

Compounds which are rather alkali-labile are not decomposed by the buffer. Thus UDP-glucose shows no sign of decomposition within 3-4 h. The buffer solution can be stored for months without alteration and can be recommended after considerable experience.

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Identification of dialkyl peroxides by paper chromatography

It has been shown that good separation of alkyl hydroperoxides can be obtained by paper chromatography¹ though, as yet, no satisfactory method for the separation of dialkyl peroxides has been reported. The following separation was devised in order to characterise dialkyl peroxides produced in the radiation induced oxidation of hydrocarbons but may well be of value in other work.

Experimental procedure

The apparatus used was similar to that described by CARTLIDGE AND TIPPER¹. Whatman No. 3 chromatography paper was treated with 5 vol. % solution of silicone oil (Hopkin and Williams MS 1107) in 80-100° petroleum ether and dried in an oven at 110° for 1 h. Samples were applied and the paper was sandwiched between glass plates which had previously been treated with the silicone solution. Chromatograms were run using a solution of water in methanol as moving phase, the rate of movement of the solvent front being approximately 7 cm/h. They were then developed by spraying with a solution of ferrous thiocyanate² and left to stand for 20-30 min when the presence of peroxides was indicated by red spots. It was possible to detect 100 µg of peroxide.

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TABLE I

 R_F VALUES OF DIALKYL PEROXIDES

(Stationary phase: silicone from 5% solution; moving phase: water-methanol)

Compound	R_F	
	10% H_2O in moving phase	15% H_2O in moving phase
Di- <i>n</i> -hexyl peroxide	0.43	0.21
Di-cyclohexyl peroxide	—	0.44
Di- <i>n</i> -pentyl peroxide	0.58	0.35
Di- <i>n</i> -butyl peroxide	0.70	0.55
Alkyl hydroperoxides	1.0	1.0

Results are shown in Table I. The dialkyl peroxides used were prepared by the method of WILLIAMS AND MOSHER³.

It will be seen that a good separation of peroxides may be achieved. The R_F values are somewhat dependent on the experimental conditions and in establishing the identity of an unknown, it was found preferable to run control samples of known peroxides with the unknown.

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