Tissintite $(Ca, Na, \square)AlSi_2O_6$

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.

Chemistry:

	(1)
SiO_2	53.0
TiO_2	0.08
Al_2O_3	29.2
FeO	0.96
MgO	0.18
CaO	12.5
Na_2O	4.7
K_2O	0.06
Total	100.68

(1) Tissint martian meteorite; average electron microprobe analysis; corresponds to $(Ca_{0.45}Na_{0.31}\square_{0.24})(Al_{0.97}Fe_{0.03}Mg_{0.01})(Si_{1.80}Al_{0.20})O_6$.

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. Tschauner, J.R. Beckett, Y. Liu, G.R. Rossman, K. Zhuravlev, V. Prakapenka, P. Dera, and L.A.Taylor (2015) Tissintite, $(Ca,Na,\square)AlSi_2O_6$, 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.