

OXIDATION AND CHARACTERIZATION OF ACTIVE CARBON AG-5

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Abstract. The surface chemistry of the commercial active carbon AG-5 has been modified by oxidation with concentrated nitric acid. The structural changes caused by oxidative treatment were estimated on the basis of nitrogen adsorption-desorption isotherms and thermal analysis. Boehm titration method and infrared spectral analysis have been used in order to evaluate surface chemistry characteristics of active carbon samples. After oxidation process the amount of total acidic groups on oxidized active carbon surface (AG-5ox) increases by about 6 times in comparison with unmodified sample (AG-5). The concentration of the acidic groups on the oxidized active carbon surface (AG-5ox) was in the following order: strong acidic >>> weak acidic > phenolic.

Keywords: active carbon, oxidation, surface properties, thermal analysis, infrared spectroscopy.

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