

# The TupperTank<sup>®</sup>

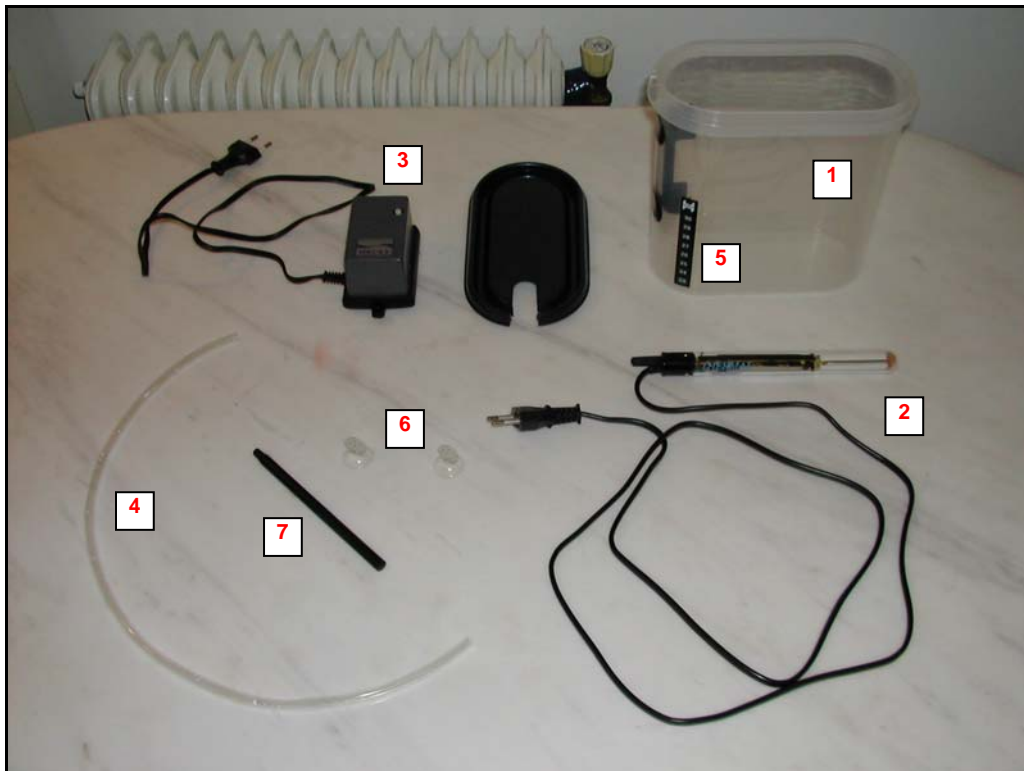
## A Cheap and Easy to Make Hobby Etching Tank

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After having etched some PCBs using the traditional etching bath submerged in hot water (which I had to renew every five minutes because it went cold) and agitating the enchant by hand (well, not literally, I used a wooden stick ☺ ), it finally got on my nerves and I decided to go for something more 'professional', or at least more 'decent'.

I went to a local kitchen store and bought a tall plastic TupperWare-like container, and then went to a pet-shop where I got a aquarium heater, an air-pump, some flexible tubing, a stick-on thermometer and two small cups. Then I also found a used pen (BIC-like) at home, and started the whole procedure as follows :



## Parts list

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1. A tall plastic container (choose whatever size suits you best, I got a rather small one but it is ok for the PCB sizes I make).
2. An aquarium heater (I got 25W but you may go for more if you choose a larger container).
3. An air-pump (again, I bought the cheapest one I could find !).
4. Flexible tubing (about 50 cm).
5. A stick-on thermometer.
6. Two small cups to hold the bubbler.
7. An empty pen (BIC-like) with one closed end, preferably.

### STEP ONE

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Stick the thermometer on the container and place the heater base (usually two cups) on the left side of the container. Easy huh ?

### STEP TWO

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Prepare the bubbler. Use your favourite drill (yes, the one that you drill PCB holes with !) and fill the pen body (remove the ink tube of course first) with holes. I



drilled one hole per cm of pen length in the longitudinal direction and replicated this pattern four times along the circumference of the pen.



Finally, connect the one end of the flexible tubing to the pen. Make sure that the other end of the pen is sealed. If not, find a way to seal it so that no air can come out.

### STEP THREE

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Place the bubbler to the bottom of the container and secure it with the two small cups. Connect the other end of the tubing to your air-pump.

### STEP FOUR

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Place the heater on its base and cut the necessary openings on the lid so it can close without blocking the heater and the flexible tubing. Yes, you have finished ! Fill with water, pour in your favorite enchant (ferric chloride of ammonium persulphate) and ENJOY PCBing !!! ☺

Easy stuff ! I know that mine is small but you can buy a larger one if you like !



You can put the pump on the top of the container to avoid corrosive liquids enter the device and generally keep things cleaner.

