

Thiophenes

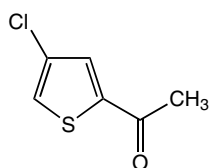
Thiophenes are an important class of heterocycles and have found great interest in a variety of fields from medicinal chemistry to material science. They are frequently found in various pharmaceuticals and drug candidates,¹ semiconductors,² liquid crystals³ and other molecular functional materials.⁴ Owing to their wide application in academia and industry, new methods and strategies for the generation of functionalized thiophenes derivatives are in demand. A number of new thiophene derivatives are now available through Alfa Aesar. Many have already been extensively cited in the scientific literature; here are just a few examples of their use.

Researchers at the Université Claude Bernard, Lyon France, have reported the synthesis of several thiophene inhibitors of alkaline phosphatase using H51060 as the starting material.⁵ Furthermore, workers in China have also used H51060 and developed an efficient synthesis of β -diketones from aromatic α -bromo ketones in the presence of Furukawa reagent under mild conditions.⁶

The Suzuki cross-coupling reactions of boronic acids have been extensively reported,⁷ and under such conditions, H32543 was used to yield a versatile diarylethene containing a 1,10-phenanthroline ligand, which exhibits photochromic and luminescence switching properties.⁸ Similarly, the thiophene moieties H53201 and B23637 were used to synthesize a series of 5-substituted, 6-substituted pyridine analogues of nicotine, as selective inhibitors of cytochrome P-450 2A6.⁹

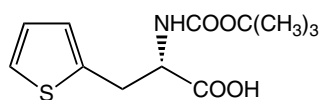
The thiophene H31867 was employed as in a convenient starting point for the synthesis of 2,3-diaminothieno[2,3-d]pyrimidin-4(3H)-one derivatives from substituted alkyl 2-(1H-tetrazol-1-yl)thiophene-3-carboxylates.¹⁰ The use of H30384 has been described in many papers and patents as starting material for more complex materials such as herbicides,¹¹ inhibitors of protein kinase B activity,¹² or in the treatment of cancer and arthritis.¹³

Alfa Aesar has extended its comprehensive range of heterocyclic compounds with the following thiophenes.



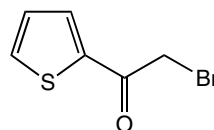
H30384

2-Acetyl-4-chlorothiophene,
98+%
[34730-20-6]



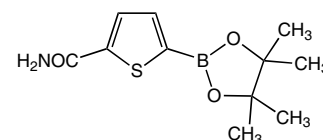
H51971

N-Boc-3-(2-thienyl)-L-alanine,
95%
[56675-37-7]



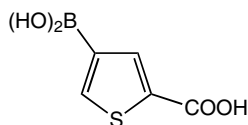
H51060

2-(Bromoacetyl)thiophene,
97%
[10531-41-6]



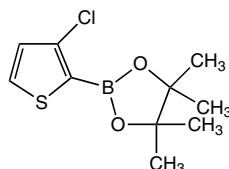
H52353

5-Carbamoylthiophene-2-boronic acid pinacol ester,
96%



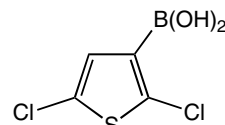
H53210

2-Carboxythiophene-4-boronic acid, 98%
[913835-91-3]



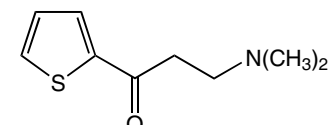
H31951

3-Chlorothiophene-2-boronic acid pinacol ester, 95%



H32803

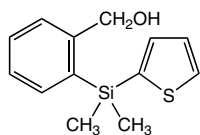
2,5-Dichlorothiophene-3-boronic acid, 95%
[177735-28-3]



H52377

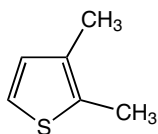
3-Dimethylamino-1-(2-thienyl)-1-propanone hydrochloride,
97+%
[5424-47-5]

