



Minerals

Goethite

Fe⁺³ O (OH) (See also Limonite)

Crystallography:

Orthorhombic; $2/m2/m2/m$. Acicular or rarely in distinct prismatic, vertically striated crystals. Also massive, reniform, stalactitic, or in radiating fibrous aggregates. Foliated.

Physical Properties:

Cleavage: {010} perfect. Fracture uneven; brittle.

Hardness: 5.0-5.5.

Specific Gravity: 4.37 (may be lower for impure material).

Luster: Adamantine to dull, silky in certain varieties.

Color: Yellowish-brown to dark brown; subtranslucent to opaque.

Streak: Yellowish-brown.

Composition/Features:

The so-called bog ore, goethite is a hydrous iron oxide distinguished from hematite by its streak and from limonite by its crystalline nature. Fusible at 5-5.5 with difficulty. Soluble in HCl.

Occurrence/Use:

A common mineral often formed under oxidizing conditions as a weathering product of iron-rich minerals, or as an inorganic or biogenic precipitate from water. An ore of iron. A similar species, limonite, is used mainly as a field term to refer to hydrous iron oxides of uncertain identity.