

The pH of Distilled Water

Source: <https://www.h2olabs.com/t-faq.aspx>

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What is the PH of distilled water?

The PH of distilled water is as close to neutral as possible, (7.0), as virtually everything has been removed from it that would cause it to be acidic or alkaline. Note, however, that pure water, when exposed to the atmosphere, will take in carbon dioxide, some of which reacts with water to form carbonic acid and H+, thereby lowering the pH to about 5.7. Also, neutral pH at 25 degrees C is not exactly 7. pH is an experimental value, so it has an associated error.

The pH of water gets smaller with higher temperatures. For example, at 50 degrees C, pH of water is 6.55. This means that a diluted solution is neutral at 50 degrees C when its pH is around 6.55 and that a pH of 7.00 is basic. In other words, it is difficult to get an accurate pH reading, especially in PURE DISTILLED water.

The Environmental Protection Agency says the following: "Pure distilled water would have tested neutral, but pure distilled water is not easily obtained because carbon dioxide in the air around us mixes, or dissolves, in the water, making it somewhat acidic. The pH of distilled water is between 5.6 and 7. To neutralize distilled water, add about 1/8 teaspoon baking soda, stir well, and check the pH of the water with a pH indicator.

Is distilled water acidic?

Because distilled water is so pure, if not stored in an airtight container, it is possible over time to absorb a very low amount of CO₂, (carbon dioxide), from the surrounding air. This may cause the results of a pH test to appear acidic. But the reason for this is that because everything, either alkaline and acidic, has been eliminated from the water, only a very minuscule amount of any acidic substance (from the surrounding air for example) will cause a pH scale reading to appear acidic. (A pH scale does not measure how much acid is in water, as it only measures the relative amount of acid vs. alkali.)

It is very difficult if not impossible to quantify how much actual acid is contained in distilled water because of this, but it is very safe to say that it is a very, very low amount. So even though a pH reading of distilled water may appear to be a little on the acidic side, the actual amount of acidic substances in distilled water is far less than what is contained in a regular glass of tap water.

Carbon Filter

The activated carbon filter on the condensing side of the distiller needs to have the charcoal changed out each month. This can make the water go alkaline as the volatile gases are removed by this system, but if it gets to the point where it has absorbed all it can and then does not function anymore, then these volatile gases get into the newly condensed and distilled water, which then makes it go acidic. These gases are naturally in tap water and are not good for the health.