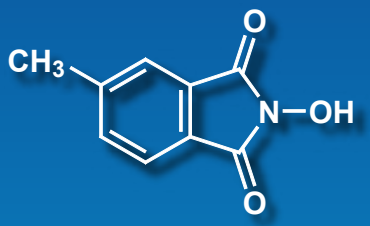
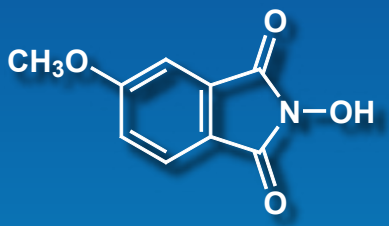
CHEMISTRY

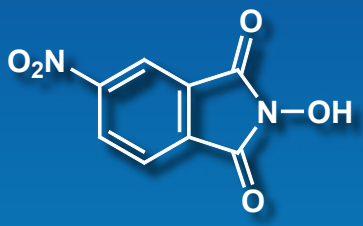
N-Hydroxyphthalimide Derivatives for the Synthesis of Redox Active Esters



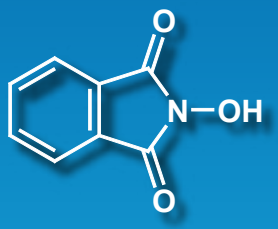
4-Methyl-*N*-hydroxyphthalimide
1g / 5g
[M3571] New



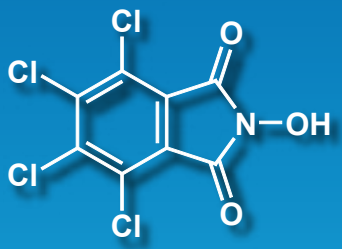
4-Methoxy-*N*-hydroxyphthalimide
1g / 5g
[M3572] New



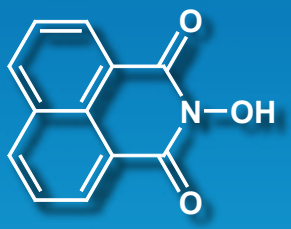
***N*-Hydroxy-4-nitrophthalimide**
1g / 5g
[H1036]



***N*-Hydroxyphthalimide**
25g / 100g / 500g
[H0395]



***N*-Hydroxytetrachlorophthalimide**
1g / 5g
[H1765]

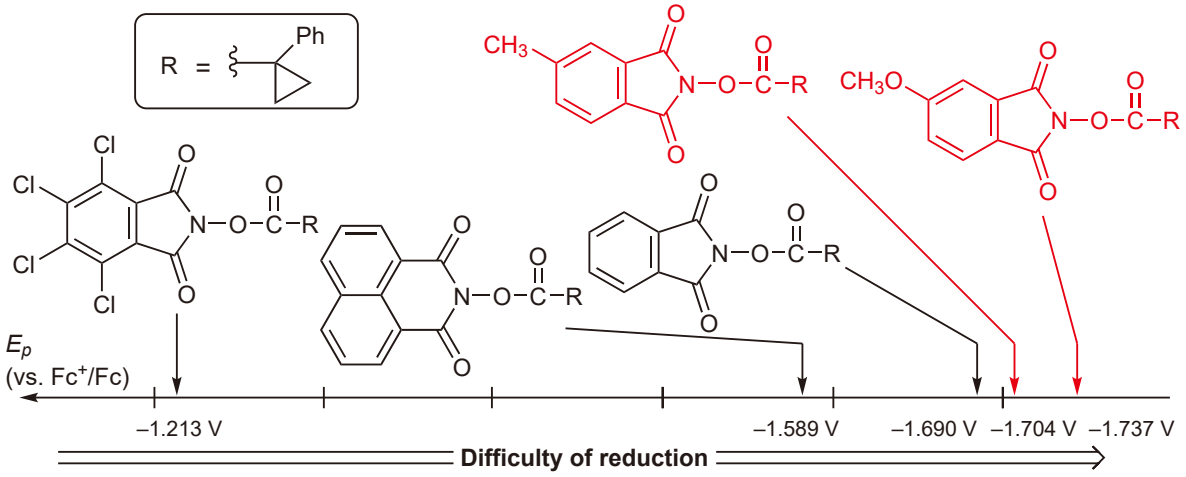


***N*-Hydroxy-1,8-naphthalimide**
5g / 25g
[H1040]

Advantages

- Enables the synthesis of redox-active esters (RAEs) by condensation with carboxylic acids.
- Obtained RAEs are applicable to C(sp^2)-C(sp^3) cross-coupling reactions.
- The reduction potential of RAE can be adjusted by substituents of *N*-hydroxyphthalimide derivatives.
- The resulting RAE forms a photoactive electron donor-receptor complex with the electron donors such as Hantzsch ester.

