



Squishy Circuit recipes c/o [AnnMarie Thomas](#)

## Making Conductive Dough

Materials:

1 cup Water

1½ cups Flour

*(A gluten free version of this dough can be made by replacing the flour with gluten-free flour.)*

¼ cup Salt

3 Tbsp. Cream of Tartar

1 Tbsp. Vegetable Oil

Food Coloring (optional)

Procedure:

1. Mix water, 1 cup of flour, salt, cream of tartar, vegetable oil, and food coloring in a medium sized pot.
2. Cook over medium heat and stir continuously.
3. The mixture will begin to boil and start to get chunky.
4. Keep stirring the mixture until it forms a ball in the center of the pot.
5. Once a ball forms, place the ball on a lightly-floured surface.



**WARNING: The ball will be very hot. We suggest flattening it out and letting it cool for a couple minutes before handling.**

6. Slowly knead the remaining flour into the ball until you've reached a desired consistency.
7. Store in an airtight container or plastic bag. While in the bag, water from the dough will create condensation. This is normal. Just knead the dough after removing it from the bag, and it will be as good as new. If stored properly, the dough should keep for several weeks.

- Recommended shelf life is ~ 1 month
- The conductive dough can be frozen and thawed for longer storage.
- In this recipe, the Cream of Tartar is optional but greatly improves the texture. In the U.S. we were able to find this in the spice aisle (McCormick's brand). If you have difficulty finding this spice, it can be replaced with 3x quantity of lemon juice. However, the dough will not last as long with the lemon juice.
- An important note, due to the high salt content, the conductive dough will cause rust. You can use baby wipes to clean circuit components to prolong the life of metal parts that will be in contact with the conductive dough.



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## Making Insulating Dough

### Materials:

1½ cup Flour

Food Coloring (optional – use different color than conductive)

½ cup Sugar

3 Tbsp. Vegetable Oil

1 tsp. Granulated Alum (optional) *(The alum helps preserve the dough.)*

½ cup Deionized (or Distilled) Water

*(Regular tap water can be used, but the resistance of the dough will be lower.)*

### Procedure:

1. Mix solid ingredients and oil in a pot or large bowl, setting aside ½ cup flour to be used later.
2. Mix in a small amount of deionized water (about 1 Tbsp.) and stir.
3. Repeat this step until the mixture absorbs majority of water.
4. Once your mixture is at this consistency, knead the mixture into one lump.
5. Knead more water into the dough until it has a sticky, dough-like texture.
6. Now, knead in flour to the dough, until a desired texture is reached.
7. Store in an airtight container or plastic bag. While in the bag, water from the dough will create condensation. This is normal. Just knead the dough after removing it from the bag, and it will be as good as new. If stored properly, the dough should keep for several weeks.

- Insulating dough (containing a large amount of sugar) will eventually grow mold. Different environments (humidity, bacteria living on your skin, etc.) will alter how quickly this happens but we suggest that you only keep the dough around for about a month.
- The granulated alum in the recipe can be difficult to locate. While it helps texture and lengthens the lifespan of the dough, it is optional. In the U.S. we were able to find it in the spice aisle (McCormick's brand).
- The dough can be frozen and thawed for storage.