Thiophenes



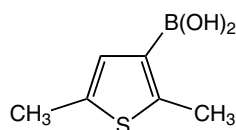
H51663

2-[(Dimethyl(2-thienyl)silyl)methyl]benzyl alcohol
[853955-72-3]



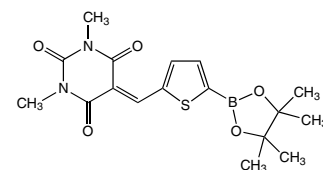
H31641

2,3-Dimethylthiophene, 97%
[632-16-6]



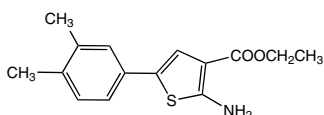
H32543

2,5-Dimethylthiophene-3-boronic acid, 95%
[162607-23-0]



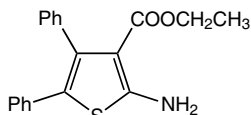
H51898

2-(1,3-Dimethyl-2,4,6-trioxohexahydro-5-ylidene-5-methylthiophene-5-boronic acid pinacol ester, 95%



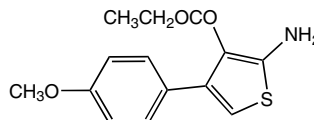
H31569

Ethyl 2-amino-4-(3,4-dimethylphenyl)thiophene-3-carboxylate, 96%
[307511-65-5]



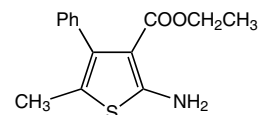
H51846

Ethyl 2-amino-4,5-diphenylthiophene-3-carboxylate, 97%



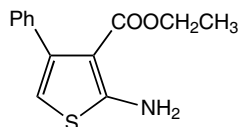
H32736

Ethyl 2-amino-4-(4-methoxyphenyl)thiophene-3-carboxylate, 96%
[15854-11-2]



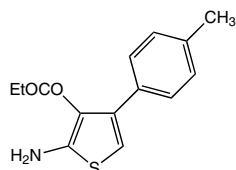
H51799

Ethyl 2-amino-5-methyl-4-phenylthiophene-3-carboxylate, 97%
[4815-37-6]



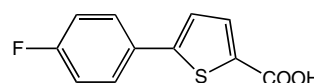
H31867

Ethyl 2-amino-4-phenylthiophene-3-carboxylate, 96%
[4815-36-5]



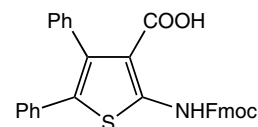
H31633

Ethyl 2-amino-4-(p-tolyl)thiophene-3-carboxylate, 97%
[15854-08-7]



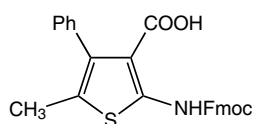
H31579

5-(4-Fluorophenyl)thiophene-2-carboxylic acid, 97%
[115933-30-7]



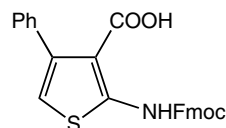
H51855

2-(Fmoc-amino)-4,5-diphenylthiophene-3-carboxylic acid, 97%



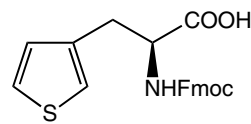
H51843

2-(Fmoc-amino)-5-methyl-4-phenylthiophene-3-carboxylic acid, 97%



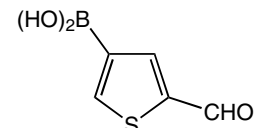
H51802

2-(Fmoc-amino)-4-phenylthiophene-3-carboxylic acid, 97%



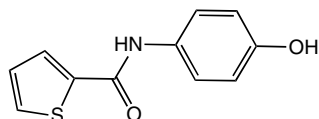
H52167

N-Fmoc-3-(3-thienyl)-L-alanine, 95%
[186320-06-9]



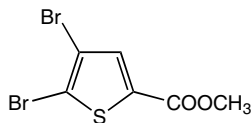
H53298

2-Formylthiophene-4-boronic acid, 98%
[175592-59-3]



