

# New Promising Methods of Synthesis of Pyridinecarbothioamides

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Received April 2, 2015

**Abstract**—New methods of synthesis of pyridinecarbothioamides from the corresponding cyanopyridines with the use of phosphorus pentasulfide as a thionation agent were developed. The first method was based on the reaction of cyanopyridine with phosphorus pentasulfide in alcoholic ammonium solution followed by hydrolysis. The method provided the corresponding thioamides in 60–90% yield. The second procedure included the reaction of phosphorus pentasulfide with 4-cyanopyridine in aqueous ammonia solution, which led to the formation of pyridine-4-carbothioamides in quantitative yield.

**Keywords:** thioamides, pyridinecarbothioamide, cyanopyridine, phosphorus pentasulfide

**DOI:** 10.1134/S1070363215100138