SYNTHESIS AND PROPERTIES OF 4-CHLOROIMIDAZO[4,5-d]-1,2,3-TRIAZINE

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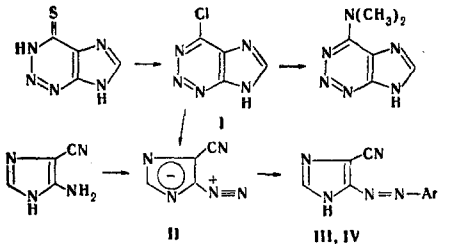
When 4-chloroimidazo[4,5-d]-1,2,3-triazine (I) is heated in water the ν-triazine ring opens to give 5-diazoimidazole-4-carbonitrile (II), which is stable only in solution. The formation of II was proved by its diazo coupling with dimethylaniline and 2-naphthol and also by alternative synthesis of II and dyes III and IV from 5(4)-aminoimidazole-4(5)-carbonitrile (absorption bands corresponding to $\nu_{C\equiv N}$ and $\nu_{\overset{+}{N}\equiv N}$ are observed in the IR spectra of II, III, and IV). The starting I was obtained by oxidative chlorination of



III Ar = 4-$(CH_3)_2NC_6H_4$; IV Ar = 2-hydroxynaphthyl

imidazo[4,5-d]-1,2,3-triazine-4-thione. Under mild conditions, I is converted to the known 4-N,N-dimethylaminoimidazo[4-5-d]-1,2,3-triazine. Satisfactory analytical data were obtained for I, III, and IV, and the individuality of the compounds was confirmed by means of descending paper chromatography in the n-butyl alcohol–acetic acid–water (4:1:1) system.

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