

NOTE.

Note on the Chlorination of 2-Aminothiazole with Sulphuryl Chloride. By E. PEDLEY.

2-ACETAMIDOTHIAZOLE is chlorinated by the action of sulphuryl chloride to give the 5-chloro-compound, hydrolysed to 5-chloro-2-aminothiazole identical with that described by English, Clarke, Clapp, and Ebel (*J. Amer. Chem. Soc.*, 1946, **68**, 453).

2-Acetamidothiazole. 50 G. of 2-aminothiazole were added in portions, with thorough shaking, to 150 g. of acetic anhydride. The solid obtained was melted, boiled under reflux for $\frac{1}{2}$ hour, and poured into 500 ml. of water. The precipitated acetyl derivative on recrystallisation from water (charcoal) gave white, matted, needle-shaped crystals (35 g.), m. p. 203° (Found: N, 19.5. Calc. for $C_6H_8ON_2S$: N, 19.7%).

5-Chloro-2-acetamidothiazole. 50 G. of the above compound were suspended in 500 ml. of dry carbon disulphide and heated under reflux during the slow addition of 50 g. of sulphuryl chloride mixed with 100 ml. of carbon disulphide (vigorous stirring) and for $\frac{1}{2}$ hour thereafter. The crystals which separated on cooling were filtered off, washed thoroughly with carbon disulphide, and dried in air. Recrystallisation from alcohol yielded 25 g. of white needles, m. p. 208° (Found: N, 15.7. Calc. for $C_5H_6ON_2ClS$: N, 15.9%), undepressed on admixture with the acetyl derivative of 5-chloro-2-aminothiazole obtained according to English *et al.* (*loc. cit.*).

5-Chloro-2-aminothiazole. 5 G. of the foregoing acetyl compound were boiled for 20 minutes under reflux with 50 ml. of 10% hydrochloric acid, and then for 5 minutes with addition of charcoal. The filtered and cooled solution was basified by sodium carbonate, and the precipitated base extracted with ether. The extract was dried (K_2CO_3), filtered, and then passed through a short column of chromatographic aluminium oxide. Removal of the solvent yielded a creamy white solid, m. p. 111° (Found: N, 20.2. Calc. for $C_5H_5N_2ClS$: N, 20.8%), undepressed on admixture with a specimen (m. p. 111°) from dichloroacetal and thiourea.—MESSRS. J. WOOLLEY SONS & CO. LTD., MANCHESTER. [Received, July 3rd, 1946.]
