

Carbacylamidophosphates: Synthesis, Properties, and Structure of Dimorpholido-N-trichloroacetylphosphorylamide

Vladimir A. Ovchynnikov^a, Vladimir M. Amirkhanov^{a,*}, Taras P. Timoshenko^a,
Tadeusz Glowiak^b, Henryk Kozłowski^b

^a Faculty of Chemistry, University of Kiev, Vladimirskaya str. 64, 252033, Kiev, Ukraine

^b Faculty of Chemistry, University of Wrocław, F.Joliot-Curie 14, 50-383 Wrocław, Poland

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Carbacylamidophosphates, IR Data, X-Ray Data

Dimorpholido-N-trichloroacetylphosphorylamide: $\text{CCl}_3\text{C}(\text{O})\text{NHP}(\text{O})[\text{N}(\text{CH}_2\text{CH}_2)_2\text{O}]_2$ [HL] and its sodium [NaL] and morpholine $[\text{HN}(\text{CH}_2\text{CH}_2)_2\text{O}\cdot\text{HL}]$ salts were synthesized for the first time. The compounds were studied by IR spectroscopy and assignments of the characteristic IR bands have been made. The structure of [HL] was determined by X-ray diffraction. Crystals are monoclinic, $a = 11.412(2)$ Å, $b = 16.056(3)$ Å, $c = 9.622(2)$ Å, $\beta = 108.55(3)^\circ$, space group $\text{P}2_1/c$; $Z = 4$. The refinement of the structure converged at $R = 0.066$. The molecules are connected into centrosymmetric dimers via hydrogen bonds formed by the phosphorylic oxygen atoms and hydrogen atoms of amide groups.

* Reprint requests to Dr. V. Amirkhanov.