



A quick tutorial on diluting Electric Paint

Diluting Electric Paint. How to do it, and what the consequences are....

[INFORMATION](#) [SUGGESTED TUTORIALS](#)

People often ask us whether they can dilute Electric Paint, and the answer is yes! However, if you do decide to go down this route, there's some things you need to keep in mind before you do so. Read this tutorial to find out how you can dilute the paint, and what the consequences will be.

Our Electric Paint is composed of conductive particles suspended in a water-based solution. As such, it can be diluted by simply adding water. Be careful though! This will also decrease the conductivity of the material as you'll be changing the ratio of conductive particles to water.

For the most applications, Electric Paint doesn't need to be diluted, but occasionally people may need a slightly less viscous substance. The fact is, you can just add a little bit of water to make Electric Paint less viscous, however doing so will affect the material's conductivity.

Materials

To begin you will need:

1 x Electric Paint Jar

—

1 x Multimeter

1 x Paintbrush

1 x Paper

—

Water



Step 1 The Dilution

I'll be diluting the paint by parts to demonstrate how the resistance of the paint changes depending of the ratio of paint to water.

To do this, I've added 10ml of Electric Paint to each of my glasses, and then added 0ml, 10ml, 20ml, 30ml... up to 50ml of water to each respectively. This should give me the following dilutions of Paint to Water (as well as the control).

Control = only paint

1:1 = 10ml paint : 10ml water

1:2 = 10ml paint : 20ml water

1:3 = 10ml paint : 30ml water

1:4 = 10ml paint : 40ml water

1:5 = 10ml paint : 50ml water

Step 2 Mixing

Make sure that the paint is totally dissolved in the water solution so that the conductive particles are evenly distributed throughout your solution.

I'm doing this to ensure I don't get any false negatives when reading the resistance later on.

Step 3 Painting my lines

The next step is to paint a line with each of my different dilutions. In doing this I've made sure that the lines are the same length and width.

I've done this to make sure that the comparison later on is reading the same surface area of paint. If the surface area is very different, my experiment won't give me true results when I try to compare the resistance of the different dilutions.

Step 4

Don't forget to label!

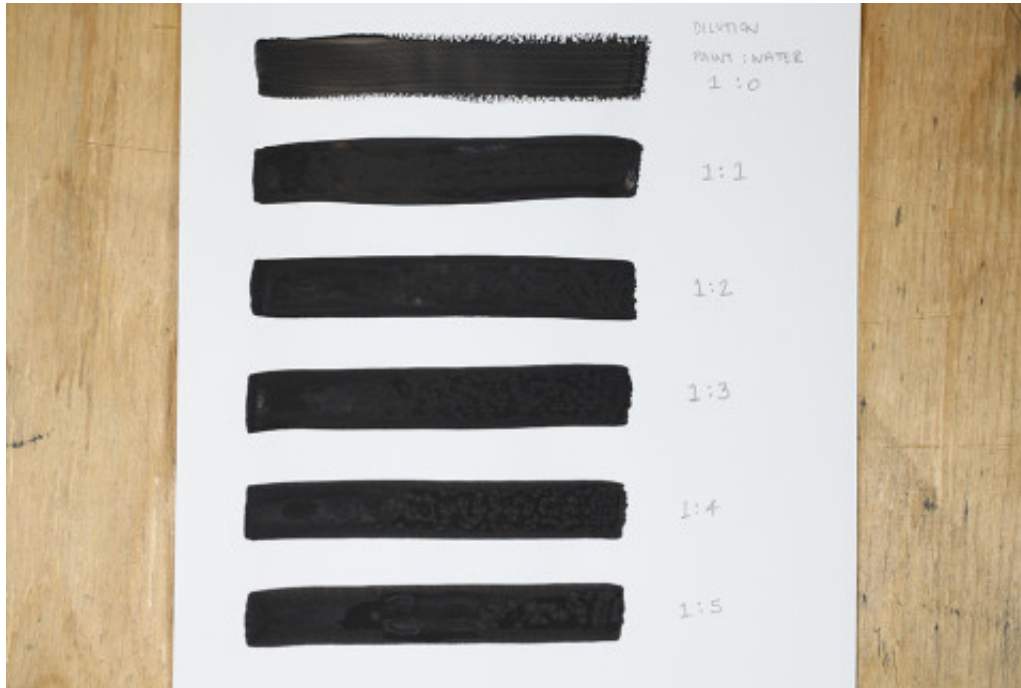
If you're doing a test of this sort, make sure to label each of your samples with their respective lines.

