do not use stainless steel as an anode during electrolysis. Why? Because it will produce chromates in your electrolyte solution. If your solution turns yellow, that is a sign of chromates. Stainless steel contains chromium and the solution can cause burns and even cancer. It is illegal to dispose of this solution onto the ground or down the drain. It needs to be dried and the residue placed in sealed containers and disposed at a hazardous collection site.

There are two ways to determine positive and negative on your power adapter. A multi-meter would be the first choice. If you do not have one, simply make your solution of water and baking soda or vinegar and baking soda in a small bowl and place both clips in the solution (do not allow them to touch). The one that "fizzes" is the negative side and it will be placed on the coin. Remember, electricity always flows from positive to negative. Use enough vinegar or water to cover the object for cleaning. A couple tablespoons of baking soda should be sufficient. The baking soda is used for the electricity to flow through the water (more efficiently). If you use salt, know that it will break down into sodium (harmless) and chloride gas. **The chloride gas fumes are harmful.** If you use salt make sure it is in a well ventilated area.



On my setup I keep the anode clip out of the water and just allow the metal into the solution. Eventually, the clip that attaches to the coin will degrade over time and will have to be replaced. Place the anode into the solution and connect your clip to it. Connect the negative clip to the coin and place in the solution. Do not allow them to touch. Place them close together for the best reaction. Further apart adds to the cleaning time. Plug in the adapter and the coin or object should start to fizz (cleaning). Experiment with time and check every few minutes. When the solution gets dirty replace it.

NOTE: Do not use the same solution for silver, copper and nickel coins.

Do not leave the power adapter plugged in too long. It can get very hot. Check your adapter after 5 minutes to determine if you can keep cleaning or need to unplug to allow it to cool down.

The silver and copper coins will turn black during the process. They will have to be further cleaned with a toothbrush and soap and water. Stubborn deposits may have to be picked off with a small knife or pick (toothpicks work good).

Remember: Do not clean your coins.



Before electrolysis.



After electrolysis.

A before and after shot of a dirty clad quarter. After just a few minutes in electrolysis all it needed was a short scrubbing and this is the result. Clad coins get that "rusty" appearance to them that is extremely hard to remove by hand scrubbing. Electrolysis made quick work of it.

This is just to illustrate the effects of electrolysis. I would not clean clad coins with this method. Clad coins go in the rock tumbler.