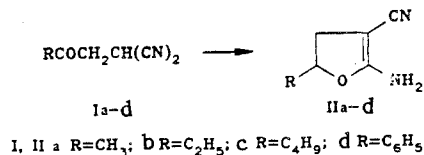


SYNTHESIS OF 2-AMINO-3-CYANO-4,5-DIHYDROFURANS FROM β,β -DICYANOKETONES

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We studied the reduction reactions of polynitriles and found that the reduction of β,β -dicyanoketones Ia-d by sodium borohydride in water at room temperature produces 2-amino-3-cyano-4,5-dihydrofurans IIa-d.



The structure of compounds IIa-d was established from the IR, ¹³C NMR, and mass spectral data. The IR spectra were obtained in a suspension in mineral oil.

2-Amino-5-methyl-3-cyano-4,5-dihydrofuran. mp 106-107°C. Yield 25%. IR spectrum: 3430-3180, 1630 (NH₂); 2190 (CN); 1587 cm⁻¹ (C=C).

2-Amino-5-ethyl-3-cyano-4,5-dihydrofuran. mp 76-77°C. Yield 33%. IR spectrum: 3410-3220, 1642 (NH₂); 2190 (CN); 1595 cm⁻¹ (C=C).

2-Amino-5-butyl-3-cyano-4,5-dihydrofuran. mp 89-91°C. Yield 22%. IR spectrum: 3400-3198, 1658 (NH₂); 2180 (CN); 1598 cm⁻¹ (C=C).

2-Amino-5-phenyl-3-cyano-4,5-dihydrofuran. mp 99-101°C. Yield 95%. IR spectrum: 3430-3180, 1670 (NH₂); 2200 (CN); 1580 cm⁻¹ (C=C).