

Common Sources of Cations

Group I** (see note below)

Ag ⁺	Photography, jewelry, silverware, batteries, plating, dental amalgam
Pb ²⁺	Batteries, pigments, solder, bullets, radiation shielding, fishing sinkers
Hg ₂ ²⁺	Batteries, fungicides, thermometers, switches, dental amalgam, pigments

Group II**

Hg ²⁺	Batteries, fungicides, thermometers, switches, dental amalgam, pigments
Pb ²⁺	Batteries, pigments, solder, bullets, radiation shielding, fishing sinkers
Bi ³⁺	Low melting alloys-Wood's metal, Pepto-Bismol, thermoelectric devices
Cu ²⁺	Electrical wiring, plumbing, brass/bronze, pigments, fungicides
Cd ²⁺	Plating, batteries, photovoltaic cells, pigments
As ³⁺	Insecticides, herbicides, rodenticides, hardening of Pb and Cu alloys
Sb ³⁺	Lead battery alloys, bearing alloys, thermoelectric devices
Sn ²⁺	Plating of cans, solder, bronze, bearing alloys, toothpaste
Sn ⁴⁺	Plating of cans, solder, bronze, bearing alloys

Group III**

Co ²⁺	Alnico magnets, catalysts
Ni ²⁺	Stainless steel, nichrome wire, coinage, plating, hydrogenation catalysts
Fe ²⁺	Steel, iron, (converted to Fe ³⁺ on exposure to air)
Fe ³⁺	Steel, iron, pigments, rust
Mn ²⁺	Steel, dry cell batteries
Al ³⁺	Lightweight alloys, abrasives, furnace bricks, dyeing, catalysts, batteries
Cr ³⁺	Stainless steel, nichrome wire, plating
Zn ²⁺	Galvanizing, brass, batteries, calamine lotion, sunblock

Group IV**

Ba ²⁺	Drilling muds for oil wells, digestive tract X-Rays
Ca ²⁺	Cement, wallboard, lime, limestone, hardening of Pb alloys
Mg ²⁺	Lightweight alloys, dolomite, firebricks, milk of magnesia, epsom salts
Na ⁺	Table salt, seawater, lye, gunpowder, (traces in just about everything)
K ⁺	Fertilizer, seawater, table salt substitutes
NH ₄ ⁺	Fertilizer, explosives, dry cell batteries

**** Group (I, II, III, IV) refers to qualitative analysis grouping based on solubility behavior and NOT to group in the periodic table.**