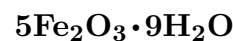


## Ferrihydrite



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**Crystal Data:** Hexagonal. *Point Group:* n.d. As poorly crystalline spheres, to 50  $\mu\text{m}$ , in globular aggregates.

**Physical Properties:** Hardness = n.d.  $D(\text{meas.}) = \text{n.d.}$   $D(\text{calc.}) = \text{n.d.}$

**Optical Properties:** [Opaque.] *Color:* Yellow-brown to dark brown.  
*Optical Class:* Uniaxial.  $\omega = \text{n.d.}$   $\epsilon = \text{n.d.}$

**Cell Data:** *Space Group:* n.d.  $a = 5.08$   $c = 9.4$   $Z = [1]$

**X-ray Powder Pattern:** Synthetic.

2.50 (100), 2.21 (80), 1.96 (80), 1.48 (80), 1.51 (70), 1.72 (50)

**Chemistry:** Natural material appears not to have been analyzed; confirmation is from the correspondence of X-ray powder pattern and other physical properties with synthetic material. Most ferrihydrites contain appreciable silica, chemically adsorbed.

**Occurrence:** Widespread in the soluble fraction of soils and weathered rock. In precipitates around cold and hot springs, especially those supporting iron-metabolizing bacteria; in acid mine effluent.

**Association:** Goethite, lepidocrocite, hematite, manganese oxides.

**Distribution:** Widespread. Well-characterized from: the Ridder (Leninogorsk) and Belousovsk Pb–Zn mines, Rudnyi Altai, Kazakhstan. At Joensuu, Pohjiskarjala, and elsewhere in Finland. From Killiechronan, southwest of Salen, Isle of Mull, Scotland. In the Clara mine, near Oberwolfach, Black Forest, Germany. In the USA, at Mineral Hill, Delaware Co., Pennsylvania; at Hot Springs, Garland Co., Arkansas; and in the Niagara basin of Lake Ontario.

**Name:** For FERRIc iron in its composition, and a HYDRated mineral.

**Type Material:** Vernadsky Geological Museum, Moscow, 51508; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 76642.

**References:** (1) Chukhrov, F.V., B.B. Zvyagin, A.I. Gorshkov, L.P. Ermilova, and V.V. Balashova (1973) Ferrihydrite. *Izv. Akad. Nauk SSSR*, 23–33 (in Russian). (2) (1975) *Amer. Mineral.*, 60, 485–486 (abs. ref. 1). (3) Eggleton, R.A. and R.W. Fitzpatrick (1988) New data and a revised structural model for ferrihydrite. *Clays and Clay Minerals*, 36, 111–124. (4) Farmer, V.C. (1992) Possible confusion between so-called ferrihydrites and hisingerites. *Clay Minerals*, 27, 373–378. (5) Drits, V.A., B.A. Sakharov, A.L. Salyn, and A. Manceau (1993) Structural model for ferrihydrite. *Clay Minerals*, 28, 185–207.