I want to make sure that if I come back to this sheet in the future I haven't forgotten which line is which.

Step 5

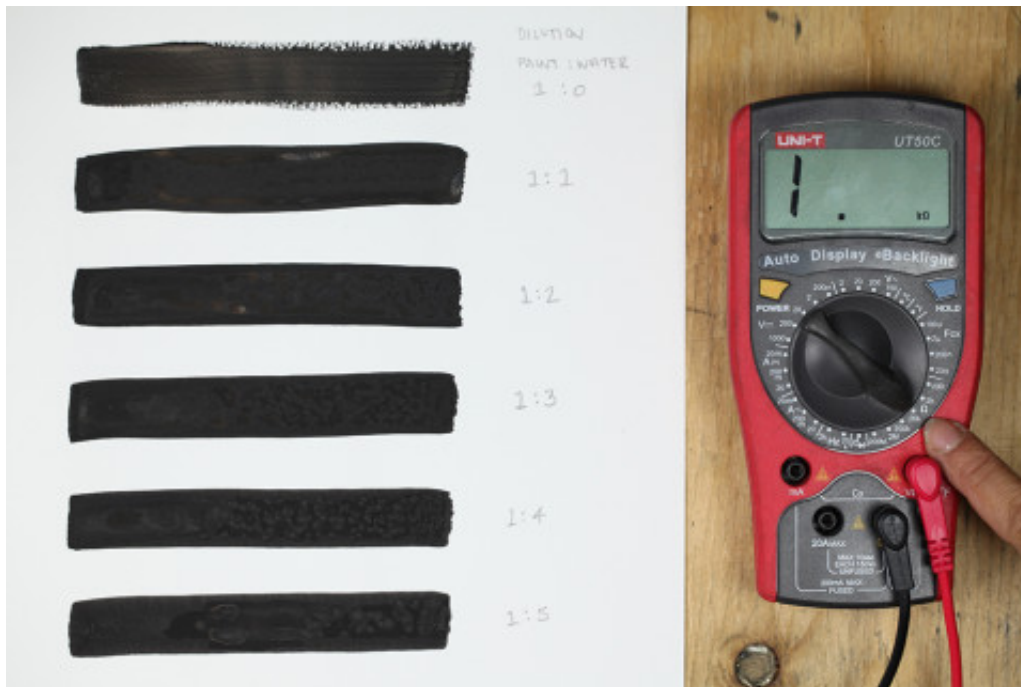
Waiting for the paint to dry...

This should take 5-15 minutes depending on how much paint was applied.



Step 6 The Multimeter

Turn on your multimeter and make sure it is set to Ohms.



Step 7

Measure the Resistance

Now for the fun bit! Place the tip of each of the probes on each end of your line.

