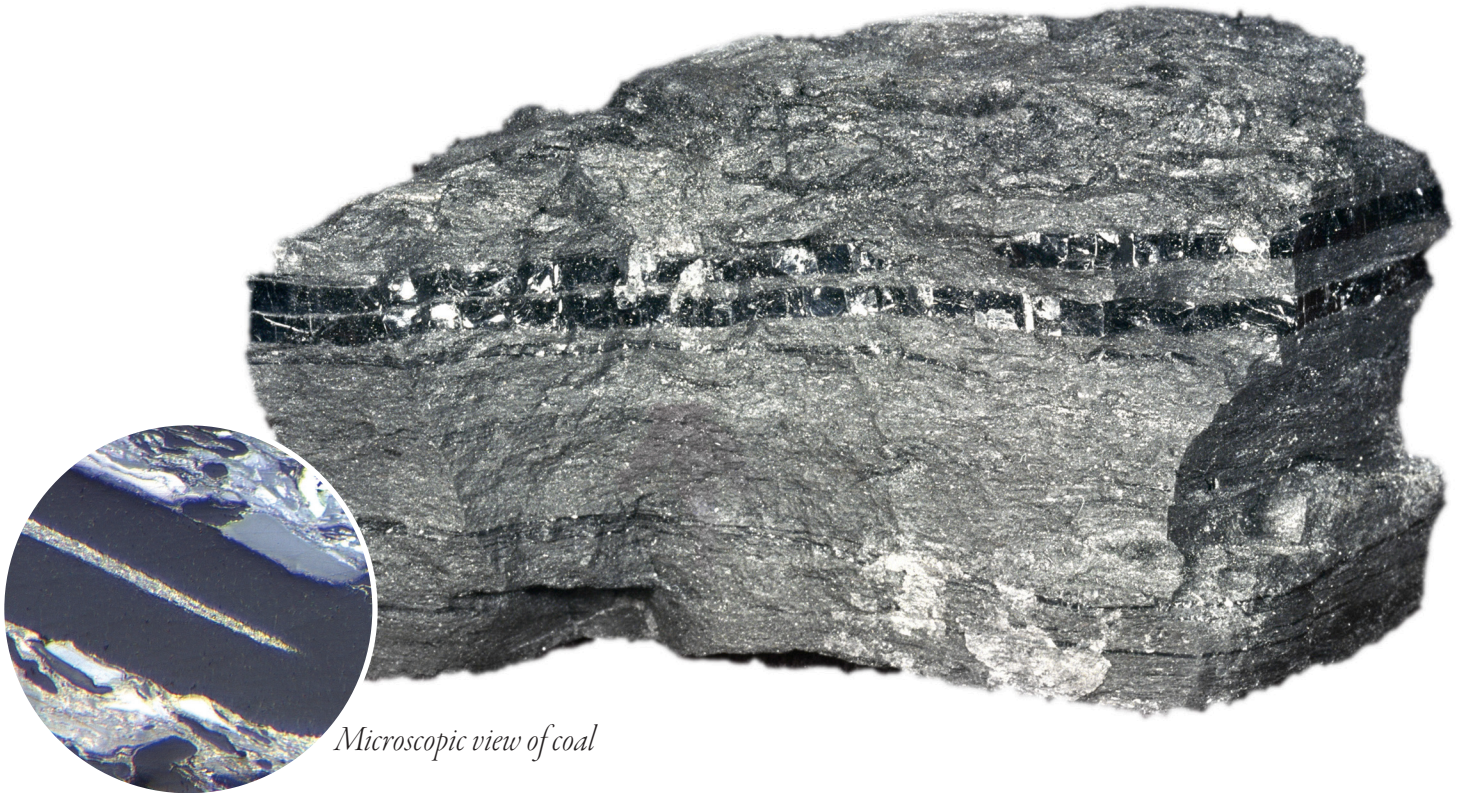


Composition of Coal



Microscopic view of coal

Coal seems to be simply a black, somewhat shiny rock that burns. However, most coals are not simple uniform substances but are made of bright and dull bands and are, in actuality, complex mixtures of several basic groups of organic compounds.

Coal petrologists study coals to determine their composition. The term “maceral” describes components of chemically and physically distinct substances that have unique properties. For example, vitrinite is a maceral that is found in bright coal, and fusain is dull material. By examining various coals through a microscope, they can be classified according to maceral composition.

Petrographic studies of coal tell us about the environment in which the coal formed and its chemical nature. Understanding the chemical properties of coal allows us to determine the best uses for particular coal types. Petrographic data help scientists design technological processes for making synthetic natural gas, petroleum products, coke, or other special products. The maceral composition of coal also affects the properties of the byproducts of coal combustion, such as fly ash and flue-gas desulfurization materials, which have many uses as well.