



Minerals

Quartz (variety Smoky)

SiO_2

Crystallography:

Hexagonal -R; 32 (low-quartz.) Hexagonal; 622 (high-quartz.) Crystals are commonly prismatic, with prism faces horizontally striated, and usually terminated by a positive and negative rhombohedrons (giving the appearance of a hexagonal dipyrmaid.) Also massive, coarsely crystalline.

Physical Properties:

Cleavage: Generally none; occasional indistinct rhombohedral parting. Fracture conchoidal; brittle.

Hardness: 7.0.

Specific Gravity: 2.65.

Luster: Vitreous.

Color: Smoky yellow to dark smoky brown; transparent to translucent.

Streak: White.

Composition/Features:

Most nearly a pure chemical compound of silicon and oxygen with constant physical properties. Piezoelectric and pyroelectric. Characterized by its smoky color, glassy luster, conchoidal fracture, hardness, and crystal form. Infusible. Insoluble except in hydrofluoric acid.

Occurrence/Use:

Natural crystals relatively common. Dark color is attributed to free silicon formed by exposure to radioactive source. No dominant impurities. Optical varieties used as gemstones.