

CHAPTER OVERVIEW

22: Metals

Approximately three-quarters of the known elements are metals and conduct both heat and electricity very well. Moreover, they have shiny surfaces; they are capable of being shaped by hammering (malleable) and also of being drawn into wires (ductile). These properties can be understood in terms of [metallic bonding](#) in which valence electrons are delocalized over an entire metallic crystal. The strength of metallic bonding varies roughly as the number of electrons available in this sea. Chemical properties of the metals include a tendency to lose electrons and form positive ions, and the ability of their oxides to function as bases. The extent of these characteristics varies from one metal to another.

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