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PURITY ANALYSIS CONCEPT, CO- PRECIPITATION

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PURITY ANALYSIS CONCEPT

Impurities in Precipitates

- 1. OCCLUSION:** Some constituents of the precipitation medium may be trapped in the crystal structure resulting in positive or negative errors. The trapped materials can be water, analyte ions, precipitating agent ions, or other constituents in the medium. Slow addition of precipitating agent and stirring may avoid occlusion but if it does occur, dissolution of precipitate and re precipitation may have to be done.



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2. INCLUSION: If the precipitation medium contains ions of the same charge and size as one forming the crystal structure of the precipitate, this extraneous ion can replace an ion from the precipitate in the crystal structure. For example, in the precipitation of NH_4MgPO_4 in presence of K^+ ammonium leaves the crystal magnesium ammonium phosphate and is replaced by K^+ since both have the same charge and size. However, the FW fro NH_4^+ is 18 while that of K^+ is 39. In this case a positive error occurs as the weight of precipitate will be larger when K^+ replaces NH_4^+ . In other situations we may get a negative error when the FW of the included species is less than the original replaced species.



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3. SURFACE ADSORPTION: This always result in positive errors in gravimetric procedures in colloidal precipitates.

4. CO-PRECIPIATION-

- **Precipitation of the sample along with the impurities which may lead to the wrong result.**



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