**Formal Report of Group II**

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**Stoichiometry of Some Salts**

1. **Objective** :
* To determine the limiting and excess reagent.
1. **Science Concepts:**
* **Reactant** – substances initially present in a chemical reaction that are consumed during the reaction to make products.
* **Precipitation Reaction** – Chemical reaction where one of the products is a precipitate.
* **Limiting Reactant** - The reactant in a chemical reaction that limits the amount of product that can be formed. The reaction will stop when all of the limiting reactant is consumed.
* **Excess Reactant** - The reactant in a chemical reaction that remains when a reaction stops when the limiting reactant is completely consumed. The excess reactant remains because there is nothing with which it can react.
1. **Schematic Procedure:**



1. **Results and Discussions:**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Test tube number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| No. of drops of silver nitrate | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 |
| No. of drops of Lead nitrate | 44 | 40 | 36 | 32 | 28 | 24 | 20 | 16 | 12 | 8 | 4 |
| Ratio | 1: 11 | 1:5 | 1:3 | 1:2 | 5:7 | 1:1 | 7:5 | 2:1 | 3:1 | 5:1 | 11:1 |
| Observations | . . . NO PRECIPITATION BECAUSE THEY ARE BOTH SOLUTIONS OF SALT (NITRATE). . . |

Questions :

1. In which test tube is the largest amount of precipitate?
* There will be no reaction, as both compounds have same anion (nitrate).
1. Balance the chemical equation : Silver nitrate + Lead nitrate → silver nitrate + lead nitrate
* AgNO3 + Pb(NO3)2 → AgNO3 + Pb(NO3)2
1. What is the ratio of the coefficients of the reaction in balanced chemical reaction above?
* 1:1:1:1
1. How does this ratio compare to the ratio you found experimentally?
* The ratio of AgNO3 + Pb(NO3)2 → AgNO3 + Pb(NO3)2 is the same with the experiment we conducted.
1. What is the limiting reactant in the test tube # 2?
* Silver Nitrate AgNO3

In test tube # 10?

* Lead Nitrate Pb(NO3)2
1. **Conclusion**
* There will be no reaction between Silver Nitrate and Lead nitrate because both compounds have same anions.
1. **References:**
* Group 1 formal Report (2011)
* <http://jefstaines.weebly.com/>
* <http://www.chem.tamu.edu/class/majors/tutorialnotefiles/limiting.htm>
* <http://wiki.answers.com/Q/Silver_nitrate_lead_nitrate>