

system $\text{SiO}_2\text{-ZrO}_2$ [16, 17] that when heated above 1676° , zircon dissociates into ZrO_2 and SiO_2 , after which a SiO_2 -rich eutectic melt is formed almost immediately, at 1687° [17], with the separation out of ZrO_2 . Also, ZrO_2 forms the tetragonal modification at temperatures above 1170° and the monoclinic only at lower temperatures. The features mentioned above — the formation of defective (differently disintegrated) zircon, the epithermal monoclinic modification of ZrO_2 , and the secretion of pure SiO_2 instead of glass of intermediate composition — are inconsistent with the simple dissociation or melting of ZrSiO_4 when it is heated. Moreover, in static conditions, such dissociation requires very prolonged soaking even at temperatures of 1600 to 1700° [17].

Received June 19, 1968

REFERENCES

1. Wackerle, J. J. Appl. Phys., 33, 922, 1962.
2. Adadurov, G. A., A. N. Dremine et al. Zhurn. prikl. mekh. i tekhn. fiz., No. 4, 1962.
3. Deribas, A. A., N. L. Dobretsov et al. Dokl. Akad. Nauk, 168, No. 3, 1966.
4. Ahrens, T. J. and V. G. Gregson. J. Geophys. Res., 69, 22, 1964.
5. Milton, D. J. and P. S. De Carli. Science, 140, No. 3467, 670, 1963.
6. De Carli, P. S. and D. J. Milton. Science, 147, No. 3654, 144, 1965.
7. Deribas, A. A., N. L. Dobretsov et al. Symposium H. D. P., Paris, 1967.
8. Goldschmidt, V. N. The Basic Ideas of Geochemistry, fasc. 1, 57, 1933.
9. Povarennykh, A. S. Zap. Vsesoyuzn. min. obshch., 85, fasc. 4, 593, 1956.
10. Barsanov, G. P. Tr. Min. muzeya (Proceedings of the Mineralogical Museum), fasc. 10, p. 3, USSR Acad. Sci. Press, 1959.
11. Kostyleva, YeYe. In: Voprosy mineralogii, geokhimii i petrografii (Mineralogy, Geochemistry and Petrology), 1946.
12. Pabst, A. Am. Mineral., 137, No. 3-4, 137, 1952.
13. Karyakin, A. V. Geokhimiya, No. 8, 1962.
14. Zyuzin, N. I. Dokl. Akad. Nauk, 154, No. 5, 1964.
15. Toropov, N. A., V. P. Barzakovskiy et al. Diagrammy sostoyaniya silikatnykh sistem (Structural Diagrams of Silicate Systems), "Nauka" Press, 1965.
16. Toropov, N. A. and F. Ya. Galakhov. Izv. Akad. Nauk SSSR, otd. khimich. nauk, 1956, 158 (sic).
17. Butterman, W. C. and W. R. Foster. Am. Mineral., 52, No. 5-6, 880, 1967.
18. Mikheyev, V. I. Rentgenometricheskii opredelitel' mineralov (X-Ray Identification of Minerals), Moscow, 1957.
19. Bendeliani, N. A. et al. Geokhimiya, No. 6, 677, 1967.

SOGDIANITE, A NEW MINERAL¹

V. D. Dusmatov, A. F. Yefimov, Z. T. Katayeva, L. A. Khoroshilova
and K. P. Yanulov

Institute of Mineralogy, Geochemistry and Crystal Chemistry
of Rare Elements; Geological Institute, Academy of Sciences, Tadjik
(Presented by Academician D. S. Korzhinskiy, April 30, 1968)

In the summer of 1964, while studying one of the multiple alkalic intrusions of the Alai Range (Tadjik SSR), V. D. Dusmatov found a mineral which, when subsequently studied by the authors, proved to be a new zirconium silicate. It was decided to call the mineral "sogdianite" after the ancient Central Asian state (Sogdiana).

The mineral occurs in pegmatite veins roughly equivalent to alkalic granite in composition, made up of microcline, quartz and aegirine. The

central parts of veins, where deposits of the mineral are the most frequent, consist of quartz nuclei with sporadically disseminated crystals of microcline and aegirine and accessory rare metal minerals like thorite, stillwellite, etc.

Sogdianite occurs as flaky grains up to $10 \times 7 \times 4$ cm in size, either included in quartz or (less commonly) confined to the spaces between microcline crystals.

The mineral has an elegant violet color of the kunzite type and a vitreous luster. It is often ideally transparent and less commonly turbid. The cleavage is perfectly parallel to (0001). There were no grains with clearly enough expressed crystal faces. The specific gravity of

¹Translated from: Sogdianit--novyy mineral. Doklady Akademii Nauk SSSR, 1968, Vol. 182, No. 5, pp. 1176-1177.