

vapors coming off were conducted through a series of chambers, maintained at different temperatures. The least volatile chloro-derivatives separated out in the hotter chambers, whereas the more volatile benzoic acid collected in the colder chambers.

**SOME ASPECTS OF THE BEHAVIOR OF CHARCOAL WITH
RESPECT TO CHLORINE.***

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[ABSTRACT.]

THIS investigation was undertaken to determine the cause of discrepancies between results obtained by different laboratories for the chlorine capacity of the same charcoals. To study the effect of temperature and humidity of the air stream with which the chlorine was diluted (usually 1:1000), mixtures of known air, chlorine, and moisture content were passed through the charcoal which was held in a glass chamber in a constant temperature bath. The chlorine and hydrochloric acid in the outgoing gas were determined from time to time.

In the particular series of charcoals studied, the variation in chlorine-absorbing power between different charcoals was greater than would result from any attainable variation in humidity, and the order of the charcoals with respect to absorptive power is not the same as that with respect to apparent density.

The duration of complete chlorine absorption (1) increases more rapidly than the thickness of the layer of charcoal, (2) passes through a minimum at a temperature between 0° and 12.5°, and (3) at a humidity in the neighborhood of 50 per cent., and (4) is diminished by increasing the flow of air, the rate of supply of chlorine remaining constant. Reductions in pressure up to two feet of water (barometric pressured down to 71 cm. mercury) has little or no effect.

For the charcoals studied: Below 12.5° chlorine appeared beyond the charcoal before hydrogen chlorid; above 12.5° hydrogen chlorid before chlorine, and the chlorine capacity of the charcoal was increased by one exposure to chlorine followed by heating in vacuo to dull redness.

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