Chemical Bonding
Ivy Way Science

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| Type of Bond | What happens to valence electrons? | Where are these elements in the Periodic Table? | Physical Properties | Nicknames |
| Ionic | electrons are transferred.atoms arranged into crystals. | one metal and one non-metal | high melting point.high boiling point.hard and brittle.conducts electricity in liquid phase (dissolved or melted) | salt |
| Non-polar Covalent | electrons are shared between atoms | non-metals | low melting point.low boiling point.don’t conduct electricity. | molecule.molecular compound. |
| Polar covalent | electrons are shared unevenly. | non-metals of unequal electronegativity | higher m.p. and b.p. than covalent, but lower than ionic | dipoles |
| Network Solid | electrons are shared.every atom bonds with every other atoms. | C (diamonds)SiO2 (quartz/sand) | Extremely hard.Extremely high m.p. | diamond, quartz, sand |
| Metallic  | sea of mobile electrons between lattice of cations | metals (left of staircase) | good electrical and thermal conductor.high melting and boiling point.shiny, malleable.react with acids to form H2 |  |