

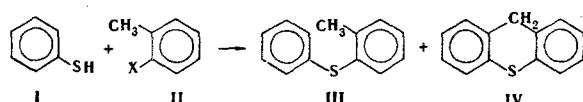
HIGH-TEMPERATURE SYNTHESIS OF THIOXANTHENE

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It had already been shown in the last century that thioxanthene is formed when phenyl o-tolyl sulfide is passed through a "slightly incandescent" tube [1].

We have established that thiophenol reacts with o-chloro- or o-bromo-toluene at 650–660°C to give thioxanthene and a small amount of phenyl o-tolyl sulfide, which is evidently the intermediate:



By passing an equimolar mixture of I and II ($X = Cl$) through a heated (to 600°) quartz tube (30 mm in diameter) we obtained III and IV in 5.5 and 28.3% (based on the amount of starting II) or 7.7 and 38.5% yields (based on the amount of II consumed). Compound IV has bp 160° (4 mm) and mp 127° (mp 127° [1]). Found: C 78.85; H 5.00; S 16.00%. $C_{13}H_{10}S$. Calculated: C 78.90; H 5.05; S 16.15%.

Compounds III and IV were obtained in 0.3 and 40.6% (based on the amount of starting II) or 0.37 and 49.5% yields (based on the amount of II consumed) at 650° and a rate of passage of a mixture of I and II ($X = Br$) of 12 g/h.

LITERATURE CITED

1. C. Graebe and O. Schultes, Liebigs Ann., 263, 14 (1891).

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