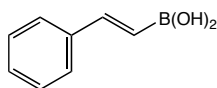


# Boronic acids

A major role in modern chemistry is played by organoboron compounds, among which boronic acids have emerged in a leading position. With the discovery of a wealth of new chemistry, in particular the Suzuki-Miyaura cross-coupling reaction, together with their accessibility and ease of handling, boronic acids and boronates are now established as intermediates of great value and versatility. Applications abound in synthesis, catalysis, analytical chemistry and biological systems. Boronic acids and their derivatives are among the most useful classes of organoboron molecules. Unlike many organometallic derivatives and most organoboranes, boronic acids are usually stable to air and moisture, and are of relatively low toxicity and environmental impact.

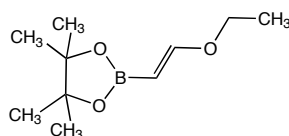
With a recently expanded range of well over 2500 boronic acids, esters, organotrifluoroborates and organotetrafluoroborates, Alfa Aesar, now part of Thermo Fisher Scientific, can provide outstanding synthetic and analytical expertise in these products. Some of this extensive range of boronic acids and their derivatives are listed here along with useful reagents and catalysts for reactions involving boronic acids. They are available from stock in catalog sizes and many are available in bulk from stock.

## Alkenylboronic acids and esters



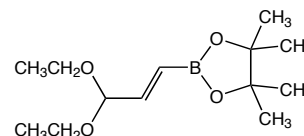
**H53227**

trans- $\beta$ -Styrylboronic acid, 97%  
[6783-05-7]



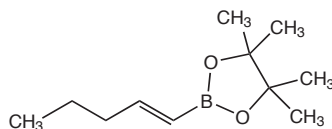
**H33367**

trans-2-Ethoxyethenyl-1-boronic acid pinacol ester, 98%  
[1201905-61-4]



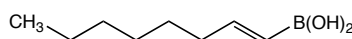
**L19579**

3,3-Diethoxy-trans-1-propenylboronic acid pinacol ester, 97%  
[153737-25-8]



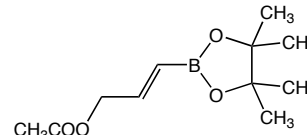
**H27749**

(E)-1-Pentenylboronic acid pinacol ester, 98%  
[161395-96-6]



**H52634**

trans-1-Octenyl boronic acid, 98%  
[42599-16-6]



**L19701**

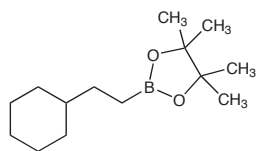
5-Phenyl-1-pentenylboronic acid pinacol ester, 96%  
[154820-97-0]

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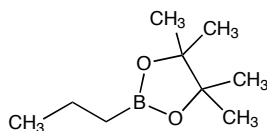
# Boronic acids

## Alkylboronic acids and esters



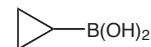
**H31156**

2-Cyclohexylethylboronic acid pinacol ester, 96%  
[167692-95-7]



**H30441**

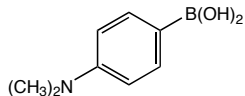
1-Propylboronic acid pinacol ester, 98%  
[67562-19-0]



**H26254**

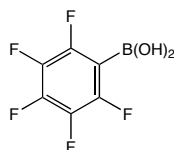
Cyclopropylboronic acid tech. 85%  
[411235-57-9]

## Arylboronic acids



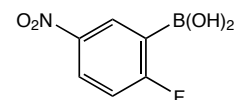
**H55723**

4-(Dimethylamino)benzeneboronic acid, 97%  
[28611-39-4]



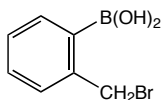
**B22922**

2,3,4,5,6-Pentafluorobenzeneboronic acid, 97%  
[1582-24-7]



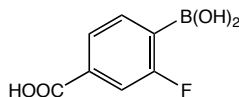
**H64100**

2-Fluoro-5-nitrobenzeneboronic acid, 97%  
[819849-20-2]



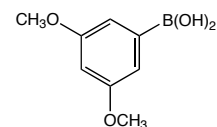
**H52467**

2-(Bromomethyl)benzeneboronic acid, 97%  
[91983-14-1]



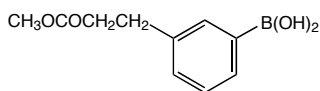
**H55857**

4-Carboxy-2-fluorobenzeneboronic acid, 97%  
[851135-07-4]



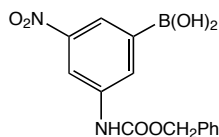
**H52965**

3,5-Dimethoxybenzeneboronic acid, 98%  
[192182-54-0]



