

The Geology of Fireworks

North Carolina Geological Survey

www.deq.nc.gov/geological-survey

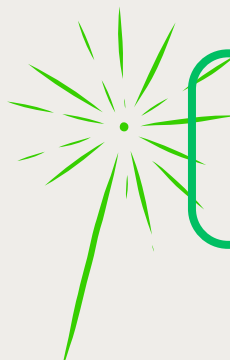
Did you know that minerals give fireworks their colors?
Not only that, but minerals also provide the sparkles, sparks, bright flashes, and loud bangs!



Blue
Element: copper
Mineral ore: chalcopyrite



Purple/Lavendar
Element: copper & strontium
Mineral ore: chalcopyrite, celestite



Green
Element: barium
Mineral ore: barite



Silvery/White
Elements: titanium, zirconium, magnesium alloys
Mineral ores: ilmenite, rutile, zircon, dolomite, magnesium



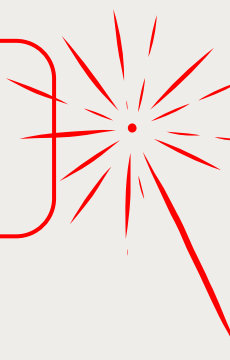
Yellow
Element: sodium
Mineral ore: halite (rock salt)



Orange
Element: strontium, sodium
Mineral ore: celestite, halite



Gold sparks: iron filings (magnetite, hematite, charcoal)
Flashes & bangs: aluminum powder (bauxite)



Red
Element: strontium
Mineral ore: celestite