

VI. HEPTYLENE FROM HEPTANE OF P. SABINIANA.

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In a note on certain heptylic derivatives published in 1880*, mention was made of a heptylene agreeing in boiling point with the one prepared by Schorlemmer from the petroleum-heptane. This heptylene was observed as one of the products in preparing several of the heptylic derivatives from the bromide, but the method adopted for its special preparation was the action of sodium ethylate upon the heptylic bromide at the temperature of boiling. The liquid obtained was light, mobile and with a high refractive-index, boiling at 97° - 98° C, and possessing a pleasant aromatic smell. Its specific gravity was 0.70075 (21° . 6 C).

If sodium ethylate is allowed to act in the cold, a heptylethyl-ether is formed, together with a small amount of heptylene. Even when an excess of the sodium ethylate is present, it is difficult to change all of the bromide to the ether. Analyses, however, of the heavy oily liquid obtained showed the conversion to be almost complete

HEPTYLENE BROMIDE.

The action of bromine upon the heptane is slow, and heat must be applied. On the heptylene, bromine acts with great energy, heat being evolved. In the first case, the resulting product is one of substitution; in the latter, it is one of addition; but substitution products are very easily formed if the temperature is allowed to rise. In the brominating, then, it is necessary to avoid all rise of temperature. The heptylene was put in a long tube surrounded by a freezing mixture of sodium sulphate and hydrochloric acid, and air loaded with bromine vapor was sucked through it for six or ten hours. The color of the bromine disappeared with each bubble, and the reaction was stopped as soon as a permanent coloration was observed. The thick, oily liquid was then distilled in partial vacuum, boiling quite constantly without the evolution of hydrobromic acid gas. After the first distillation it was found possible to complete the fractioning under ordinary pressure. The boiling point was 209° - 211° C. (uncorrected.)

Only with great difficulty did Schorlemmer † succeed in

* Ber. Chem. Ges. XII. 1649.

† Annalen Chem. Pharm. 188, 256.

forming a heptylene bromide or heptylic dibromide from his petroleum-heptane, and it could not be distilled. The dibromide prepared by Thorpe and Young † has a spec. grav. 1.5146 (18.5° C), and underwent decomposition at the temperature of 150° C—that is, considerably below the boiling point as observed for the dibromide described above.

I propose carrying the investigation of this heptylene and its derivatives still further, as their stability gives promise of interesting results. A careful determination of the specific gravity of the the dibromide will also be made as soon as a larger supply is on hand.

† *Annalen Chem. Pharm.* 165, 12.