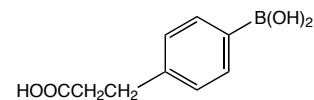
**H52542**

3-(2-Methoxycarbonyl)ethyl)benzeneboronic acid, 97%  
[833472-82-5]



**H52536**

3-Benzyloxycarbonylamino-5-nitrobenzeneboronic acid, 98%  
[874219-56-4]

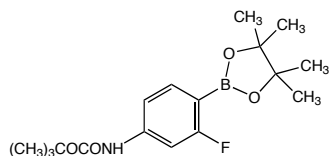


**L17485**

4-(2-Carboxyethyl)benzeneboronic acid, 97%  
[166316-48-9]

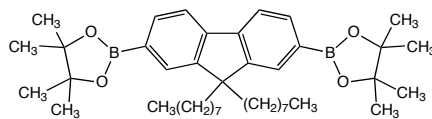
# Boronic acids

## Arylboronic esters



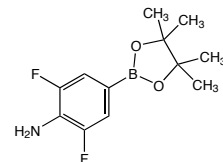
**H59194**

4-(Boc-amino)-2-fluorobenzeneboronic acid pinacol ester, 96%  
[1256256-45-7]



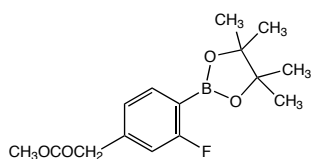
**H51955**

9,9-Di-n-octylfluorene-2,7-diboronic acid bis(pinacol) ester, 95%  
[196207-58-6]



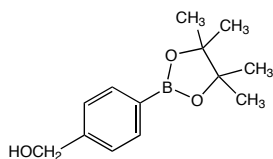
**H62654**

4-Amino-3,5-difluorobenzeneboronic acid pinacol ester, 96%  
[939968-08-8]



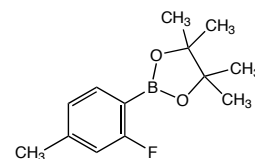
**H59738**

2-Fluoro-4-(methoxycarbonylmethyl)benzeneboronic acid pinacol ester, 96%  
[1259022-70-2]



**H51123**

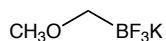
4-(Hydroxymethyl)benzeneboronic acid  
[302348-51-2]



**H59126**

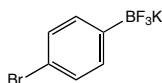
2-Fluoro-4-methylbenzeneboronic acid, 96%  
[1165936-03-7]

## Aryltrifluoroborate and tetrafluoroborate salts



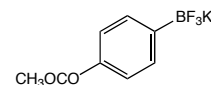
**H32674**

Potassium methoxy-methyltrifluoroborate, 95%  
[910251-11-5]



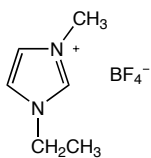
**L17967**

Potassium 4-bromophenyltrifluoroborate, 97%  
[374564-35-9]



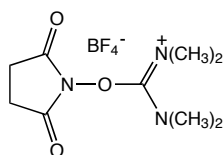
**H52588**

Potassium 4-(methoxycarbonyl)phenyltrifluoroborate, 96%  
[705254-34-8]



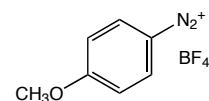
**L19763**

1-Ethyl-3-methylimidazolium tetrafluoroborate, 98+% (dry wt.)  
[143314-16-3]



**L13538**

2-Succinimido-1,1,3,3-tetramethyluronium tetrafluoroborate, 98%  
[105832-38-0]

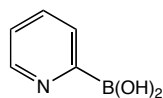


**H55315**

4-Nitrobenzenediazonium tetrafluoroborate, 97%  
[456-27-9]

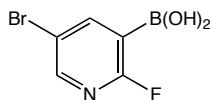
# Boronic acids

## Heterocyclic boronic acids



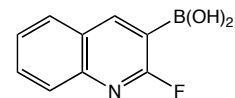
**H53314**

Pyridine-2-boronic acid, 95%  
[197958-29-5]



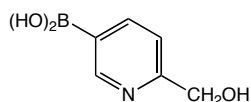
**L19915**

5-Bromo-2-fluoropyridine-3-boronic  
acid, 98%  
[501435-91-2]



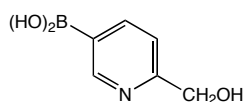
**L20341**

2-Fluoroquinoline-3-boronic  
acid, 97%  
[745784-10-5]



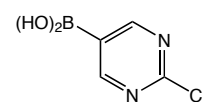
**H53319**

2-(Hydroxymethyl)pyridine-5-  
boronic acid, 97%  
[913835-98-0]



