Recrystallization of Benzoic Acid Developed by OHAUS Corporation

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Standard Preparation

1. Set the OHAUS Guardian 5000 Hotplate Stirrer to 200 °C and allow it to heat while performing the next steps. The SafetyHeat™ feature that is built in to the system will begin monitoring to ensure temperature stability and protect against damaging your sample.
2. Weigh 1.0 g of benzoic acid using the OHAUS EX224 Precision Balance. Place the weighed material into a 50 mL Erlenmeyer flask.
3. Add 20 mL of distilled water into a second 50 mL Erlenmeyer flask. Using the OHAUS Guardian 5000 Hotplate Stirrer, heat the water to its boiling point. The large hot-top light will be illuminated signifying the device is above 40 °C. The built in SmartHousing™ feature ensures the housing is cool to the touch.
4. Once the water has reached a boil, set the hotplate's temperature to 100 °C.
5. Using a Pasteur pipette, add 0.5-1 mL of the boiling solvent to the flask containing the benzoic acid.
6. Swirl the flask with each addition while keeping the solution at a simmer on the hot plate.
7. Continue to add water in 0.5 mL portions until the benzoic acid fully dissolves.
8. Remove the flask from the hot plate and allow the benzoic solution to cool to room temperature.
9. Place the flask in an ice-water bath for 5 minutes to further cool the solution and complete crystallization.
10. Collect the crystals of benzoic acid through vacuum filtration.
11. Allow the crystals to air dry.
12. Use the OHAUS EX224 Precision Balance to weigh the collected crystals and calculate your percent recovery. (Percent recovery = (amount of substance recovered on purification ÷ amount of substance originally taken) × 100)
13. Use a melting point apparatus to assess the purity of your crystals.

OHAUS Products Used Within This Procedure

OHAUS Guardian 5000 Hotplate Stirrer

OHAUS Explorer Precision Balance