ACTION OF PEROXY ACIDS ON COALS. Norman C. Deno, Chemistry Dept., Pennsylvania State University, University Park, PA 16802.

Peroxyacetic acid reacts with vitrinite coals to open some of the phenolic rings to hexadienedioic acids without loss of carbon. The product is soluble in methanol and largely soluble in water. There is no evidence for any other action from yields and spectra, and the view is supported by model studies on poly-p-vinylphenol.

The action of trifluoroperoxyacetic acid is more extensive. The diene diacids are degraded so that the final products are largely the aliphatic components attached to carboxylic or maleic acid groups. Isolated methylenes do not survive. The major products are oxiranetri and tetracarboxylic acids derived from phenolic acids and polyaromatic phenols, benzenetetracarboxylic acids from dihydroanthracene moieties, malonic acid of uncertain origin, acetic acid from arylmethyl, and methanol from arylmethoxy. Minor amounts of pyridine polyacids indicate acridine precursors. Significant amounts of products are not volatile and so their methyl esters and their nature has not been determined.