

Organic chemistry lab

[Science](#), [Chemistry](#)



Organic Chemistry Laboratory Report. Experiment 1: Crystallization.

Objectives: 1. To study the crystallization process. 2. To identify the best suitable solvent to use for the crystallization process. 3. Gain an experience in purifying an organic compound by the techniques of the crystallization.

Introduction. Crystallization is a technique which chemists use to purify solid compounds. It is one of the fundamental procedures each chemist must master to become proficient in the laboratory. Organic compounds isolated from their natural sources or prepared synthetically in the laboratory are usually impure.

The impurities might be compounds with properties similar to those of the desired compounds, reaction-starting materials, products of side reactions, or simple dust or soil. Pure substances are not only important to chemists in their studies of matter but also are vital in other areas of study such as medicine where those substances might be used as medications

Crystallization is based on the principles of solubility: compounds (solutes) tend to be more soluble in hot liquids (solvents) than they are in cold liquids.

If a saturated hot solution is allowed to cool, the solute is no longer soluble in the solvent and forms crystals of pure compound. Impurities are excluded from the growing crystals and the pure solid crystals can be separated from the dissolved impurities by filtration. Chemical requirement. Solvent: Distilled water, Ethanol, and Acetone. Solute: Acetanilide. Result: Data and Report Sheet. 1. 1 Choosing a suitable solvent.

Solvents	solubility	Appearances and quantity of the crystal at room temperature	Room temperature	Hot temperature	Distilled water		
	insoluble	soluble	Crystal like white needle	Ethanol	good	-	No crystal

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Acetone| good| -| No crystal| Why do you choose this solvent? It is because Acetanilide is more soluble in hot water but not in cold water, also sugar is impurity it is very soluble in cold water therefore, it fits the essential characteristics needed for the suitable solvent. . 2 Crystallization Appearance of acetanilide sample (before crystallization): white dust. Mass of acetanilide sample (before crystallization): 2. 15g. Appearance of acetanilide crystal: jelly white like white needle. Mass of filter paper: 1. 42g Mass of filter paper +acetanilide crystal: Mass of acetanilide crystal: Calculation. % yield of crystal =