How to Etch a PCB

By dannewoo (/member/dannewoo/) in Technology (/technology/) > Electronics (/technology/electronics/) 125,616 79 13

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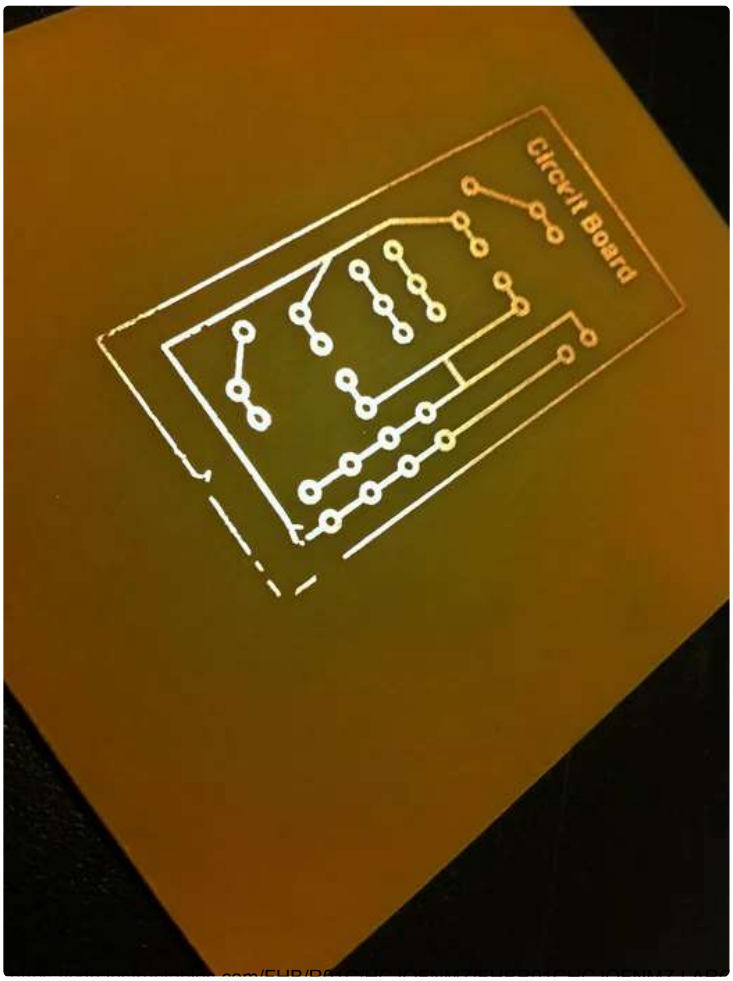

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All materials used in this instructable came from the PCB Fab-In-A-Box Starter Kit which can be purchase here (http://www.pcbfx.com/main_site/pages/products/starter_kit.html). You will also need to purchase some PCB Etching Solution.

