**Chem 101 Lab Note**

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**Quad** : 2  
**Lab Section** : B12  
**Date** : November 9, 2023

**Procedure**

In the lab experiment, I synthesized tetramethylammonium triiodide (NMe4I3) and Tetramethylammonium Pentaiodide (NMe4I5) by reacting iodine (I2) with Tetramethylammonium Iodide (NMe4I) in a controlled stoichiometry. I weighed approximately 0.521 g of NMe4I and 0.531 g of I2 for the triiodide synthesis, and 0.508 g of NMe4I and 1.332 g of I2 for the pentaiodide synthesis. I dissolved the reactants in 12 mL of 95% ethanol, gently heating the mixture on a hot plate with stirring until complete dissolution occurred. After cooling, I obtained crystalline products (0.146 g NMe4I3 and 1.329 g NMe4I5). I performed vacuum filtration using a Buchner funnel and filter paper to separate the crystals from the filtrate, washing them twice with hexanes. The crystals were left to dry under vacuum for 10 minutes, and I collected and weighed the samples accurately for further analysis. This method allowed for the controlled synthesis and isolation of tetramethylammonium triiodide and pentaiodide salts.

**Products (Pictures, Colour, Product Names)**

**A round glass plate with a black substance in it

Description automatically generated**

**A round glass plate with a small green substance on it

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**Figure 1**: *0.146 g NMe4I3* **Figure 2** *1.329 g NMe4I5*

**3 Chemicals as References**

*Commercial Products:* Iodine, Lot: N9823360 *;* Tetramethylammonium Iodide (NMe4I), Sigma Aldrich, Co., 3050 Spruce Street, St. Lois, MO 63103 USA 314-771-5765 *;* Hexane, Anachemia 23H1761046