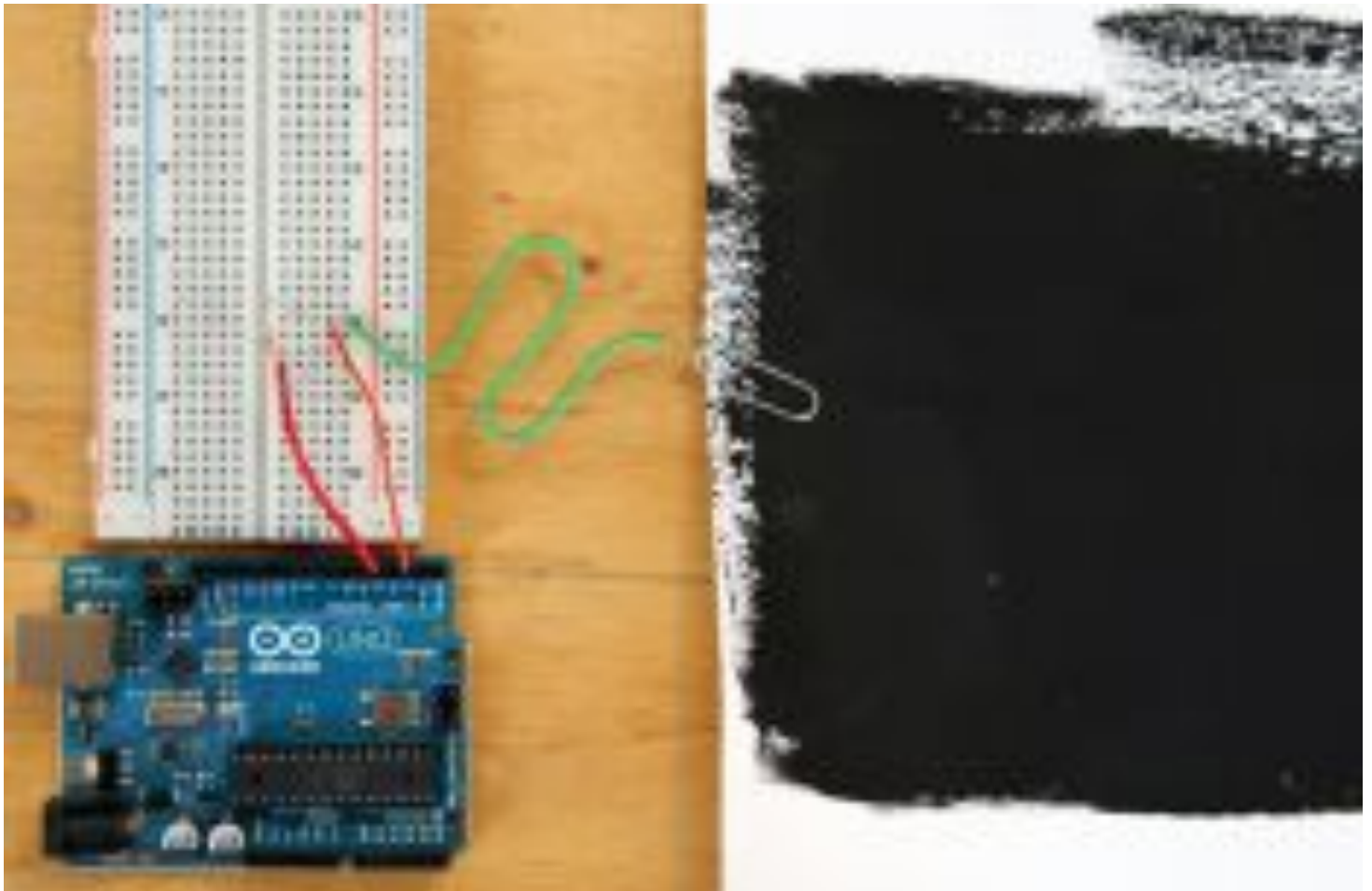
As you go down the different dilutions, you'll notice that this number changes. The resistance gets larger with each larger dilution. This is because the more water you've added, the more the conductive particles have become dispersed in the solution, and therefore the less contact they're making with each other. This means their ability to conduct has been decreased.

Step 8 Resistance Graph

As you'll see from the graph on the right. The resistance of my paint dilutions is changing linearly with the addition of water.

If I absolutely need to dilute the paint, but don't want to compromise it's conductivity, the best thing to do is apply multiple layers of your diluted solution. That way I can build up the layers of conductive material to make up for their dispersion.

Suggested Tutorials



Learn how to make a simple capacitance sensor using a pad of Electric Paint, an Arduino and a resistor.

Building a Capacitive Proximity Sensor using Electric Paint



Electric Paint 50ml

£18.00

Bare Conductive's Electric Paint is just like any other water-based paint, except that it conducts...

ADD TO CART ▶



Date Posted

2014/09/30

Rating

0 votes, 0.00 avg. rating (0% score)

[Home](#)

[Make](#)

[Shop](#)

[News](#)

[About](#)

[Education](#)

[Resellers](#)

[Contact](#)

[FAQ](#)

[Shipping](#)

[T&Cs](#)

Bare Conductive

First Floor, 98 Commercial St

London, E1 6LZ

+44 (0)207 650 7977

info@bareconductive.com

Email

First Name

Last Name

SUBMIT

Built by Everywhere