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## **Thermal Analysis of Autoxidation of Ethyl Esters of n-3 and n-6 Fatty Acids**

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The autoxidation of the ethyl esters of n-3 and n-6 fatty acids, abbreviated as PUFAs (polyunsaturated fatty acids), was followed by analysis using thermogravimetry and calorimetry as well as by gas chromatography. The thermogravimetric measurements indicated that the stoichiometric coefficient between n-6 PUFA and oxygen was 1 during the entire autoxidation, and that the coefficient between n-3 PUFA and oxygen was dependent on the unoxidized substrate fraction. For n-3 PUFAs, the coefficient was 1 when the fraction was greater than 0.5, and the coefficient became larger as the autoxidation proceeded (i.e., the unoxidized fraction was less than 0.5). Calorimetric measurements also gave the same results. The heat of the autoxidative reaction based on moles of oxygen consumed was almost constant for both the n-3 and n-6 PUFAs, and it was not dependent on the unoxidized substrate fraction.

**Keywords:** [autoxidation](#), [polyunsaturated fatty acid](#), [thermogravimetry](#), [calorimetry](#)



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