



Assignment #3 - Recrystallization Worksheet

Description Complete observations while in lab. Due at 5:00 pm the day following your lab section.

I worked in a group with

The work for this assignment is in My notebook

Grade 10 / 10

Graded on Aug 29, 2024, 12:29 PM CDT

Ilana Berlin - Aug 27, 2024, 3:13 PM CDT

Purpose:

Learn process of recrystallization by dissolving and recrystallizing phenyl benzoate, benzil, and trans-Cinnamic acid

Observe the range of melting points of recrystallized phenyl benzoate, benzil, and trans-Cinnamic acid

Boiling points of solvents for parts 1-2:

95% ethanol 78 °C hexane 69 °C water 100 °C

1. Phenyl benzoate

Describe the original appearance of the compound:

opaque white powder, slightly glittery

Mass of the compound before recrystallization 196 mg

dissolved into clear colorless liquid

Approximate amount of solvent: 0.73 mL 95% ethanol

Describe the appearance of the compound after recrystallization:

opaque white crystalline chunk formed at bottom of tube

Mass of the compound after recrystallization 117 mg

Percent recovery 59.7 %

Literature mp 70 °C **Observed mp** 58.4-61.3 °C

2. Benzil

Describe the original appearance of the compound :

Small yellow crystals shards

Mass of the compound before recrystallization 198 mg

Approximate amount of better solvent (ethanol): 1.52 mL

dissolved into pale yellow transparent liquid

Approximate amount of poorer solvent (water): 9 drops

Formed milky white solid and turned solution into white-yellow goop

Solution separated, yellow liquid settling at the bottom and clear liquid rising to the top

dissolved back into transparent yellow liquid

Describe the appearance of the compound after recrystallization :

long -- crystalline fibers formed throughout solution in tube

Mass of the compound after recrystallization 196 mg

Percent recovery 99.0 %

Literature mp 94-96 °C Observed mp 88.2-95.3 °C

3. trans-Cinnamic Acid

Describe the original appearance of the compound :

dull white powder

Mass of the compound before recrystallization 304 mg

Approximate amount of solvent: 0.65mL of 95% ethanol

Dissolved into clear colorless liquid

Describe the appearance of the compound after recrystallization :

large opaque white crystalline flakes

Mass of the compound after recrystallization 288 mg

Percent recovery 94.7 %

Literature mp 132-135 °C Observed mp 112.3-119.7 °C