4-(Tetracyanoethyl)-2,6-dimethylphenol

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Sauses, Engelhardt and Middleton\textsuperscript{1} have described the formation of 4-(tricyano-
vinyl)-2,6-dimethylphenol (II) in a reaction between tetracyanoethylene and 2,6-
dimethylphenol in tetrahydrofuran-pyridine solution. They assumed that the reaction proceeded over an intermediate 4-
(tetracyanoethyl)-2,6-dimethylphenol (I). We wish to report the preparation of the latter compound from tetracyanoethylene and 2,6-dimethylphenol in acetic acid solution. It is a white solid which is reason-
ably stable in acid solution but, in alkaline solution, is converted to the red 4-(tr-
cyanovinyl)-2,6-dimethylphenol (II). It can, however, be dissolved in sodium bicarbo-
nate solution and reprecipitated with hydrochloric acid.

We are now studying the scope and limita-
tions of the reaction between tetracyano-
ethylene and phenols in acidic solution as well as the properties of the tetracyano-
ethylphenols formed. The results of the study will be presented in a forthcoming paper.

Tetracyanoethylene (0.173 g, 1.35 mmole) and 2,6-dimethylphenol (0.107 g, 1.37 mmole) were dissolved in 15 ml glacial acetic acid and then 1 ml water was added. The reddish-violet solution was discoloured after a few hours and, upon addition of water (10 ml), a white precipitate was formed. It was collected and recrystallized from glacial acetic acid and water (1:1). Yield 0.205 g (61%). M.p. 154°–156° (decomp.). (Found: C 67.4; H 3.97; N 22.2. Calc. for (I), C\textsubscript{14}H\textsubscript{18}ON\textsubscript{2}: C 67.19; H 4.02; N 22.39).

4-(Tetracyanoethyl)-2,6-dimethylphenol (0.145 g, 0.58 mmole) was dissolved in 10 ml ethyl alcohol and 0.5 ml pyridine was added. The solution was heated on a boiling water bath for half an hour. On acidifica-
tion with 5 N hydrochloric acid, the colour of the dark red solution changed to orange-
yellow. Addition of water (10 ml) caused an orange-yellow substance to precipi-
tate. It was collected and recrystallized from glacial acetic acid and water (1:1). Yield 0.122 g (95%). M.p. 179°–181° (decomp.). M.p. for 4-(tricyanoethyl)-2,6-
dimethylphenol (II) according to Sausen \textit{et al.}\textsuperscript{1} 182°–183° (decomp.) \textsuperscript{*}. A specimen of the latter compound obtained from te-
tracyanoethylene and 2,6-dimethylphenol in alcohol-pyridine solution was found not to depress the melting point of the compound formed from 4-(tetracyanoethyl)-
2,6-dimethylphenol.

\* Determined on a preheated block.


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