

Schüllerite**Crystal Data:** Triclinic. *Point Group:* 1. As flattened crystals to 2 mm.**Physical Properties:** *Cleavage:* Perfect on {001}. *Fracture:* n.d. *Tenacity:* Brittle.
Hardness = 3-4 D(meas.) = n.d. D(calc.) = 3.974**Optical Properties:** Translucent. *Color:* Brown. *Streak:* White. *Luster:* n.d.
Optical Class: Biaxial (-). $\alpha = 1.756(3)$ $\beta = 1.773(4)$ $\gamma = 1.780(4)$ $2V = 40(20)^\circ$
Dispersion: Weak, $r < v$. *Pleochroism:* Medium, brown to dark brown. *Absorption:* $X > Y > Z$.
Orientation: $Z \wedge c = 20^\circ$.**Cell Data:** *Space Group:* P1. $a = 5.4027(1)$ $b = 7.066(4)$ $c = 10.2178(1)$ $\alpha = 99.816(1)^\circ$
 $\beta = 99.624(1)^\circ$ $\gamma = 90.084(1)^\circ$ $Z = 1$ **X-ray Powder Pattern:** Löhley quarry, Eifel region, Rheinland-Pfalz, Germany.
2.791 (100), 2.144 (52), 2.664 (46), 3.308 (45), 2.609 (36), 9.96 (29), 3.203 (29)

Chemistry:	(1)		(1)
Na ₂ O	3.55	SiO ₂	26.12
K ₂ O	0.55	TiO ₂	11.17
MgO	3.89	Al ₂ O ₃	1.33
CaO	2.62	F	2.12
SrO	1.99	<u>-O = F₂</u>	<u>0.89</u>
BaO	28.09	Total	98.98
FeO	3.43		
Fe ₂ O ₃	8.89		
Nb ₂ O ₅	2.45		

(1) Löhley quarry, Eifel region, Rheinland-Pfalz, Germany; average of 5 electron microprobe analyses, Fe³⁺:Fe²⁺ calculated from X-ray emission spectra; corresponding to (Ba_{1.68}Sr_{0.18}K_{0.11}Na_{1.05}Ca_{0.43}Mn_{0.47}Mg_{0.88}Fe²⁺_{0.44}Fe³⁺_{1.02}Ti_{1.28}Nb_{0.17}Al_{0.24}) $\Sigma=7.95$ Si_{3.98}O_{16.98}F_{1.02}.**Occurrence:** A late pneumatolitic mineral in miarolitic cavities in alkaline basalt.**Association:** Nepheline, leucite, augite, phlogopite, magnetite, titanite, fresnoite, barytolamprophyllite, fluorapatite, perovskite, pyrochlore.**Distribution:** At the Löhley quarry, Eifel volcanic region, near Üdersdorf, Rheinland-Pfalz (Rhineland-Palatinate), Germany.**Name:** Honors Willi Schüller (b 1953), prominent mineral collector, specialist in the mineralogy of Eifel, and collector of the first specimens.**Type Material:** A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia; 3995/2 and 3995/1.**References:** (1) Chukanov, N.V., R.K. Rastsvetaeva, S.N. Britvin, A.A. Viryus, D.I. Belakovskiy, I.V. Pekov, S.M. Aksenov, and B. Ternes (2011) Schüllerite, Ba₂Na(Mn,Ca)(Fe³⁺,Mg,Fe²⁺)₂Ti₂(Si₂O₇)₂(O,F)₄, a new mineral from Eifel volcanic region, Germany. Zap. Ross. Mineral. Obshch., 140(1), 67-75 (in Russian, English abstract). English translation: Geol. Ore Deposits, (2011), 53(8), 767-774. (2) Rastsvetaeva, R.K., S.M. Aksenov, and N.V. Chukanov (2011) Crystal structure of schüllerite, a new mineral of the heterophyllosilicate family. Doklady Akademii Nauk, 437(4), 499-503 (in Russian). English translation: Doklady Chemistry (2011), 437, 90-94. (3) (2013) Amer. Mineral., 98, 813 (abs. refs. 1 & 2).