Quick Review:

What is the difference between an ionic formula and a molecular formula?

The formula of a covalent compound shows its exact composition.

The formula of an ionic compound shows the simplest ratio of ions.

Section 6-4: Metallic Bonding

6-4-1 Describe the electron-sea model of metallic bonding. Explain why metals are good electrical conductors.

In the electron-sea model of bonding the valence electrons are free to move in the large number of vacant orbitals. These empty overlapping orbitals (the "p", "d" and "f" orbitals) allow the electrons to delocalize with the ability to move freely from one atom to the next. Metals are such good conductors due to the freedom with which the valence electron can move.

Section 6-4: Metallic Bonding

6-4-2 Explain why metal surfaces are shiny.

Metals are shiny or have luster due to the many available orbitals, which can absorb and give off a wide spectrum of light.

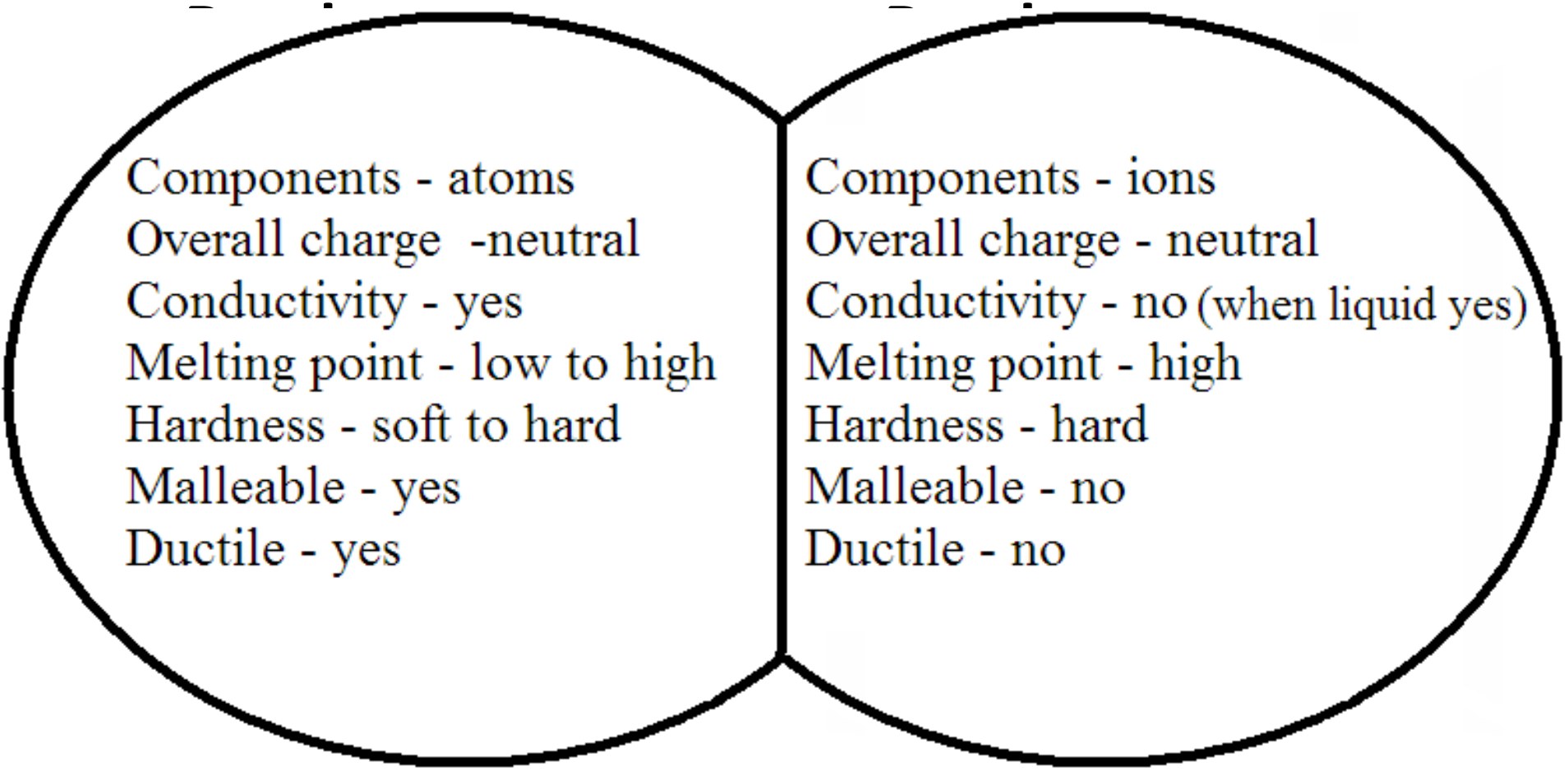
Section 6-4: Metallic Bonding

6-4-3 Explain why metals are malleable and ductile but ionic-crystalline compounds are not.

The metallic bond is the same in all directions throughout the metallic structure allowing the atoms to slide past each other. This sliding is why metals are ductile and malleable. Ionic compound must break bonds to slide past one another, which causes the ionic material to split and crack.

Section 6-4: Metallic Bonding

6-4-3 Explain why metals are malleable and ductile but ionic-crystalline compounds are not.



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