How to Make a Vitamin C Indicator

A vitamin C indicator is a solution used to test the levels of vitamin C in a substance. You can make a vitamin C indicator with cornstarch and iodine. Once you've made your indicator, you can test vitamin C levels in a variety of juices and foods.

Method 1 Making Your Indicator

1 **Gather your materials.** Before you can begin to mix your indicator, you must first gather your materials. Most of these materials can be purchased at a supermarket, health store, or pharmacy. However, some ingredients may be tricky to find, so you might have to order them online:[1]

- Cornstarch
- 2% iodine solution
- Test tubes, which have graduations on the side in milliliters.
- Gather liquids of your choosing: orange juice, lemon juice, and so on. Once your vitamin C indicator is ready, you probably want to test the vitamin C level of a variety of substances.
- An eye dropper
- A pot

2 **Make a paste with cornstarch.** To start, take a tablespoon of cornstarch and put it in a small bowl. Add a small amount of tap water, just enough to work the cornstarch into a fine paste.[2]

3 **Pour in water and boil.** Once your paste is ready, measure out 250 milliliters of water with your test tube. Pour this into the cornstarch paste. Put this in a pot and heat over the stove until it boils. Boil for 5 minutes.[3]

4 **Place 10 drops of the starch solution to 75 milligrams of water.** While your water is boiling, measure out 75 milligrams of water in a test tube. Once your water is done boiling, take your eye dropper. Use your eye dropper to add 10 drops of the starch solution to the 75 milliliters of water.[4]

5 **Add drops of iodine until the solution changes color.** You can now add your iodine. Clean out your eye dropper and then fill it with iodine. Gradually add drops of iodine until your solution turns a dark purple-blue color. Your vitamin C indicator is now finished.[5]

Method 2 Using the Indicator

1 **Prepare your indicator for use.** You can use your indicator by placing drops of various liquids into the indicator. Indicators turn colorless when exposed to vitamin C. Therefore, you only need a small amount of liquids with a high level of vitamin C to cause the indicator to lose color. You need a larger amount of liquids with a low level of vitamin C to change the indicator's color.[6]

- If you want to test various liquids, put a bit of the indicator in a few different test tubes. You will be adding drops of different liquids to each test tube. You do not need a lot of indicator to start with, but make sure amount are consistent from test tube to test tube. For example, if you put 5 drops of indicator

in the first test tube, you should put 5 drops in all other test tubes.

2 **Add 10 drops of various juices to each test tube.** Assemble a variety of liquids to test. Use your eye dropper to add 10 drops of each liquid to each test tube of indicator. Then, see how much the color has changed in each tube. Make sure to wash your eye dropper each time you measure out a new liquid. You do not want to accidentally mix liquids, as this will cause inaccurate results.[7]

3 **Measure the samples from lightest to darkest.** Liquids with a high concentration of vitamin C will have changed the indicator to a light, possibly clear shade. For liquids with a low concentration of vitamin C, the indicator will be darker, retaining a lot of its purple-blue shade.[8]

- Some test tubes may be very similar in color. If you're struggling to see which is lighter and which is darker, hold the test tube up against a white background like a white wall or a piece of paper.

4 **Count how many drops it takes for a sample to change color.** If you only have one test tube, there is another way to compare and contrast vitamin C levels. Using one liquid at a time, record how many drops of each liquid it takes to cause the indicator to change color. The lower the number of drops, the higher the concentration of vitamin C in a substance.[9]

Method 3 Avoiding Pitfalls

1 **Practice basic safety when using the stove.** As you'll need to use the stove to make your indicator, practice basic safety. If you're younger, ask an adult to help you before you use a stove.[10]

- Do not leave the handle of a pot pointed off the edge of the stove. You could accidentally bump into the handle, causing boiling water to fall on you.
- Do not use metal utensils to stir the solution. These heat up in hot water, and can burn your hand.
- If you're using a metal pot, use oven mitts to remove it from the stove to avoid burning your hand.

2 **Be careful handling iodine.** Iodine is safe, but can be toxic if swallowed, so it should not be ingested. It's safe otherwise, but can easily stain clothing. If you're handling iodine, it's a good idea to wear old clothes or an apron.[11]

3 **Consider purchasing indophenol.** If you do not want to make your own vitamin C indicator, you can purchase a bottle of idophenol online. This is a liquid that, like a cornstarch solution, turns colorless in the presence of vitamin C. You can buy a bottle of indophenol online, and use it as you would use a cornstarch solution.[12]

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Community Q&A

What is the concentration of iodine in the solutions

Iodine should be in a 2% concentration for this experiment.

wikiHow Contributor

Not Helpful 0 Helpful 8

I am using this recipe in a science project. Where can I find tincture of iodine? I live in Canada so will it be impossible to find iodine tincture?

You should be able to order iodine online, through sites like Amazon, if you cannot find iodine in stores in your area.

wikiHow Contributor

Not Helpful 0 Helpful 5

Do the starch solution need to be hot when I add the iodine?

No, it can be whatever temperature you desire.

wikiHow Contributor

Not Helpful 1 Helpful 2

Sources and Citations

1. http://www.sciencemadesimple.com/nutrition_projects.html
2. http://www.sciencemadesimple.com/nutrition_projects.html

3. http://www.sciencemadesimple.com/nutrition_projects.html

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