

**Crystal Data:** Cubic. *Point Group:*  $4/m\bar{3}2/m$ . In polycrystalline aggregates to 20  $\mu\text{m}$ .

**Physical Properties:** *Cleavage:* n.d. *Tenacity:* n.d. *Fracture:* n.d. *Hardness* = n.d.  
D(meas.) = n.d. D(calc.) = 4.26

**Optical Properties:** Translucent. *Color:* Bluish green. *Streak:* n.d. *Luster:* n.d.  
*Optical Class:* n.d.

**Cell Data:** *Space Group:*  $Fd\bar{3}m$ .  $a = 8.1629(2)$   $Z = 8$

**X-ray Powder Pattern:** Tissint Martian meteorite.  
2.461 (100), 1.443 (57), 2.041 (50), 1.571 (20), 1.063 (13), 1.245 (10), 0.943 (10)

<b>Chemistry:</b>	(1)
SiO <sub>2</sub>	34.9
FeO	43.8
MgO	21.1
MnO	0.75
Total	100.55

(1) Tissint Martian meteorite; average electron microprobe analysis supplemented by Raman spectroscopy; corresponds to (Fe<sub>1.06</sub>Mg<sub>0.91</sub>Mn<sub>0.02</sub>)Si<sub>1.01</sub>O<sub>4</sub>.

**Polymorphism & Series:** Solid solution series with ringwoodite.

**Mineral Group:** Spinel supergroup, oxyspinel group.

**Occurrence:** From the transformation of fayalite-rich rims of olivine megacrysts or Fe-rich microphenocrysts in contact with shock melt pockets in an olivine-phyric shergottite meteorite [TL].

**Association:** Bridgmanite, ringwoodite, wüstite, stishovite, olivine, ilmenite.

**Distribution:** In the Tissint Martian meteorite [TL]. Possible terrestrial occurrences are included in the references.

**Name:** Honors California Institute of Technology geophysicist Thomas J. *Ahrens* (1936-2010) for pioneering and fundamental contributions to high-pressure mineral physics and planetary sciences, many of which involved the interpretation of shock effects in natural rocks and synthetic materials.

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

**References:** (1) Ma, C., O. Tschauer, J.R. Beckett, Y. Liu, G.R. Rossman, S.V. Sinogeikin, J.S. Smith, and L.A. Taylor (2016) Ahrensite,  $\gamma$ -Fe<sub>2</sub>SiO<sub>4</sub>, a new shock-metamorphic mineral from the Tissint meteorite: Implications for the Tissint shock event on Mars. *Geochimica et Cosmochimica Acta*, 184, 240-256. (2) Glassley, W.E., J.A. Korstgård, and K. Sørensen (2016) Further observations related to a possible occurrence of terrestrial ahrensite. *Amer. Mineral.*, 101, 2347-2350. (3) Díaz-Martínez, E. and J. Ormó (2003) An alternative hypothesis for the origin of ferroan ringwoodite [ahrensite] in the pumice of El Gasco (Cáceres, Spain). *Lunar and Planetary Science*, XXXIV, 1318.