

**Crystal Data:** Isometric. *Point Group:*  $4/m\bar{3}2/m$ . As small zones and irregular spots in kimzeyite-kerimasite or rarely as single crystals to 10  $\mu\text{m}$ .

**Physical Properties:** *Cleavage:* None. *Fracture:* Irregular.  
*Tenacity:* n.d. *Hardness:* = n.d. *D(meas.):* = n.d. *D(calc.):* = 4.301

**Optical Properties:** Transparent. *Color:* Pale brown to yellow. *Streak:* Ashy yellow.  
*Luster:* n.d.  
*Optical Class:* Isotropic.  $n = \sim 1.9$

**Cell Data:** *Space Group:*  $Ia\bar{3}d$ .  $a = 12.50(3)$   $Z = 8$

**X-ray Powder Pattern:** Calculated pattern.

1.670 (100), 2.552 (88), 4.419 (65), 3.125 (60), 2.795 (47), 1.976 (27), 1.333 (26)

|                                |       |
|--------------------------------|-------|
| <b>Chemistry:</b>              | (1)   |
| UO <sub>3</sub>                | 0.76  |
| Nb <sub>2</sub> O <sub>5</sub> | 0.08  |
| Sb <sub>2</sub> O <sub>5</sub> | 5.99  |
| SiO <sub>2</sub>               | 4.19  |
| TiO <sub>2</sub>               | 7.82  |
| ZrO <sub>2</sub>               | 7.90  |
| SnO <sub>2</sub>               | 23.96 |
| HfO <sub>2</sub>               | 0.20  |
| Al <sub>2</sub> O <sub>3</sub> | 11.06 |
| Sc <sub>2</sub> O <sub>3</sub> | 0.15  |
| Fe <sub>2</sub> O <sub>3</sub> | 10.05 |
| CaO                            | 36.02 |
| FeO                            | 0.79  |
| Total                          | 98.96 |

(1) Upper Chegem Caldera, Northern Caucasus, Kabardino-Balkaria, Russia; average of 7 electron microprobe analyses, ZrO<sub>4</sub>, TiO<sub>4</sub>, and Fe<sup>3+</sup> confirmed by spectroscopy; corresponds to (Ca<sub>2.97</sub>Fe<sup>2+</sup><sub>0.03</sub>) $\Sigma=3.00$ (Sn<sub>1.02</sub>Zr<sub>0.41</sub>Ti<sub>0.26</sub>Sb<sup>5+</sup><sub>0.24</sub>Fe<sup>2+</sup><sub>0.03</sub>U<sup>6+</sup><sub>0.02</sub>Sc<sub>0.01</sub>Hf<sub>0.01</sub>) $\Sigma=2.00$ (Al<sub>1.39</sub>Fe<sup>3+</sup><sub>0.80</sub>Si<sub>0.45</sub>Ti<sup>4+</sup><sub>0.36</sub>) $\Sigma=3.00$ O<sub>12</sub>.

**Mineral Group:** Schorlomite group of the garnet supergroup.

**Occurrence:** In a metasomatically-altered (sanidinite facies), carbonate-silicate xenolith in ignimbrite.

**Association:** Lakargiite, tazheranite, baddeleyite, baghdadite, magnesioferrite.

**Distribution:** From altered xenolith no.7 located 500 m from the Vorlan peak in the central part of the Upper Chegem Caldera, Northern Caucasus, Kabardino-Balkaria, Russia.

**Name:** Honors Irina Teodorovna Rass, staff member since 1962 of the D. Korzhinskii Laboratory of Metamorphism and Metasomatism, Institute of Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry (IGEM), Russian Academy of Sciences, Moscow, Russia.

**Type Material:** A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (4026/1).

**References:** (1) Galuskina, I.O., E.V. Galuskin, K. Prusik, V.M. Gazeev, N.N. Pertsev, and P. Dzierzanowski (2013) Irinarassite Ca<sub>3</sub>Sn<sub>2</sub>SiAl<sub>2</sub>O<sub>12</sub> - New garnet from the Upper Chegem Caldera, Northern Caucasus, Kabardino-Balkaria, Russia. *Mineral. Mag.*, 77(6), 2857-2866. (2) (2015) *Amer. Mineral.*, 100, 2009-2010 (abs. ref. 1).