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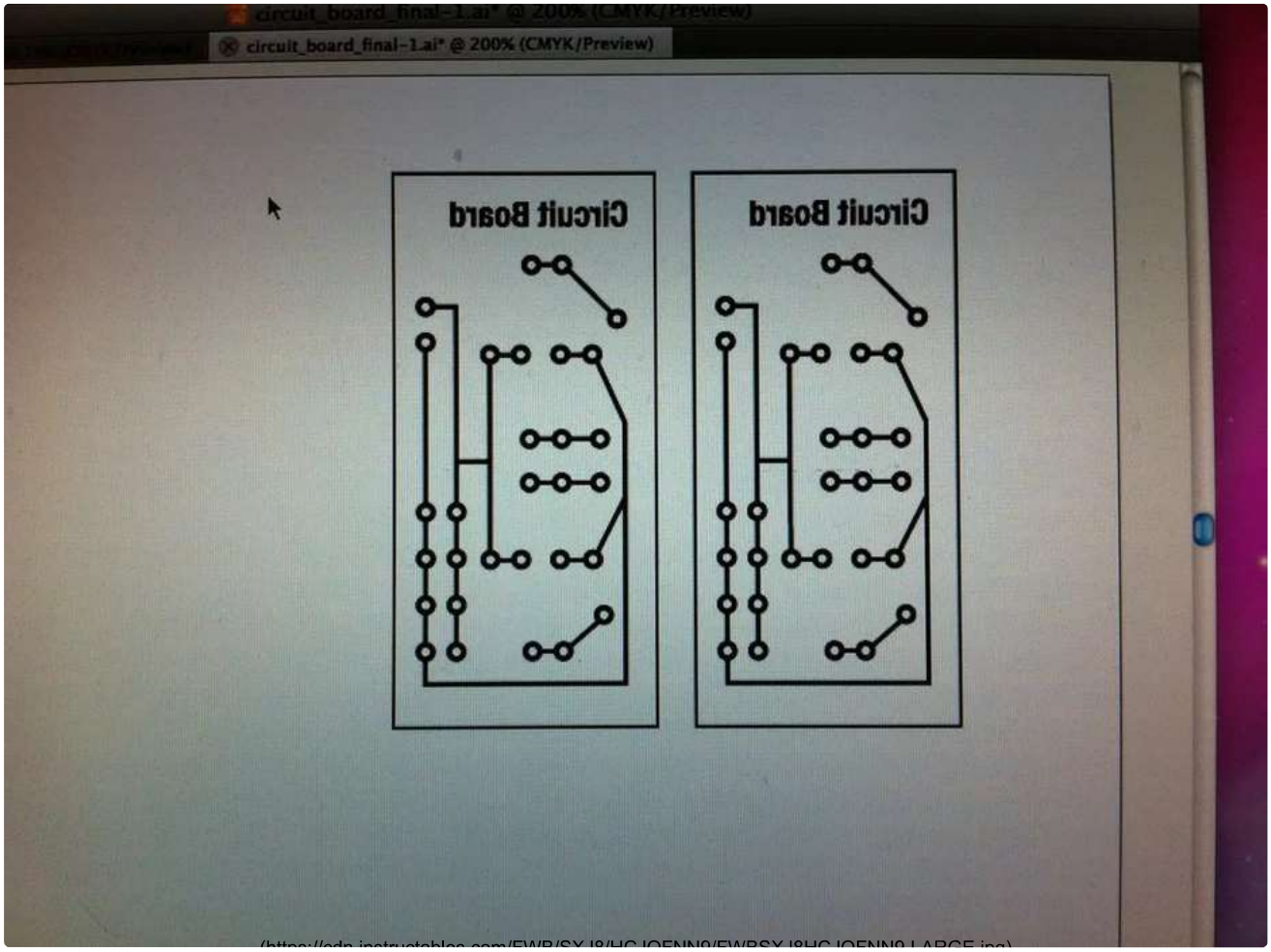
