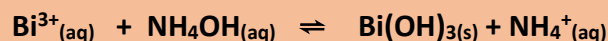


GROUP B CATIONS

Mn ²⁺	Fe ³⁺	Bi ³⁺	Cr ³⁺
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Group B cations are selectively precipitated out using ammonia buffer at pH 9-10 to form hydroxides. Ammonia provides the right amount of hydroxides ions in the solution to selectively precipitate group B cations, and forms stable complexes with the transition metal ions to make sure that these remain in soluble form in the buffered solution:



Mn ²⁺	<ul style="list-style-type: none"> ➤ Confirmatory reagent: 3% H₂O₂/NaBiO_{3(s)} <ul style="list-style-type: none"> - Reduction of Mn⁴⁺ to Mn²⁺ by reacting with H₂O₂ first, allows the reaction with BiO₃⁻ to occur - Production of purple supernatant
Fe ³⁺	<ul style="list-style-type: none"> ➤ Confirmatory reagent: 0.1 M KSCN <ul style="list-style-type: none"> - Formation of blood red thiocyanatoiron (III) complex
Bi ³⁺	<ul style="list-style-type: none"> ➤ Confirmatory reagent: 6 M NaOH/SnCl_{2(s)} <ul style="list-style-type: none"> - Bi³⁺ is reduced to Bi with Sn²⁺ - This reduction reaction occurring in a basic solution allows the immediate appearance of a black precipitate
Cr ³⁺	<ul style="list-style-type: none"> ➤ Addition of H₂O₂ + HCl <ul style="list-style-type: none"> - Reduces Cr₂O₇²⁻ to CrO₅ - A flash of blue color in the solution, which decomposes quickly, is observed