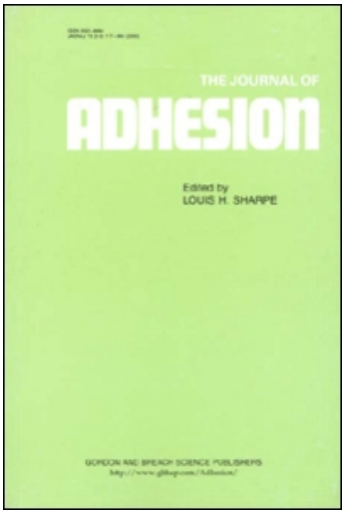

The Journal of Adhesion
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713453635

A review of: "INORGANIC ADHESIVES (Russian) by M. M. Sychev. Khimia Publ., Leningrad, 1974. 158 pp. (Rub. 0.66)."

J. J. Bikerman

To cite this Article Bikerman, J. J.(1975) 'A review of: "INORGANIC ADHESIVES (Russian) by M. M. Sychev. Khimia Publ., Leningrad, 1974. 158 pp. (Rub. 0.66)."', The Journal of Adhesion, 7: 3, 255 — 256
To link to this Article: DOI: 10.1080/00218467508075055
URL: http://dx.doi.org/10.1080/00218467508075055

J. Adhesion, 1975, Vol. 7, pp. 255–256

Printed in Scotland

Book Review

INORGANIC ADHESIVES (Russian) by M. M. Sychev.
Khimia Publ., Leningrad, 1974. 158 pp. (Rub. 0.66).

This short book (there are fewer than 400 words on an average page) consists of three chapters. The first is devoted to the "Physico-chemical basis of preparation and utilization of inorganic adhesives" and, obviously, is designed to serve as a theoretical introduction to the two more practical chapters. Unfortunately, the explanations presented in it often are so hazy and repeated so many times that the reader is not impressed with the literary quality of the text. But when he encounters statements such as ". . . the appearance and interaction of dipole structures in solidifying adhesive pastes have a complex and apparently a short-lived character, *because dipoles in an electrolyte solution must be neutralized*" (p. 13, italics are mine) or an identification of epitaxial phenomena with crystallization from solutions (p. 20), then not only the style becomes suspect. Polarization, hydrogen bonding, and dipoles are mentioned many times, but in a qualitative manner only; the reviewer did not notice any mathematical equation in the whole volume.

The second chapter, on Cement Adhesives, is not free of qualitative explanations but contains also the results of numerous experiments performed in the author's laboratory. It is to be regretted that the description of the experiments is rather sketchy. It appears, however, that, for instance, several salts (chlorides, nitrates, and so on of 19 cations ranging from Li^+ to Al^{3+}) were dehydrated by heat, mixed with a small volume of water, and permitted to recrystallize. Cubes of the crystal mass obtained were crushed by pressure, and the crushing strength was determined; it was, e.g. 360 bars for $SrCl_2$. In a few instances, recrystallization was performed between two metal adherends, and the breaking stress (in tension) of the adhints was found; it amounted, for instance, to 14 bars for $SrCl_2$ between brass and brass; here again the report is so condensed that no clear picture of the testing procedure can be obtained. No data for the tensile strength of the cubes, and almost no discussion of the other test results is given in the book.

The third chapter deals with Binder Adhesives and is similar to the second. The explanations attempted are qualitative and in many instances unconvincing, and the test results are just that.

According to a superficial count, more than 250 references out of the total of about 350 are to papers published in U.S.S.R. Thus the main value of the book is as a guide to the Russian literature on the mechanical (and some electric) properties of inorganic crystal aggregates.

J. J. BIKERMAN