

MinIdent-Win - kaersutite

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Formula: (Na,K,□)(Ca,Na)₂[(Mg,Fe²⁺)_{3-2.5}(Ti)_{0-0.75}(Mg,Ti,Fe²⁺)][Si₄₋₅Al₁₋₅(Si,Al)]

Status: Mineral name is IMA approved or traditional

Kretz abbreviation: Krs

Level: Species

First Described in 1884

Parents: kaersutite-series

Symmetry: Monoclinic

Space Group: C2/m

Mean Atomic Number: 13.2

Z number: 2

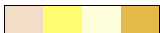


Diffraction Values: 2.690, 3.110, 8.380, 3.360, 2.548

ICDD (TM) Number: 17-478

	Minimum	Maximum	Average	Std. Dev.
a (Å)	9.807	9.900	9.850	
b (Å)	18.017	18.210	18.041	
c (Å)	5.307	5.400	5.309	
Alpha	90.000	90.000	90.000	
Beta	105.388	106.000	105.409	
Gamma	90.000	90.000	90.000	
Volume	904.092	935.795	909.497	

	Minimum	Maximum	Average	Std. Dev.
n(Alpha)	1.600	1.697	1.677	0.013
n(Beta)	1.668	1.741	1.700	0.019
n(Gamma)	1.676	1.772	1.714	0.029
Max. birefringence	0.030	0.100	0.040	0.020
2V Gamma	96	160	103	

Optical Sign: -ve **OAP Orientation:** Parallel (010)

C(Alpha)		Pale Yellowish Brown, Yellow, Pale Yellow, Brownish Yellow
C(Beta)		Reddish Brown, Red
C(Gamma)		Dark Brown, Dark Reddish Brown, Greenish Brown
Dispersion	R>V	

	Minimum	Maximum	Average	Std. Dev.
Mohs	5.0	6.0	5.5	
Vickers	483	771	618	
Density	3.05	3.34	3.23	0.07

	Total Min Wt (%)	Anal. Min Wt (%)	Average Wt (%)	Anal. Max Wt (%)	Total Max Wt (%)	Average Atomic	Coordination
H	0.0000	0.0000	0.0815	0.2686	0.2686	0.7281	
C	0.0000	0.0000	0.0022	0.0437	0.0437	0.0017	
O	39.5214	40.4566	42.5096	44.0303	46.7283	23.9732	
F	0.0000	0.0000	0.0565	0.4200	2.3065	0.0268	
Na	0.8323	0.9199	1.9896	3.4422	5.5180	0.7809	12 8
Mg	4.3906	4.3906	7.2881	9.0586	12.5725	2.7051	6
Al	3.0273	3.0273	6.6983	8.1928	8.2079	2.2402	4 6
Si	16.6118	16.6642	18.3096	19.3800	22.1885	5.8815	4
P	0.0000	0.0000	0.0079	0.0960	0.0960	0.0023	
S	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
K	0.0000	0.4151	1.1349	2.0422	2.3237	0.2619	12
Ca	4.3849	7.4329	8.4444	9.8271	9.8271	1.9011	8
Ti	2.6378	2.6378	3.8160	6.1929	7.1830	0.7188	6
V	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Cr	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Mn	0.0000	0.0000	0.1516	0.5654	0.5654	0.0249	6
Fe	0.0000	6.6870	9.6568	14.8219	14.8219	1.5602	6 8
Ni	0.0000	0.0000	0.0067	0.0786	0.0786	0.0010	6

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Sr	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Ba	0.0000	0.0000	0.0013	0.0269	0.0269	0.0001	12
Pb	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Total			100.1550			40.8077	

Atomic proportions calculated for O+F+Cl = 24.0

Compilation based on 3 general and 22 sample records

Values in italics are calculated from the minimum and maximum values. Other data are from the sample and general records.

Lustre	Vitreous, Resinous
Aggregation	Massive, Compact, Disseminated
Habit	Prismatic
Tenacity	Brittle
Fracture	Subconchoidal, Uneven
Cleavage	{110} Excellent
Surface Colour	 Dark Brown, Black

Comp. Plan.		Comp. Surf.		Twin Plane		Twin Axis		Notes
						{100}		Simple, Lamellar

Synonyms: linosite, oxykaersutite

Remarks: Crystals usually black or brownish black with a vitreous to resinous lustre. Brittle with a subconchoidal to uneven fracture and excellent {110} (amphibole) cleavage.

Occurrences: Commonly occurs in intrusive and extrusive igneous rocks such as camptonites, monzonite, monchiquite as well as trachytes trachybasalts, basaltic dykes & scoria. The mineral often forms phenocrysts. It has also been reported from amphibolites.

Localities of samples used in compilation: Kaersut; Kangerdlugssuaq, Greenland. Boulder Dam, Arizona, U.S.A. Royal & Johnson, Québec, Canada. Tyaki, Sakhalin, Russia. Mts. Wart Holm, Copinsay, Orkneys, Scotland. Dunedin, N.Z. Laacher See, Germany. Kuruzzenkogel, southern Fehring, Steiermark, Austria. Lochkow, Czechoslovakia. Monte Rosso, Linosa Island, Sicily. Monton del Trigo, Sierra de la Cruz, northeast of Seville, Spain. Fuerte Ventura, Canary Islands. Kusumalai, Salem; Kailasgarh, Vellore, India. Takenotsuji; Shofure, Iki Island, Japan. Hexenkessel, Pomonagebiet, southwestern Namibia. Anakie, Victoria, Australia. Dunedin, New Zealand. And others worldwide.

References: Deer et al. (1963) v.2, p.321-327. GSA Sp. Paper 98. p.73, p.81-86, p.88, p.106-107, p.130. (anal. 410, 545, 565, 578, 590, 604, 605, 622, 639, 674, 676, 893, 908, 1209) Can. Min. v.16, p.501-520; v.21, p.356; v.35, p.219-246; v.41, p.1355-1362; v.42, p.1881-1883. TMPM v.7, p.210-217. Roberts et al. (1974) Encycl. Mins. USGS Bull. 1627.