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Eversole and Lahr: The Thickness of a Rigid Water Layer on Quartz From Measurements

THE THICKNESS OF A RIGID WATER LAYER ON QUARTZ FROM MEASUREMENTS OF NEWTON'S RINGS

(Abstract)

W. G. Eversole and Paul H. Lahr

Newton's rings produced by a quartz plate and lens in a slit source of light were observed in a low power traveling microscope. The square of the radius of the rings (r) plotted against the order of the ring (n) from the center yields a straight line whose intercept on the axis where $n = 0$ is shown to be a function of the vertical separation of the lens and plate but not a function of the index of refraction of the medium between them nor the angle of incidence of the light. The ring radii were measured with air and with water between the lens and plate. The graphs for the two cases have different intercepts which is interpreted as indicating a rigid water multilayer between the quartz surfaces of the order of 200 A^{O} in thickness.

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VAPOR-PRESSURE LOWERING OF SULFUR DIOXIDE SOLUTIONS OF POTASSIUM THIOCYANATE FROM 15° TO 25° C.

(Abstract)

W. G. Eversole and G. H. Wagner

The vapor-pressure lowering of sulfur dioxide by potassium thiocyanate at 15°, 20° and 25° C. was measured by means of a differential mercury manometer connected to an all glass apparatus which employed no stopcocks. Readings were made to 0.001 cm. with a cathetometer. All concentrations were corrected for the amount of sulfur dioxide in the vapor phase. The molal lowering was approximately one-half the theoretical value at 0.005 molal and decreased with increasing concentration up to 1 molal, the highest concentration studied.

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