

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. As imperfect prismatic crystals, to 2.5 mm, flattened on {001}; in divergent sprays. *Twining:* Polysynthetic twins \parallel (100).

Physical Properties: *Cleavage:* Perfect on {001}. *Fracture:* n.d. *Tenacity:* n.d. *Hardness = n.d.* *D(meas.) = n.d.* *D(calc.) = 3.56*

Optical Properties: Transparent. *Color:* Dark brown. *Streak:* Brown. *Luster:* Vitreous. *Optical Class:* Biaxial (-). α (calc.) = 1.722 β = 1.782(5) γ = 1.796(5) $2V$ (meas.) = 50(10)° $2V$ (calc.) = n.d. *Dispersion:* Medium, $r > v$.

Cell Data: *Space Group:* $P\bar{1}$. $a = 7.0993(4)$ $b = 7.6370(5)$ $c = 7.7037(4)$ $\alpha = 79.58(1)^\circ$ $\beta = 62.62(1)^\circ$ $\gamma = 76.47(1)^\circ$ $Z = 1$

X-ray Powder Pattern: Eifel Mountains, Rhineland-Palatinate (Rheinland-Pfalz), Germany. 2.885 (100), 1.774 (37), 3.72 (32), 3.000 (26), 3.199 (25), 2.691 (21), 2.397 (21)

Chemistry:	(1)
SiO ₂	43.80
Al ₂ O ₃	1.08
Fe ₂ O ₃	4.42
Mn ₂ O ₃	[2.91]
MnO	[37.47]
CaO	10.78
<u>MgO</u>	<u>0.36</u>
Total	100.82

(1) Eifel Mountains, Rhineland-Palatinate, Germany; average of 4 electron microprobe analyses, supplemented by IR spectroscopy, MnO/Mn₂O₃ calculated from structural data and charge-balance constraints; considering structural analysis, corresponds to $\text{Mn}_{2.00}(\text{Mn}_{1.33}\text{Ca}_{0.67})_{\Sigma=2.00}(\text{Mn}^{2+}_{0.50}\text{Mn}^{3+}_{0.28}\text{Fe}^{3+}_{0.15}\text{Mg}_{0.07})_{\Sigma=1.00}(\text{Ca}_{0.80}\text{Mn}^{2+}_{0.20})_{\Sigma=1.00}(\text{Si}_{5.57}\text{Fe}^{3+}_{0.27}\text{Al}_{0.16})_{\Sigma=6.00}\text{O}_{18}$.

Mineral Group: Bustamite group.

Occurrence: A pneumatolitic phase in miarolitic cavities in sanidine.

Association: Sanidine, nosean, rhodonite, tephroite, magnetite, a pyrochlore-group mineral.

Distribution: From the In den Dellen near Mendig, Laacher Lake area, Eifel Mountains, Rhineland-Palatinate (Rheinland-Pfalz), Germany.

Name: For *Mendig*, the town in Germany, near the quarry that produced the first specimens.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (4420/1).

References: (1) Chukanov, N.V., S.M. Aksenov, R.K. Rastsvetaeva, K.V. Van, D.I. Belakovskiy, I.V. Pekov, V.V. Gurzhiy, W. Schüller, and B. Ternes (2015) Mendigite, $\text{Mn}_2\text{Mn}_2\text{MnCa}(\text{Si}_3\text{O}_9)_2$, a new mineral species of the bustamite group from the Eifel Volcanic Region, Germany. *Zap. Ross. Mineral. Obsch.*, 144, 48-60 (in Russian, English abstract); *Geology of Ore Deposits*, 57(8), 721-731 (in English). (2) (2016) *Amer. Mineral.*, 101, 1715 (abs. ref. 1).