

CLASSIFICATION AND PROPERTIES OF SOLIDS

<u>Class</u>	<u>Examples</u>	<u>Bonding Type</u>	<u>Melting Point</u>	<u>Solid Properties</u>
ionic	salts	anions \leftrightarrow cations; electrostatic attraction	high	brittle; solid has poor electrical conductivity
metallic	metal elements, alloys	cations in sea of electrons	medium	pliable; electrical and thermal conductivity
molecular	sugar, ice, nonmetal elements	intermolecular forces	low	soft; variety of properties, generally poor conductivity
network	diamond, silicates, graphite, clays	covalent bonds (3 dimensional) \Rightarrow bonds and IMFs (2 dimensional)	very high \Rightarrow medium	very hard \Rightarrow soft; generally poor conductivity
amorphous	glass, plastics	covalent bonds and intermolecular forces	wide range; may decompose before melting	no ordered crystals; generally poor conductivity