

Organic Chemistry Portal
 Reactions >> Name Reactions

Further Information

[Literature](#)

Related Reactions

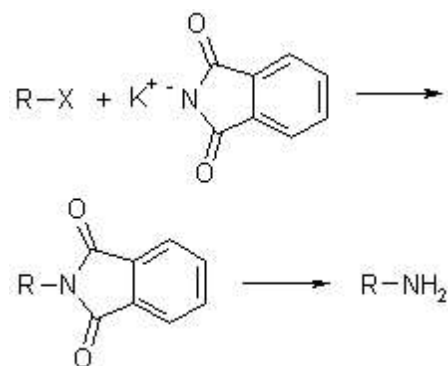
[Delépine Reaction](#)

[Eschweiler-Clarke Reaction](#)

[Staudinger Reaction](#)

Synthesis of primary amines

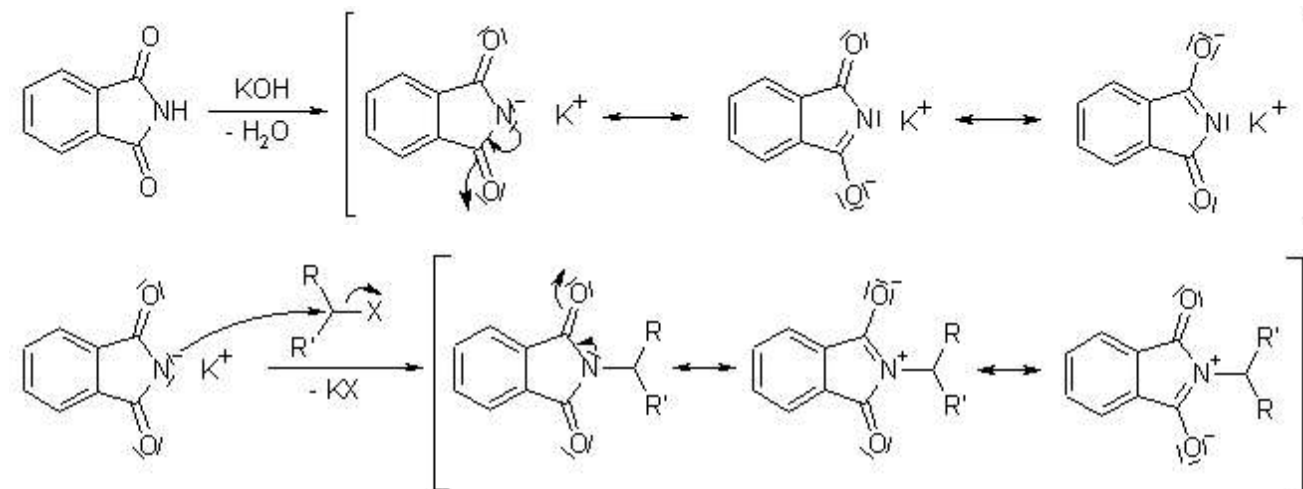
Gabriel Synthesis



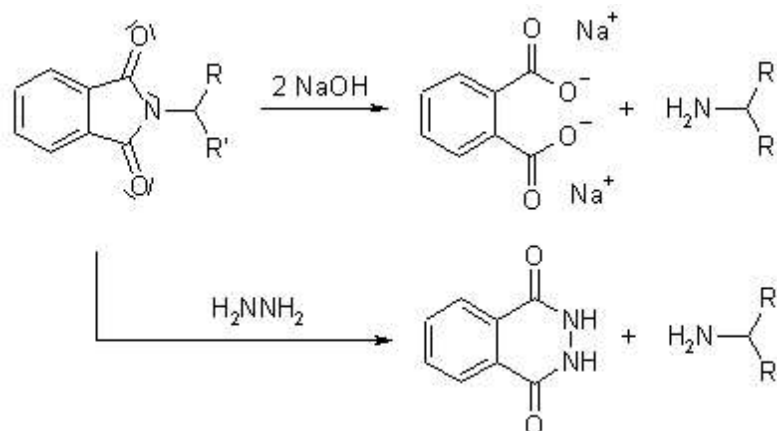
Potassium phthalimide is a $^-\text{NH}_2$ -synthon which allows the preparation of primary amines by reaction with alkyl halides. After alkylation, the phthalimide is not nucleophile and does not react anymore. Product is cleaved by reaction with base or hydrazine, which leads to a stable cyclic product.

Mechanism of the Gabriel Synthesis

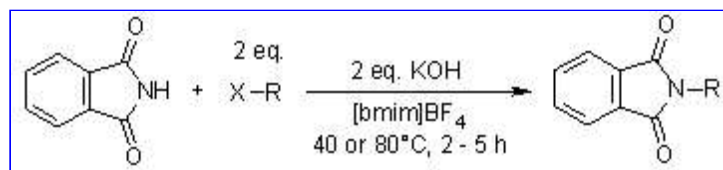
Note: Phthalimide is acidic!



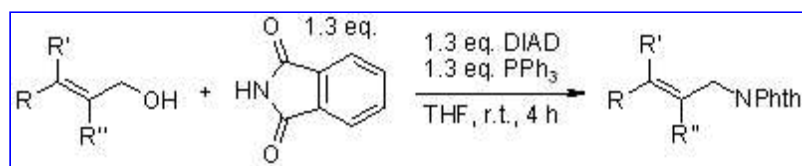
Cleavage:



Recent Literature



Organic Reactions in Ionic liquids: N-Alkylation of Phthalimide and Several Nitrogen Heterocycles
 Z.-G. Le, Z.-C. Chen, Y. Hu, Q.-G. Zheng, *Synthesis*, **2004**, 208-212.



A convenient Two-Step Procedure for the Synthesis of Substituted Allylic Amines from Allylic Alcohols
 S. E. Sen, S. L. Roach, *Synthesis*, **1995**, 756-758.