SYNTHESIS OF POLYCHLORO DERIVATIVES OF 2-NITROMETHYLBENZIMIDAZOLE

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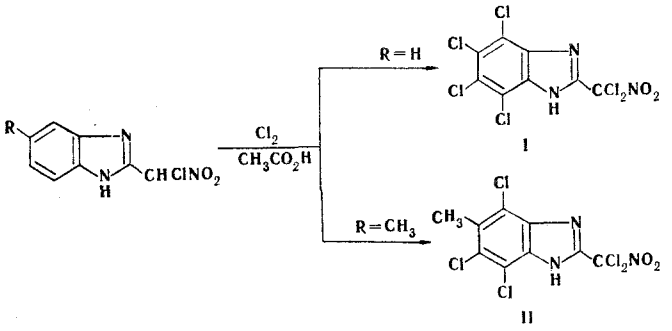
In the present paper we propose a new method for the preparation of polychloro derivatives of benzimidazole from easily accessible 2-chloronitromethylbenzimidazole derivatives, the chlorination of which takes place under mild conditions (the glacial acetic acid at 18-20°C with electrolytic chlorine from a cylinder) up to the point at which the starting compounds dissolve completely (10-15 min). In this case both the ring and the nitromethyl group are chlorinated. After treatment of the reaction mixture with water, the precipitate was recrystallized from carbon tetrachloride.



Thus, 4,5,6,7-tetrachloro-2-dichloronitromethylbenzimidazole (I), with mp 272-273° (light-cream-colored crystals), was obtained in 93% yield from 2-chloronitromethylbenzimidazole, and 5-methyl-4,6,7-trichloro-2-dichloronitromethylbenzimidazole (II), with mp 252-253° (light-yellow crystals, was obtained in 92% yield from 5-methyl-2-chloronitromethylbenzimidazole. The results of complete elementary analysis were in agreement with the calculated values.

Compounds I and II are stable on prolonged storage, and, in contrast to the starting compounds, are quite soluble in almost all organic solvents. IR spectra of I and II: 1600 and 1300 (dichloronitromethyl group); 3430 cm^{-1} (NH). UV spectrum: λ_{max} 290 nm (ε 5000).

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