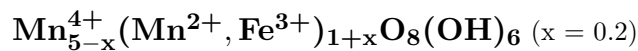


## Janggunite



©2001-2005 Mineral Data Publishing, version 1

**Crystal Data:** Orthorhombic. *Point Group:* n.d. As flaky crystals, to 0.13 mm, elongated || cleavage and flattened on {010}, probable; in radiating groups, dendritic or arborescent masses, and in colloform bands and very fine-grained aggregates.

**Physical Properties:** *Cleavage:* One direction, perfect. *Tenacity:* Very fragile [*sic*]. Hardness = 2–3 D(meas.) = 3.59 D(calc.) = 3.58

**Optical Properties:** Opaque. *Color:* Black; grayish white to gray in reflected light. *Streak:* Brownish black to dark brown. *Luster:* Dull. *Optical Class:* Biaxial. *Pleochroism:* Distinct; whitish to light gray in oil. *Anisotropism:* Very strong; yellowish brown with bluish tint, to gray. *Bireflectance:* Observed. R<sub>1</sub>–R<sub>2</sub>: 13–15

**Cell Data:** *Space Group:* n.d.  $a = 9.324$   $b = 14.05$   $c = 7.956$   $Z = 4$

**X-ray Powder Pattern:** Janggun mine, South Korea. 9.34 (s), 7.09 (s), 3.547 (s), 3.101 (s), 4.62 (m), 4.17 (m), 2.469 (m)

### Chemistry:

	(1)
MnO <sub>2</sub>	74.91
Fe <sub>2</sub> O <sub>3</sub>	4.19
MnO	11.33
PbO	0.03
H <sub>2</sub> O <sup>+</sup>	9.46
Total	99.92

(1) Janggun mine, South Korea; Fe and Pb by electron microprobe, total Fe as Fe<sub>2</sub>O<sub>3</sub>, H<sub>2</sub>O as OH verified by IR; corresponds to  $\text{Mn}_{4.86}^{4+}(\text{Mn}_{0.90}^{2+}\text{Fe}_{0.30}^{3+})_{\Sigma=1.20}\text{O}_{8.09}(\text{OH})_{5.92}$ .

**Occurrence:** Formed at a late stage of oxidation in a cementation zone of a manganese deposit.

**Association:** Nsutite, todorokite, calcite, rhodochrosite.

**Distribution:** In the Janggun mine, Bonghwa district, South Korea.

**Name:** For the Janggun mine, South Korea, its first locality.

**Type Material:** National Museum of Natural History, Washington, D.C., USA, 143150.

**References:** (1) Kim, S.J. (1977) Janggunite, a new manganese hydroxide mineral from the Janggun mine, Bonghwa, Korea. *Mineral. Mag.*, 41, 519–523. (2) (1978) *Amer. Mineral.*, 63, 794 (abs. ref. 1).