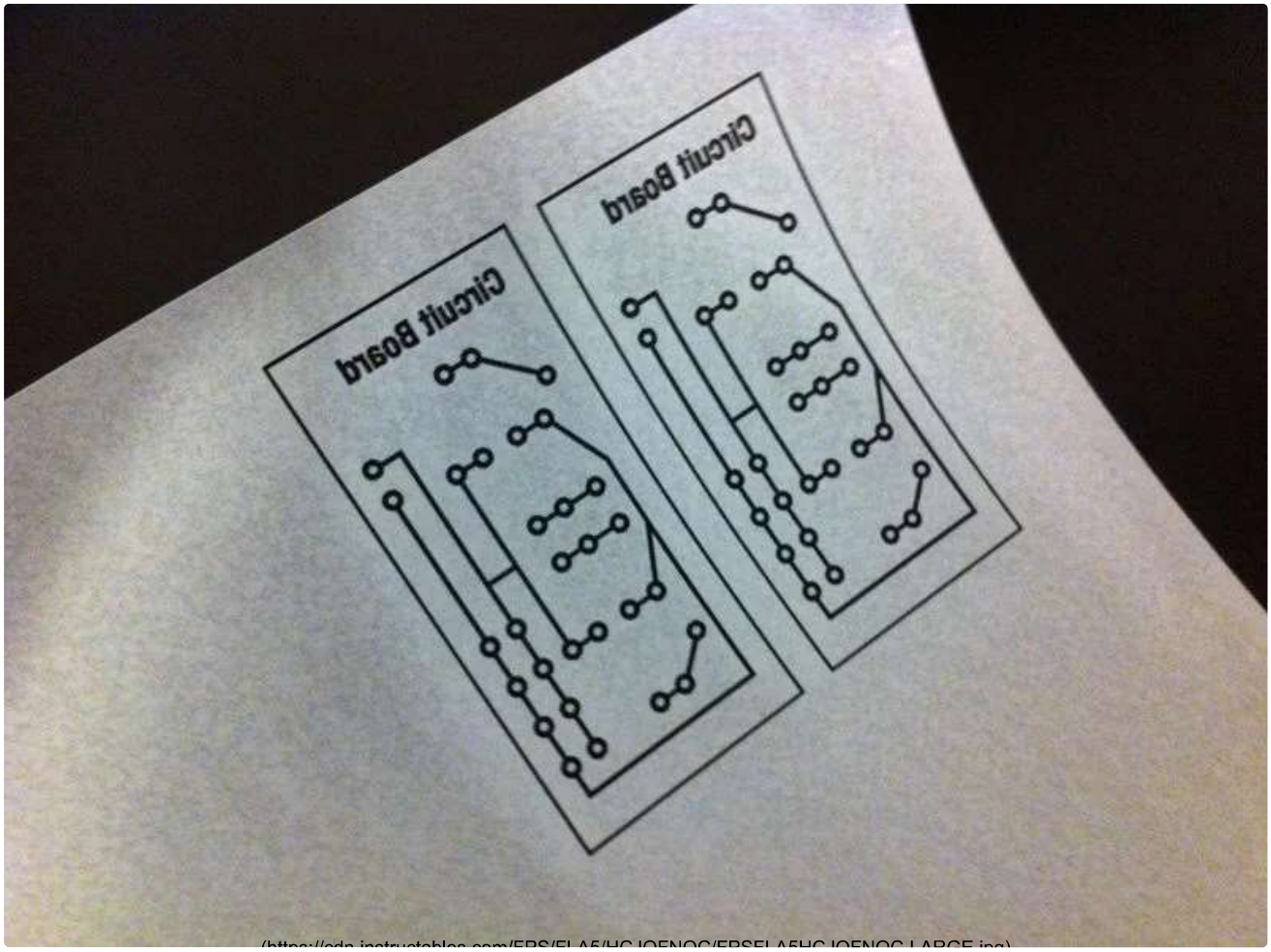
Step 1: Design



