Common Elements

**Aluminum**
Offers good corrosion resistance and good strength when alloyed with Zn or Si.

**Antimony**
Increases tensile strength of solders. Poor conductor of heat and electricity.

**Bismuth**
Low melting when alloyed with SnPb or In. Expands 3.32% on solidification. Non-toxic.

**Cadmium**
Increases corrosion resistance of solders. Increases service temperature and strength of solder.

**Copper**
When used in SnPb alloys, slight increase in spread rate, lowers melting temperature.

**Gallium**
Has one of the longest liquid ranges for metals. Has low vapor pressure.

**Germanium**
When alloyed with Au or Al, will reduce melting point and increase strength. Contributes to poor solder wettability.

**Gold**
Highly conductive and corrosion resistant. High melting point is reduced when alloyed with Sn, Si, or Ge.

**Indium**
Improves wetting of PbAg solders. Resists alkaline corrosion. Bonds glass, quartz, and glazed ceramics.

**Lead**
Economical material, soft and ductile. Offers increased strength when alloyed with other elements. Toxic.

**Silicon**
When used with Au or Al, will reduce melting point, increase strength, and improve wettability.

**Silver**
Exhibits the highest electrical and thermal conductivity of all metals.

**Tin**
Excellent wetting characteristics. Low strength when used alone but becomes stronger when alloyed.

**Zinc**
When used in SnPb alloys, lowers spreading rate; when soldering to Al, used to reduce the electrical potential difference.

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