

## Types of Solids

1. Describe an amorphous solid. Give an example.

The particles of an amorphous solid have no order. One example would be plastic wrap.

2. Describe a crystalline solid, and give an example.

The particles of a crystalline solid are highly ordered in a crystalline lattice. There is long range order throughout a sample. An example is diamond.

3. List the four types of crystalline solids and give an example of each. Indicate the types of particles in each class of solid.

Ionic solids: The particles are ions. NaCl is an example.

Molecular solids: The particles can be molecules or atoms. Solid water, ice, is an example.

Metallic solids: The particles are cations surrounded by a sea of electrons. Gold is an example.

Covalent Network solids: Particles are covalently bonded to one another. An example is graphite.

4. Boron Nitride, BN, is a crystalline solid that has a melting point of 2973 °C. It does not conduct electricity in its molten state and does not dissolve in water, acids, or bases. What class of solid is this?

This would be a covalent network solid

5. A crystalline solid has a melting point of 186 °C. It does not conduct an electrical current in its molten state or when dissolved in water. This is an example of what type of solid?

This would be a molecular solid.