SHORT COMMUNICATIONS

The Ionization Potentials of Aliphatic Alcohols

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Although there is ample information about the ionization potentials of homologous series, little attention has been directed towards the effect of branched chain. The present investigation was undertaken to study the variations of the appearance potentials due to the structure change of this particular sort.

The apparatus employed is a mass spectrometer of Hagstrum type.[1,2] The first appearance potentials were obtained by use of Honig's critical slope method,[3] argon being used as the standard gas.

The values obtained for methyl, ethyl and *n*-propyl alcohols are in good agreement with those of the previous investigators. It will be seen from the data of the table that the observed ionization potentials decrease in magnitude as the alkyl groups become either larger or more highly branched. Further it will be noted that the potentials are strongly affected by the structure changes

FIRST IONIZATION POTENTIALS, (ev.)

Substance	Present authors (Electron impact)	Values in literature	
		(Electron impact)	(Spectroscopic)
Methyl alcohol	10.97±0.05	10.95[a]	10.80[b]
Ethyl alcohol	10.65±0.05	10.60[a]	10.70[b]
n-Propyl alcohol	10.42±0.1	10.46[a]	10.70[b]
Isopropyl alcohol	10.27±0.1		
n-Butyl alcohol	10.30±0.1		
Isobutyl alcohol	10.17±0.1		
t-Butyl alcohol	9.92±0.1		

in the immediate neighbourhood of the OH group.

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b) W. C. Price, *Chem. Rev.*, **41**, 257 (1947).

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