First you need to design the board using a service like Eagle, Fritzing or you can even just use Adobe Illustrator if you know exactly what you want. And remember to flip the design once you have it complete before you print it out.

Step 2: Print Out the Design Onto the Shiny Side of the Transfer Paper



(https://cdn.instructables.com/FBS/FLA5/HCJOFNQC/FBSFLA5HCJOFNQC.LARGE.jpg)

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Step 3: Sand the Copper Plate So There Is a Rough Surface for the Design to Stick to When Transfered

Starting from this point on you should use surgical gloves to handle the copper plate and etching solution, this helps avoid getting oils on the copper and chemicals on your hands. When sanding do an extra good job on the edges.

Step 4: Wash the Copper With Some Water and Rubbing Alcohol and Let It Dry

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Step 5: Cut Out the Designs and Place Them Face Down on the Copper

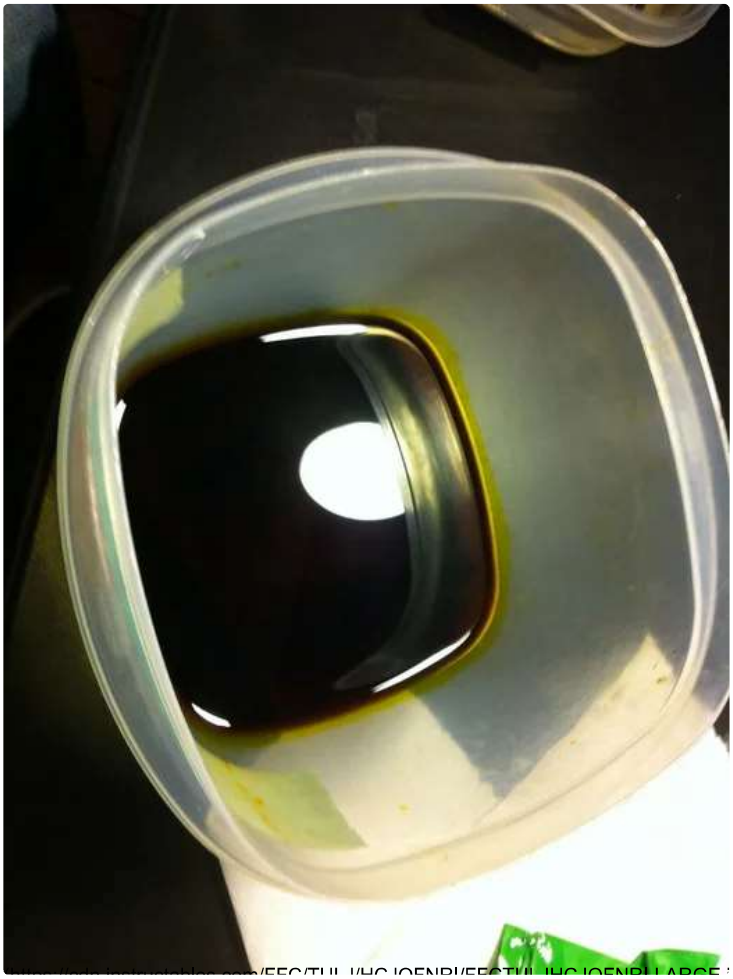
Try and have some margins around the design this also helps the ink stick to the plate.

Step 6: Run the Copper Plate With the Design Face Down Through a Laminator 5-7 Times Until the Plate Is Hot

You can also use a iron instead of a laminator if you dont have one.

Step 7: After Running the Plate Through a Laminator or Iron Place the Plate Into a Cold Bath and Agitate Until the Paper Floats Off

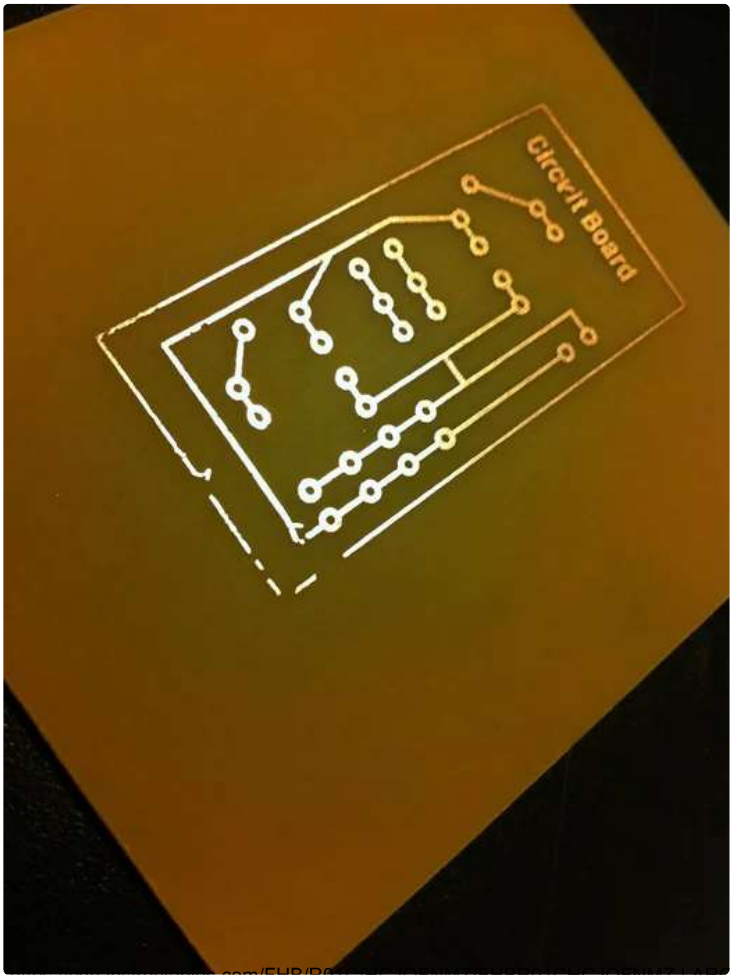
Step 8: Place the PCB Into the Etching Solution and Agitate for 25-30 Minutes or Until All the Copper Has Dissolved Around the Design



