

# Biotite

Benjamin Bass

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**General Mineral Formula:**  $K(Fe, Mg)_3AlSi_3O_{10}(OH)_2$

**Mineral Chemical Class:** Phyllosilicates

**Specific Gravity:** 2.9 - 3.2

**Hardness:** 5-6

**Cleavage:** 2,2 prismatic

**Luster:** Vitreous, silky

**Streak:** Colorless

**Characteristic Color(s):** White, light to dark grey. & many in between.

**Crystal System:** Monoclinic

**Crystal Class:** 2/m

**Crystal Description (common forms, habit, etc.):** As elongated prismatic crystals. in bladed groups. Columnous, fibrous. Also radiating as wheat sheaf formations in thin, hairlike masses and tough interlocking fibers.

<sup>1</sup>Cleavage produces thin elastic folia.

<sup>2</sup>Black and vitreous in hand sample

**Environment (where you find the material):** In contact menamorphic rocks in hornfels and skarns. Serpentine deposits. Commonly marble of metamorphosed calcite.

**Common Mineral Associations (in samples, also consult text, notes):** Albite, Barite, Chlorite, Epidote, Muscovite.

**Scientific Usage/Significance:** Prone to dramatic expansion when heated.

**Industrial or Social Use/Significance:** Additive in pot soil for expansion.

**Environmental Significance:** Weathered Vermiculite can expand and is an important part of soils.