

The boiling point of salt water vs. Regular Water

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How does the amount of salt added to water affect its boiling point?



Hypothesis

The more salt that is added, the more the boiling point will increase because the salt molecules will make it the water slightly more viscous, which makes it harder for the heat to produce enough pressure to form bubbles and force them upwards (boiling).

Materials

- Candy Thermometer
- Saucepan
- 1 cup measuring cup
- Salt
- Water
- A tablespoon
- Fork



Procedure



1. Pour two cups of clean water into the uncovered saucepan and place it on the stovetop, turning the temperature to high, making sure to turn it to the same temperature each time. This is the controlled subject.

2. Watch the water carefully until it boils, and then record the temperature with the thermometer, making note of it on the data table.



3. Repeat steps one and two twice more, dumping out the water and cooling the pot each time, and then calculate the average boiling point.



4. Repeat steps one through three with two tablespoons of salt added, and then 4 tablespoons ($\frac{1}{4}$ cup) of salt added, stirring and dissolving the salt with the fork before starting the burner.

5. Repeat the experiment and average for more accurate results if wanted.



Data Table (Celcius)

	Trial 1	Trial 2	Trial 3	Averages
No Salt	99.5°	99.3°	98.8°	99.2°
2 tbsp	100.5°	100.5°	100.3°	100.4°
1/4 Cup	101.5°	102°	102.5°	102°

Conclusion

In conclusion, the amount of salt added to water does indeed affect the temperature at which it boils, with the water boiling at around 99.2 degrees with no salt, and boiling at around 102 degrees with salt. This is most likely due to the way that salt slightly increases the viscosity of the solution, making it harder for the heat to generate the bubbles involved in boiling.