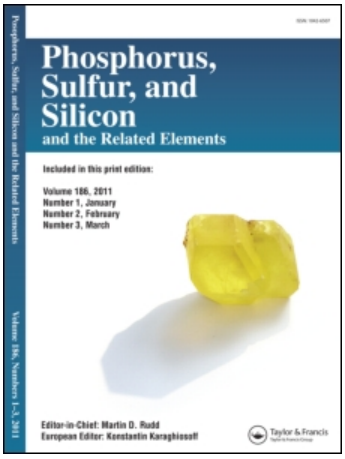

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Reactions of 3-Chloro-3-(Dimethylphosphono) Isobenzofuranone and its Derivatives

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Reactions of 3-Chloro-3-(Dimethylphosphono) Isobenzofuranone and its Derivatives

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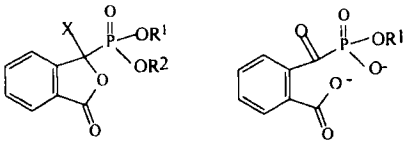
3-Chloro-3-(dimethylphosphono)isobenzofuranone (**1**), obtained by the reaction of phthaloyl dichloride with $(MeO)_3P$ can be monodemethylated to sodium 3-chloro-3-(methylphosphono)isobenzofuranone (**2**) by NaI, or hydrolyzed to 3-hydroxy-3-(methyl)phosphonoiso- benzofuranone (**3** and **4**), depending on the reaction conditions. The ^{31}P nmr spectra of hydroxyphosphonoisobenzofuranones **3** and **4** were found to be pH dependent. Raising the pH of the solutions to 10 caused reversible changes in the spectra of **3** (^{31}P δ = 10.2 ppm) and **4** (^{31}P δ = 8.96 ppm) consistent with opening of the isobenzofuranone ring and the formation of *ortho*-(phosphonoformyl)benzoate anions **5** (^{31}P δ = 0.89 ppm) and **6** (^{31}P δ = 0.19 ppm). Analogous changes were also observed in the ^{13}C nmr spectra of the compounds. 3-Chloro-3-(dimethylphosphono)-isobenzofuranone (**1**) reacts rapidly with aliphatic amines and with amino acids at room temperature to give phthalimides in high yields thus providing a new convenient synthetic method to such compounds.



1 X = Cl, R^1 = R^2 = Me
2 X = Cl, R^1 = Na, R^2 = Me
3 X = OH, R^1 = H, R^2 = Me
4 X = OH, R^1 = H, R^2 = H

5 R^1 = H
6 R^1 = Me

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