Name _____ Section _____ Date _____

# Chemistry Activity 06-09 Determining Bond Types from Properties

Seven chemicals were observed for their properties. In table 1, for each of the three bond types, record the general property for the classification type. Then, using the observed properties in table 2, classify the seven chemicals according to their properties.

**General Properties of Bond Types**

| | Ionic Bonds | Covalent Bonds | Metallic Bonds |
|---|---|---|---|
| Appearance | | | |
| Solubility in Water | | | |
| Relative Melting Point | | | |
| Solid Conductivity | | | |
| Molten Conductivity | | | |
| Conductivity in Solution | | | |

**Table 1**

**Classify Bond Types from General Properties**

| | NaCl | Sucrose | Copper | Calcium Chloride | Diamond | Mercury | $C_{10}H_8$ |
|---|---|---|---|---|---|---|---|
| Appearance | white, crystalline | white, crystalline | brown shiney | white | colorless crystals | Shiny silver liquid | Tan powder |
| Solubility in water | yes | yes | no | yes | no | no | no |
| Relative Melting Point | very high | low | very high | very high | does not melt | N/A | low |
| Solid Conductivity | no | no | yes | no | no | N/A | no |
| Molten Conductivity | yes | no | yes | yes | N/A | yes | no |
| Conductivity in Solution | yes | no | N/A | yes | N/A | N/A | N/A |
| Classification | | | | | | | |

**Table 2**