

Superheated Steam Demonstration Worksheet

Discussion Questions

- Note any observations you made regarding the following:
 - The initial appearance of the steam.
 - What happened when a piece of paper was held in that initial steam?
 - The appearance of the superheated steam.
 - What happened when a beaker was held in the superheated steam?
 - What happened when a piece of paper was held in the superheated steam?
 - What happened when a match was held in the superheated steam?
- What state was the initial steam in? What state was the superheated steam in? Explain how the difference occurred.
- The specific heat of gaseous water at 100 °C is 33.1 J/mol·°C at 1 atm, the heat of vaporization of water at 100 °C is 40600 J/mol·°C, and the heat of liquid water at 100 °C is 75.3 J/mol·°C. What releases more heat—water condensing from 100 °C to 99 °C or boiling water cooling to 99 °C?