

13.3 - The Nature of Solids

Melting point (mp) - temperature at which a solid changes to a liquid (disruptive vibrations are strong enough to overcome the attractions holding them in fixed positions)

↑
same temps

↓
freezing point (fp) - temperature at which a liquid changes to a solid

crystal - particles are arranged in an orderly, repeating, 3-dimensional pattern

* There are 7 crystal systems*

unit cell - smallest group of particles within a crystal that retains the geometric shape

* There are 14 unit cells *

allotropes - two or more different molecular forms of the same element in the same physical state

ex) carbon → diamond, graphite, buckyball

amorphous solid - lacks an ordered internal structure

ex) rubber, plastic, asphalt

glass - a type of amorphous solid - a transparent fusion product of inorganic substances that have cooled to a rigid state without crystallizing.