If you would prefer not to agitate by hand here is another instructable I created on how to make a agitator (https://www.instructables.com/id/CD-ROM-Agitator/) using an old CD-ROM drive.

Step 9: Once All the Copper Is Gone Rinse It in the Water Bath, Let It Dry and Use Rubbing Alcohol to Whip Off the Ink Transfered Onto the PCB

Step 10: And Now You Have a Etched PCB Board But You Still Need to Drill the Holes



The best way to drill the holes out of a PCB board is to use a dremel, a 1/32 inch drill bit and it would be best to use a dremel press but if you cant do that you can clamp down the dremel and bring the board to the dremel by hand to drill the holes. Good luck and have fun!

DISPOSAL NOTE:
Also since the etching solution eats copper and is some what toxic you really should dispose of it with other hazardous materials and definitely DO NOT POUR IT DOWN THE DRAIN it will eat up your copper pipes!

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Ever Blooming Mechanical Tulip (/id/Ever-Blooming-Mechanical-Tulip/)

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(/member/Andre82693 /) Andre82693 (/member/Andre82693 /) 2 years ago

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Hi and thanks for your help I have a problem with finding the right paper for this project . Do you have a brand or model number of paper you have used that works well. I am using the Iron on method with MG Chemicals Ferric Chloride etch

1 reply

(/member/GillynS/) GillynS (/member/GillynS/) Question 6 months ago

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What kind of Paper was used here? thanks

(/member/AamirA24/) AamirA24 (/member/AamirA24/) Question 11 months ago on Step 2

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What kind of paper should be used??

(/member/ocurran24/) ocurran24 (/member/ocurran24/) Question a year ago on Step 1

Answer Upvote

Once the design is completed, why do you have to flip it before printed?

(/member/MattW107/) MattW107 (/member/MattW107/) 3 years ago

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Uhhh is it just me or are there broken traces there?

2 replies

(/member/Dinoman217/) Dinoman217 (/member/Dinoman217/) 3 years ago

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just a question; When you say "agitate" do you mean scrubbing the PCB by hand?

(/member/nodoubtman/) nodoubtman (/member/nodoubtman/) 5 years ago on

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After the iron,under the copper it's all black, is it possible that my iron is too hot, the iron settings is before steam. What do you suggest? thank you!

(/member/dsandds2003/) dsandds2003 (/member/dsandds2003/) 6 years ago on

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I use the iron to do this.

(/member/MikB/) MikB (/member/MikB/) 6 years ago on

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OK, I took my PCB down the local office supplies place, and they ran my PCB through the laminator 5 times, now it's covered in a massive layer of plastic, help!, how do I clean it off :)

What, no plastic pouch, you say? Oh ...

1 reply

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