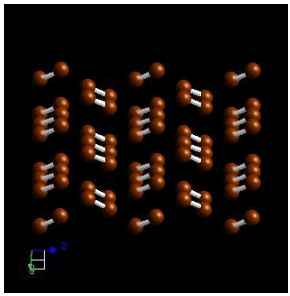
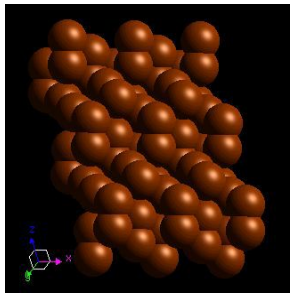
35 79.90 Br

Bromine

Density = 3.14 g/cm^3
Melting point = -7.25°C
Boiling point = 58.8°C
Electronegativity = 2.96
Ionization energy = 1139 kJ/mol
Electron shell: [Ar]3d^{10}4s^{2}4p^5
Oxidation states: 7, 5, 3, 1, -1
Abundance on Earth:6.0x10^{-4} %
Isotopes: ^{76}Br, ^{77}Br, ^{79}Br, ^{80}Br, ^{81}Br, ^{82}Br, ^{83}Br, ^{84}Br, ^{85}Br
Cost: $4.9 per 100 g

Crystal structure: Orthorhombic, space group number 64





- Bromine was discovered in 1826 by Antoine J. Balard in France; it wasn't found in quantity until 1860.
- Bromine is the only liquid nonmetallic element.
- It is a member of the halogen group of elements, it is obtained from natural brines from wells in Michigan and Arkansas.
- Little bromine is extracted today from seawater, which contains only 85ppm.
- It has been suggested that bromine in the form of bromide is essential to health.
- It is a heavy, volatile, mobile, and dangerous red liquid. The red vapor has a strong unpleasant odor and the vapor irritates the eyes and throat. When spilled on the skin it produces painful sores. It is a serious health hazard, and maximum security precautions should be taken when handling it.
- Used for water purification (swimming pools), manufacture of ethylene dibromide (anti-knocking gasoline), bleaching, organic synthesis, solvent, analytical reagent, fire retardant for plastics, pharmaceuticals, and shrink-proofing wool.