

Table 1. Characteristic reactions of cations of Group IV and Group V (↓ precipitate; → goes to)

	Ca²⁺	Sr²⁺	Ba²⁺	Mg²⁺	Na⁺	K⁺	NH₄⁺
Flame color	brick red	carmine red	yellowish green		yellow	pinkish purple	
(NH₄)₂CO₃	↓CaCO ₃ white	↓SrCO ₃ white	↓BaCO ₃ white				
NaOH or KOH	↓Ca(OH) ₂ white	↓Sr(OH) ₂ white	↓Ba(OH) ₂ white	↓Mg(OH) ₂ white			Ammonia smell after heating
Na₂HPO₄	↓Ca ₃ (PO ₄) ₂ white	↓Sr ₃ (PO ₄) ₂ white	↓Ba ₃ (PO ₄) ₂ white	↓Mg ₃ (PO ₄) ₂ *H ₂ O white			
CaSO₄ (saturated)		↓SrSO ₄ white (heating accelerates the reaction)	↓BaSO ₄ white				
H₂SO₄ (dissolved)		↓SrSO ₄ white gelatinous	↓BaSO ₄ white crystalline				
K₂CrO₄	no precipitate	↓SrCrO ₄ yellow	↓BaCrO ₄ yellow				
K₄[Fe(CN)₆	↓Ca ₂ [Fe(CN) ₆] white	no precipitate	↓Ba ₂ [Fe(CN) ₆] (only in concentrated solutions)				
Other	+ (COONH ₄) ₂ → ↓ white (precipitate is insoluble in CH ₃ COOH, in contrast to Ba ²⁺ and Sr ²⁺ ions)			+ NH ₃ aq → ↓Mg(OH) ₂ white + oxine + NH ₃ aq → ↓white		reaction with tartaric acid	reaction with Nessler reagent