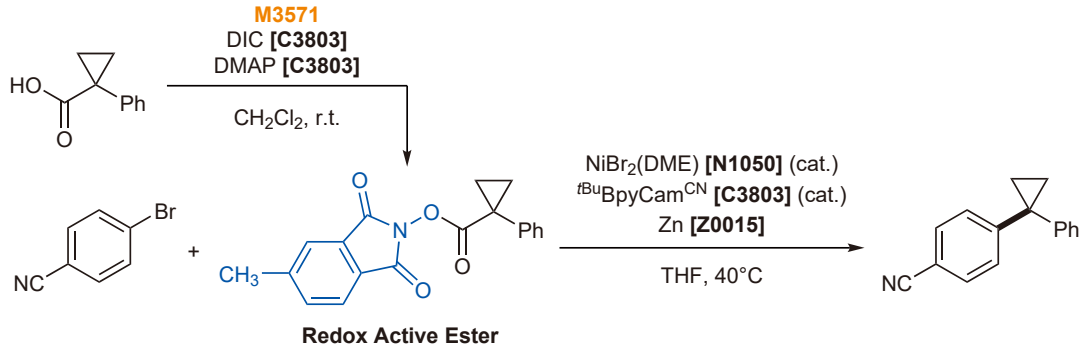
Comparison of reduction potentials of redox-active esters [1)]



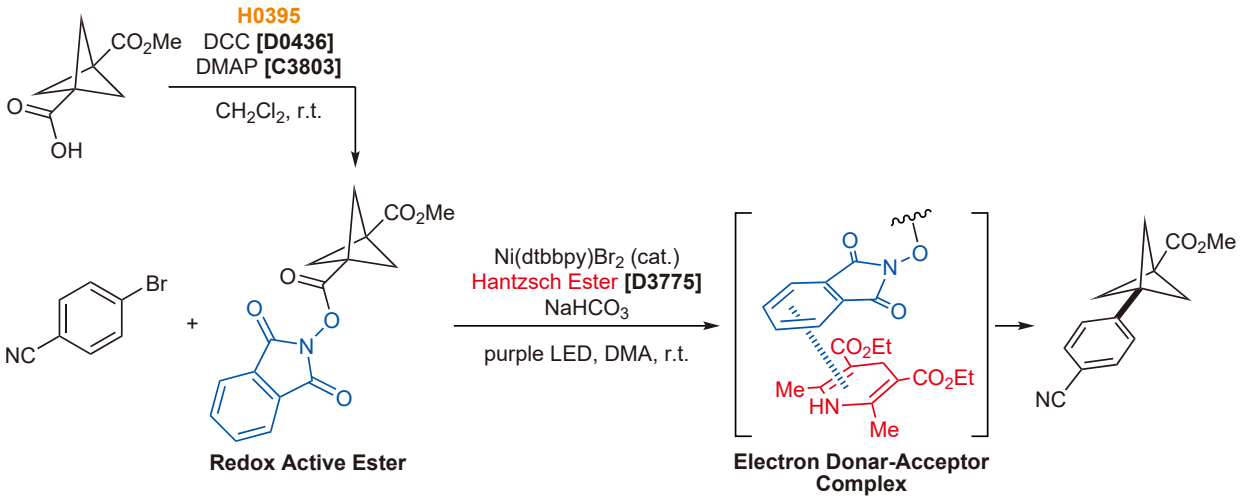
N-Hydroxyphthalimide Derivatives for the Synthesis of Redox Active Esters

Applications

Decarboxylative Cross-Coupling Reaction between Small-Ring Alkyl Carboxylic Acid Active Ester and Aryl Bromide [1)]



Photoredox Catalyst-Free Decarboxylative Cross-Coupling Reaction between Bicyclo[1.1.1]pentane Carboxylic Acid Active Ester and Aryl Bromide [2)]



References 1) D. C. Salgueiro, B. K. Chi, I. A. Guzei, P. García-Reynaga, D. J. Weix, *Angew. Chem. Int. Ed.* **2022,** *61*, e202205673. https://doi.org/10.1002/anie.202205673

2) V. C. Polites, S. O. Badir, S. Keess, A. Jolit, G. A. Molander, *Org. Lett.* **2021**, *23*, 4828. https://doi.org/10.1021/acs.orglett.1c01558

Related Products

Nickel(II) Bromide Ethylene Glycol Dimethyl Ether Complex (= $NiBr_2$(dme)) 1g / 10g [N1050]

4,4′-Di-*tert*-Butyl-*N*-cyano[2,2′-bipyridine]-6-carboximidamide (= ^{tBu}BpyCam^{CN}) 200m / 1g [C3803]

Zinc (Powder) 300g [Z0015]

Diethyl 1,4-Dihydro-2,6-dimethyl-3,5-pyridinedicarboxylate (= Hantzsch Ester) 1g / 5g / 25g [D3775]

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