

1-Propyl-2-iodoacetylene

BY THOMAS H. VAUGHN

When the densities and indices of refraction of the alkyl iodoacetylenes are plotted against molecular weight it becomes apparent that the values for these constants reported for propyl iodoacetylene by Grignard and Perrichon [*Ann. chim.*, **5**, 5-36 (1926)] are seriously in error.

This compound has been prepared in this Laboratory in 77% yield by the action of iodine on pentynylmagnesium bromide according to the procedure outlined by Grignard and Perrichon and has been found to possess the following properties: b. p. 67.0-67.5° at 35 mm.; 75-77° at 51 mm.; γ_{25} 34.22 dynes/cm. (maximum bubble pressure method); [P], obs., 283.3; calcd., 281.3; n_D^{25} 1.52231, n_D^{10} 1.5310; d_{25} 1.6557; MR'_D calcd., 36.54; obs., 35.73. These values for the index of refraction and density lie on their curves as determined from the other members of the series.

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RECEIVED JANUARY 11, 1933
PUBLISHED MARCH 7, 1933

COMMUNICATIONS TO THE EDITOR

HYDROGENOLYSIS OF ALCOHOLS TO HYDROCARBONS

Sir:

Recently we have found a method for the preparation of certain hydrocarbons which were not readily available. The reaction involved is the hydrogenolysis of a primary alcohol according to the equation $RCH_2OH + 2H_2 = RH + CH_4 + H_2O$. The reaction proceeded smoothly with dodecanol-1, tetradecanol-1, octadecanol-1 and 3-cyclohexylpropanol-1, from which were obtained *n*-undecane [b. p. 189-190° (740 mm.), n_D^{25} 1.4164], *n*-tridecane [b. p. 84-85° (3 mm.), n_D^{25} 1.4250, m. p. -7-8°], *n*-heptadecane [b. p. 290-292° (738 mm.), n_D^{25} 1.4360, m. p. 20-21°], and ethylcyclohexane [b. p. 127-128° (738 mm.), n_D^{25} 1.4310]. Similarly the diprimary glycol, decanediol-1,10, by the removal of both carbinol groups was converted into *n*-octane [b. p. 121-123° (742 mm.), n_D^{25} 1.3975].

Hydrogenolysis was accomplished by subjecting 40 to 50 g. of the alcohol or glycol for about five hours to the action of hydrogen (100 to 200 atmospheres) at 250° over a nickel catalyst. The reaction proceeded almost quantitatively and no product other than the indicated hydrocarbon was found in any case. In some experiments a small amount of the original alcohol or glycol was recovered. [The catalyst and apparatus have