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Coefficients of Diffusion of Salt Vapors in the Bunsen Flame

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PHYSICS ABSTRACTS

THE ATTENUATION FACTOR IN ACOUSTIC WAVE FILTERS

H. B. PEACOCK

Abstract

A theory has been formulated by Dr. G. W. Stewart by which it is possible to determine the selective transmission in three types of specially constructed acoustic wave filters. The theoretical attenuation factor also has been worked out and shows fair agreement with experimental results. Theoretical values of the attenuation were computed for one filter of each type and, from these values, the theoretical transmission curves were determined. The types of filters were the low-frequency and high-frequency — pass, and the single band.

STATE UNIVERSITY OF IOWA.

COEFFICIENTS OF DIFFUSION OF SALT VAPORS IN THE BUNSEN FLAME

GEORGE E. DAVIS

Abstract

The coefficients of diffusion of alkali salts in the Bunsen flame have been determined by a photographic method which is a modification of the method used by H. A. Wilson. The values of the diffusion coefficients obtained for sodium, potassium, and caesium salts are roughly proportional to the reciprocals of the atomic weights of the metals. This is what we should expect from kinetic theory, if we consider the luminosity to be due to free metal atoms in the flame. Lithium salts, however, are found to have a lower coefficient of diffusion than sodium salts, and hence their metal atoms are probably free only a part of the time the vapor is in the flame.

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