

Name _____

Section _____

Date _____

COLLIGATIVE PROPERTIES - DATA SHEET**Part A: Data for pure cyclohexane**

Mass: test tube + stopper + 150 mL beaker, g _____

Mass: test tube + stopper + 150 mL beaker + 25 mL cyclohexane, g _____

Freezing Temperature of cyclohexane, °C _____

Part B: Data for the biphenyl-cyclohexane solution

Mass of biphenyl, g _____

Freezing temperature of the biphenyl-cyclohexane solution, °C _____

Freezing point depression ($\Delta T_f = T_{f \text{ Part A}} - T_{f \text{ Part B}}$) °C _____

Mole of biphenyl used (mol. mass: 154.2 g/mol) _____

Mass of cyclohexane, (Part A) g _____

Molality of biphenyl-cyclohexane solution, mol.kg⁻¹ _____ K_f of cyclohexane, °C/m _____

% error (literature = 20.2 °C/m) _____

Part C: Data for the unknown solute-cyclohexane solution

Mass: test tube + stopper + 150 mL beaker, g _____

Mass: test tube + stopper + 150 mL beaker + 25 mL cyclohexane, g _____

Unknown solute number _____

Mass of the unknown solute added, g _____

Freezing Temperature of unknown solute-cyclohexane solution, °C _____

Molality of the unknown in the solution, mol/kg solvent _____

Mass of cyclohexane, kg _____

Number of moles of the unknown solute _____

Molar mass of unknown solute, g.mol⁻¹ _____

Unknown (circle one):

naphthalene
128 g/molp-dichlorobenzene
147 g/molanthracene
178 g/mol