Comment on "A New Alumina Hydrate, "Tohdite," by G. Yamaguchi, H. Yanagida and S. Ono"

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Yamaguchi, Yanagida and Ono reported in this Bulletin on an alumina hydrate $5Al_2O_3$-H_2O.[1] Supposing that this compound had been unknown before, they called it "Tohdite." We would like to point out that this compound was already prepared in 1959 by Krischner and was described in detail as "Al_2O_3-KI" by Torkar and Krischner.[2]

In this publication we reported on the preparation of a new form of aluminum oxide still containing 0.16—0.20 mol. H_2O per mol. Al_2O_3, which we called Al_2O_3-KI. Preparation of this substance was carried out in an autoclave without the use of mineralizers. The publication contained an electron-microscopic picture, an original X-ray picture and a tabulated survey of X-ray interferences. A comparison with the paper[1] shows that Al_2O_3-KI and Tohdite are identical. This was also confirmed by the kappa-Al_2O_3-like decomposition product, which was also mentioned in our first publication.

Moreover, we have treated the problem of Al_2O_3-KI in a series of further publications.[3] Another study by Krischner contains a survey of the latest results.[4] It shows, among others, IR-pictures, which, besides the OH-peak described in the paper[1] display a characteristic spectrum at longer wavelengths. Furthermore, this study also contains a representation of electron beam selected area diffraction. The powder pictures were indexed by means of the reduced orthohexagonal cell, by which we obtained the same data as those given by Yamaguchi et al.[1] Further works by Yamaguchi on Al_2O_3-KI gave very interesting results, which mostly agreed with ours. Specially the new forms with structures similar to Al_2O_3-KI were of great interest.[1,5]

1) G. Yamaguchi, H. Yanagida and S. Ono, This Bulletin, **37**, 752 (1964).
2) K. Torkar and H. Krishner, *Monatsh. Chem.*, **91**, 658 (1960).
3) K. Torkar and H. Krischner, a) ibid., **91**, 764 (1960); b) *Ber. Deut. Keram. Ges.*, **39**, 131 (1961); c) "Science of Ceramics," Vol. 1, Academic Press, London (1961), p. 63.
4) H. Krischner, Habilitationsschrift T. H. Graz 1964.
5) G. Yamaguchi, H. Yanagida and S. Ono, This Bulletin, **37**, 1556 (1964); ibid., **38**, 1226 (1965).