Comparing the Leidenfrost Effect on Distilled Water and Ethanol

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The Leidenfrost phenomenon is the term given to the phenomena observed when small quantities of a liquid are placed on an extremely hot surface. The purpose of this project is to investigate the Leidenfrost effect between ethanol and water at the same time; the Leidenfrost effect on different ratios of water and ethanol; the temperature and the amount of time the water and ethanol droplets take to combine. Droplets of water and ethanol were pipetted onto a hot plate. Multiple trials were completed, a different ratio with each one. Each different set of droplets was tested with different temperatures. Data was obtained and graphed from each trial. Data collected from this research indicates that water and ethanol under the Leidenfrost effect take the longest to combine when the ratio of water is greater than ethanol. Temperatures ranging from 330? - 350?, resulted in the longest amount of time that the droplets took to combine. The Leidenfrost effect is most successful on distilled water and ethanol when the ratio of water is greater than ethanol due to ethanol's lack of strong hydrogen-bonding.

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