



**TITLE:**

**APPROVALS:**

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**Date:** 10/21/2023

**Review:**

**Date:**

**1. Revision History:**

<u>Initials</u>	<u>REV</u>	<u>DATE</u>	<u>SUMMARY OF CHANGES</u>
M.R. / S.B.	A	10/21/2023	Initial Release
M.R. / S.B.	B	1/5/2024	Replaced names with initials. Changed "Wear ppe such as safety glasses." to "Wear safety glasses." Changed "Optionally you can wear gloves." to "Optional: gloves." Changed "Acid bin". " to "Acid mixing station." Changed "2 separate glass containers." to "Measuring cup." Changed "Scale" to "5kg scale." Changed "Acid powder" to "Ammonium Persulfate." Deleted step 3. Added step "you have now made 5 cups of acid" added "with stirrer"

**2. Purpose:**

- 2.1. Etches copper off of circuit boards, to make printed circuit boards

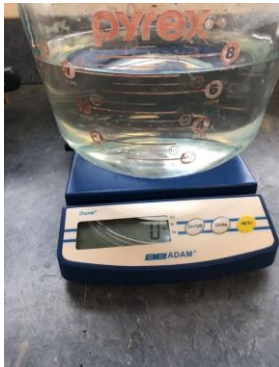

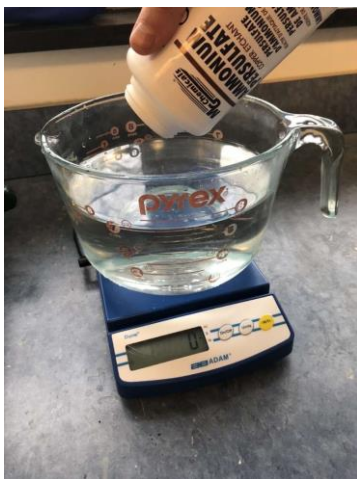
**3. Safety:**


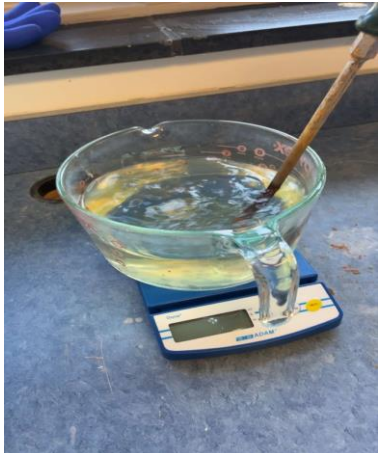

- 3.1. Wear safety glasses  
3.2. Optional: gloves

**4. Materials**

- Measuring cup
- Acid mixing station
- Acid mixer
- 5kg scale
- Water
- Ammonium Persulfate

5. Procedure:

<u>Step</u>	<u>Procedure</u>	<u>Picture</u>
1.	Measure out 5 cups of water in an empty container.	
2.	Press the tare button on scale, scale should read 0 grams.	
3.	Slowly pour ammonium persulfate powder into water.	

4.	Slowly mix acid powder into water using acid stirrer	
5.	Keep stirring until the solution is liquid with no clumps.	
6.	Pour mixed solution into the "acid bin" for later use.	
7.	You have now made 5 cups of acid	
8.	Repeat steps 1-8 if more acid is needed.	

