

XXXVI.—*Note on Ethyl-hexyl Ether.*

By C. SCHORLEMMER.

WHEN chloride of hexyl is heated in a sealed tube with an alcoholic solution of potash, chloride of potassium separates out; and on adding water to the liquid, a light oil is obtained, which according to Cahours and Pelouze† consists chiefly of hexylene, but also contains other substances. In the preparation of hexylene according to this method, I obtained some quantity of a liquid of a higher boiling point, which on fractional distillation over sodium (in order to remove traces of alcohol) was found to con-

* Compt. rend. lix, 449.

† Ann. Ch. Phys. (4), i, 27.

sist almost entirely of a compound boiling constantly at 131° — 133° , and which on analysis gave numbers agreeing with the formula $C_8H_{18}O$;

0.4385 substance gave 1.190 carbonic acid and 0.549 water.

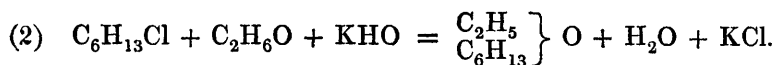
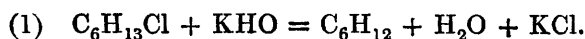
	Calculated.		Found.
C_8	96	73.85	74.0
H_{18}	18	13.85	13.9
O	16	12.30	
	<hr/> 130	<hr/> 100.00	<hr/>

The mode of preparation shows that this substance is ethyl-hexyl ether $\left. \begin{matrix} C_2H_5 \\ C_6H_{13} \end{matrix} \right\} O$.

Ethyl-hexyl ether is a colourless, mobile, highly refracting liquid, possessing a strong ethereal smell resembling that of ethyl-amyl ether. The specific gravity was found to be—

At $16^{\circ}5$	C	$=$	0.7752
„ 30°	„	$=$	0.7638
„ 63°	„	$=$	0.7344

By acting on chloride of hexyl with an alcoholic solution of potash, two reactions, therefore, take place, viz.:—



The latter reaction corresponds to Berthelot's mode of the formation of common ether by treating bromide of ethyl with an alcoholic solution of potash,* and to Balard's reaction for the production of ethyl-amyl ether by acting with the same re-agent upon iodide of amyl,† and also to Guthrie's mode of preparing ethyl-amyl ether by heating iodide of ethyl with a solution of caustic potash in amyl alcohol.‡

* Ann. Ch. Pharm. xcii, 351.

† Ann. Ch. Phys. [3], xii, 302. Balard considered this ether as amyl ether and some French chemists still adhere to this opinion (*vide* Frémy et Pelouze, *Traité de Chimie* v, 524) although Williamson pointed out its true constitution many years ago.

‡ Phil. Mag. (4) xiv, 186.