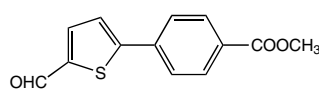
H32772

N-(4-Hydroxyphenyl)thiophene-2-carboxamide, 97%
[98902-53-5]



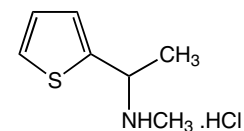
H32113

Methyl 4,5-dibromothiophene-2-carboxylate, 97%
[62224-24-2]



H52266

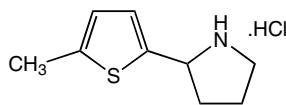
Methyl 4-(5-formyl-2-thienyl)benzoate, 95%



H51109

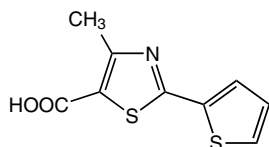
N-Methyl-1-(2-thienyl)ethylamine hydrochloride

Thiophenes



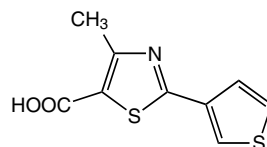
H51958

2-(5-Methyl-2-thienyl)
pyrrolidine hydrochloride



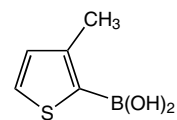
H51798

4-Methyl-2-(2-thienyl)thiazole-
5-carboxylic acid, 97%



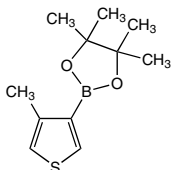
H51803

4-Methyl-2-(3-thienyl)thiazole-
5-carboxylic acid, 97%



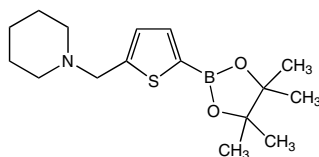
H53201

3-Methylthiophene-2-boronic
acid, 98%
[177735-09-0]



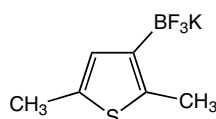
H32023

4-Methylthiophene-3-boronic
acid pinacol ester, 95%
[476620-20-9]



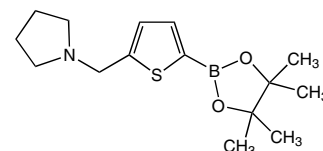
H51117

5-(1-Piperidinylmethyl)
thiophene-2-boronic acid
pinacol ester



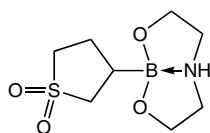
H31781

Potassium 2,5-dimethylthio-
phene-3-trifluoroborate, 95%



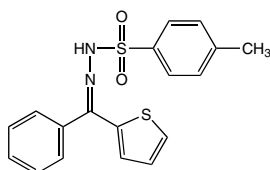
H51118

5-(1-Pyrrolidinylmethyl)
thiophene-2-boronic acid
pinacol ester



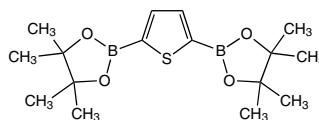
H31355

Tetrahydrothiophene-1,1-
dioxide-3-boronic acid
diethanolamine ester, 97%



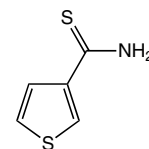
H53384

α -(2-Thienyl)benzaldehyde
p-toluenesulfonylhydrazone,
97%
[105417-05-8]



H51725

Thiophene-2,5-diboronic acid
bis(pinacol) ester, 97%
[175361-81-6]



H51830

Thiophene-3-thiocarboxamide,
97%
[24044-76-6]

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⁹ T. T. Denton, X. Zhang, & J. R. Cashman, *J. Med. Chem.*, 2005, **48**, 224.

¹⁰ N. T. Pokhodylo, V. S. Matyichuk, & M. D. Obushak, *Tetrahedron*, 2008, **64**, 1430.

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¹³ SMITHKLINE BEECHAM CORPORATION, Patent: WO2007/76423 A2, 2007.