

standard iodine.

(c) To 10 c.c. of solution (1), 10 c.c. of solution (2) were added and found to require 32.30 c.c. of standard iodine.

Thus 10 c.c. of solution (1) required 27.75 c.c. of iodine, and 10 c.c. of solution (2) required 6.50 c.c. of iodine; in all 32.25 c.c. as compared with 32.30 c.c. when mixed, a difference which is well within the limits of experimental error.

In order to see if arsenious oxide can be determined accurately in the presence of phenol by means of dichromate, experiments similar to those made with iodine were carried out with it. Ten c.c. of solution (2) required 6.07 c.c. of dichromate, a mixture of 10 c.c. of (2) with 10 c.c. of (1) required 6.09 c.c. of dichromate, or an error of less than 0.3 per cent.

Properties of the Arsenites prepared from Phenol and its Homologues.

	Phenyl arsenite.	Benzyl arsenite.	<i>o</i> -Tolyl arsenite.	<i>m</i> -Tolyl arsenite.	<i>p</i> -Tolyl arsenite.
Yield (per cent)					
(a) with Soxhlet	60	100	96	94	95
(b) without Soxhlet	nil	nil	nil	nil	nil
Specific gravity	1.59	1.43	—	1.45	1.46
Refractive index*	—	1.572	—	—	—
Boiling point † under 30 mm.	305°	255°	—	346°	—
Freezing point	—31°	—36°	—	—	—
Colour.....	yellow	blue	dark brown	dark brown	brown

* The blanks indicate that the refractive index is greater than 1.62098, the limit of the prism used.

† Where the boiling point is not given it is above 360°.

All these esters are soluble in methyl and ethyl alcohols, ether, benzene, ethyl acetate, or chloroform, and are decomposed at once by water.

This method of esterification is being carried out with arsenious oxide and the dihydric and trihydric phenols, but the quantitative results are not ready. A successful attempt has also been made to form similar esters with hydroxy-acids, methyl salicylate being heated with arsenious oxide. The products of the reaction, namely, water and an oil, were driven up into the Soxhlet where the latter decomposed, liberating arsenious oxide. The oil boils at about the same temperature as the methyl salicylate and has an almost unbearable odour. When the dehydrating agent is used in the Soxhlet it is expected the new ester will readily be separated.

Experiments have also been tried with arsenious sulphide in place of the oxide and a small yield of an ester obtained, presumably of the composition R_3AsS_3 , but the upper portions of the flask and the condenser became coated with the orange-colored arsenious sulphide, showing that decomposition had occurred. The work is being continued.