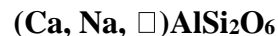


**Tissintite**

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As wormy aggregates of elongate to irregularly shaped cellular crystals to 2×2×4 μm.

**Physical Properties:** *Cleavage:* n.d. *Tenacity:* n.d. *Fracture:* n.d. *Hardness:* = n.d. D(meas.) = n.d. D(calc.) = 3.32

**Optical Properties:** *Color:* n.d. *Streak:* n.d. *Luster:* n.d. *Optical Class:* n.d.

**Cell Data:** *Space Group:* C2/c. *a* = 9.21 (17) *b* = 9.09 (4) *c* = 5.20 (2) *β* = 109.6 (9)° *Z* = 4

**X-ray Powder Pattern:** n.d.

|                                |             |
|--------------------------------|-------------|
| <b>Chemistry:</b>              | (1)         |
| SiO <sub>2</sub>               | 53.0        |
| TiO <sub>2</sub>               | 0.08        |
| Al <sub>2</sub> O <sub>3</sub> | 29.2        |
| FeO                            | 0.96        |
| MgO                            | 0.18        |
| CaO                            | 12.5        |
| Na <sub>2</sub> O              | 4.7         |
| <u>K<sub>2</sub>O</u>          | <u>0.06</u> |
| Total                          | 100.68      |

(1) Tissint martian meteorite; average electron microprobe analysis; corresponds to (Ca<sub>0.45</sub>Na<sub>0.31</sub>□<sub>0.24</sub>)(Al<sub>0.97</sub>Fe<sub>0.03</sub>Mg<sub>0.01</sub>)(Si<sub>1.80</sub>Al<sub>0.20</sub>)O<sub>6</sub>.

**Mineral Group:** Clinopyroxene containing 42-60 mol% of the Ca-Eskola component.

**Occurrence:** In maskelynite (shocked plagioclase) and is commonly observed included within, or in contact with, shock-melt pockets in a Martian meteorite. Perhaps forms from amorphous plagioclase during decompression.

**Association:** Maskelynite (shocked plagioclase).

**Distribution:** From the Tissint Martian meteorite [TL].

**Name:** For the Martian meteorite *Tissint*, which fell near Tissint, Morocco on 18 July 2011.

**Type Material:** Meteorite Collection of the Frank H. McClung Museum, University of Tennessee, Knoxville, USA.

**References:** (1) Ma, C., O. Tschauer, J.R. Beckett, Y. Liu, G.R. Rossman, K. Zhuravlev, V. Prakapenka, P. Dera, and L.A. Taylor (2015) Tissintite, (Ca,Na,□)AlSi<sub>2</sub>O<sub>6</sub>, a highly-defective, shock-induced, high-pressure clinopyroxene in the Tissint martian meteorite. *Earth and Planetary Science Letters*, 422, 194-205. (2) Rucks, M.J., M.L. Whitaker, T.D. Glotch, J.B. Parise, S.J. Jaret, T. Catalano, and M.D. Dyar (2018) Making tissintite: Mimicking meteorites in the multi-anvil. *Amer. Mineral.*, 103, 1516-1519.