and hydrobromides. The pharmacological extended.

Summary

and furoates of a number of amino alcohols have been prepared. Both types of esters have a low order of topical anesthetic activity but the furoates are frequently somewhat superior.

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[CONTRIBUTION FROM THE CHEMISTRY DEPARTMENT OF FURMAN UNIVERSITY]

sym-Tritolylbenzene

BY JOHN R. SAMPEY

ızenes have been made by the con- methyl phenyl ketones in various Hydrogen chloride and sulfuric acid ısed most often as the condensing ıdensations with the former, how- l slowly; Claus[1,d] allowed six to eight ıs condensations, and in a trial run *p*-tolyl ketone saturated with dry loride we obtained only a 30% yield ylbenzene in five weeks. Condensa- d by sulfuric acid have been accom- low yields; Bernhauer[1,g] reported a *sym*-tritolylbenzene from the action cid and potassium pyrosulfate on *p*- ɔhenone.

y to the preparation of a series of ıes, a systematic investigation was effect of changes in time, temperature, ration on the yield of *sym*-tritolyl- the action of sulfuric acid and po- ɔsulfate or potassium acid sulfate on yl ketone. Condensations were made ıres ranging from room temperature he acid concentrations were varied of concentrated sulfuric acid per 10.0 of ketone to 5.0 cc. of acid. The he two potassium salts ranged from

At the lower concentrations of acid and the lower temperatures much unchanged ketone was recovered, while at the higher concentrations the yield of triarylbenzene was reduced by the formation of a dark resinous mass. After more than fifty experiments the following conditions were found to give optimum yields in a reasonable time.

Exactly 10.0-g. samples of methyl *p*-tolyl ketone were placed in large Pyrex test-tubes (29 × 200 mm.) attached to reflux condensers and protected by calcium chloride tubes. Concentrated sulfuric acid, 0.2 cc. to 0.3 cc., and potassium pyrosulfate, 2.0 g., or potassium acid sulfate, anhydrous, 2.0 g., were added. The test-tubes were suspended in an oil-bath heated to 190° for six hours. The tubes were then removed, chilled, and 25 cc. of water added; the mixture was warmed and stirred with a heavy glass rod until the potassium salt dissolved. The tritolylbenzene was separated and crystallized from hot acetic acid; yield 67–70% *sym*-tritolylbenzene, m. p. 170–171°.

Recognition is made of the assistance of Dr. E. Emmet Reid on this investigation.

Summary

sym-Tritolylbenzene has been prepared in 67–70% yields by the condensation of methyl *p*-tolyl ketone with sulfuric acid and potassium pyrosulfate or potassium acid sulfate, anhydrous.

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Ber., **7**, 1123 (1874); **26**, 1444 (1893); (b) Vor- 2836–2844 (1929); (c) LeFèvre, *J. Chem. Soc.*, Claus, *J. prakt. Chem.*, [2] **41**, 405 (1890); (e) *ntr.*, **102**, II, 3101 (1931); (f) Odell, THIS JOURNAL,) Bernhauer, *J. prakt. Chem.*, **145**, 301–308 (1936).