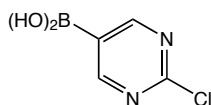
**H52697**

4-Chloropyridine-3-boronic acid,  
98%  
[452972-10-0]



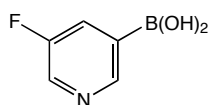
**H64949**

2-Chloropyrimidine-5-  
boronic acid, 96%  
[1003845-06-4]



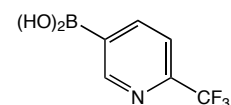
**H53133**

5-(Methylsulfonyl)pyridine-3-boronic  
acid, 98%  
[913836-01-8]



**H52860**

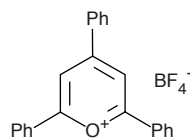
5-Fluoropyridine-3-boronic acid,  
98%  
[872041-86-6]



**H64106**

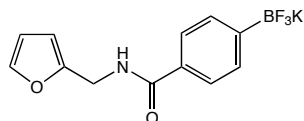
2-(Trifluoromethyl)pyridine-  
5-boronic acid, 98%  
[868662-36-6]

## Heterocyclic trifluoroborate salts



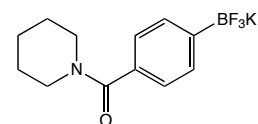
**A18217**

2,4,6-Triphenylpyrylium  
tetrafluoroborate, 97%  
[448-61-3]



**H51147**

Potassium 4-(furfurylaminocarbonyl)  
phenyltrifluoroborate

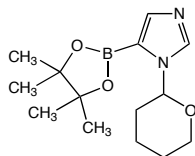


**H51146**

Potassium 4-(1-pyrrolidinylcarbonyl)  
phenyltrifluoroborate, 95%  
[1359865-98-7]

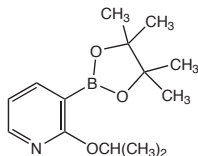
# Boronic acids

## Heterocyclic boronic esters



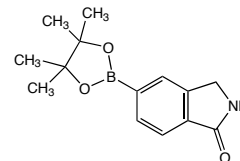
**H32369**

1-(2-Tetrahydropyranyl)-1H-imidazole-5-boronic acid pinacol ester, 95%  
[1029684-37-4]



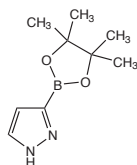
**H50097**

2-Isopropoxy-pyridine-3-boronic acid pinacol ester, 96%  
[848243-25-4]



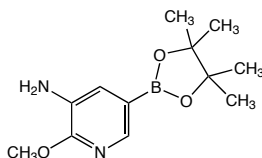
**H52317**

1-Isoindolinone-5-boronic acid pinacol ester, 96%  
[376584-62-2]



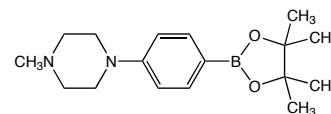
**H27619**

1H-Pyrazole-3-boronic acid pinacol ester, 95%  
[844501-71-9]



**H54570**

3-Amino-2-methoxypyridine-5-boronic acid pinacol ester, 96%  
[893440-50-1]



**H51659**

4-(4-Methyl-1-piperazinyl)benzeneboronic acid pinacol ester, 96%  
[747413-21-4]

## Boronation reagent

Stock No.	Description	Sizes
L16088	Bis(pinacolato)diboron, 98+%	1g, 5g, 25g
L14998	Catecholborane, 97%	5g, 14g
H30234	Catecholborane, 50% w/w in toluene (98% dry wt.)	25g, 100g
L17558	Pinacolborane, 97%	5g, 25g
A10909	Sodium tetraphenylborate, 99%	5g, 25g, 100g
036430	Sodium tetraphenylborate, ACS, 99.5% min	2g, 10g, 50g
A10211	Tetraethylammonium tetrafluoroborate, 99%	5g, 50g, 100g
018208	Tetrafluoroboric acid-diethyl ether complex, 50-55% w/w HBF <sub>4</sub>	25ml, 250ml

Full product listing is available online.

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# Boronic acids

## Oxazaborolidine reagents

Stock No.	Description	Sizes
L07705	Borane-dimethyl sulfide complex, 94%	25ml, 100ml
L13961	Borane-tetrahydrofuran complex, 1M soln. in THF, stab. with 5mmol NaBH <sub>4</sub>	25ml, 100ml, 500ml
L09217	(S)-(-)- $\alpha,\alpha$ -Diphenylprolinol, 99%	1g, 5g
L09218	(R)-(+)- $\alpha,\alpha$ -Diphenylprolinol, 99%	250mg, 1g
L09219	(S)-2-Methyl-CBS-oxazaborolidine monohydrate, 94%	250mg, 1g
L09230	(R)-2-Methyl-CBS-oxazaborolidine monohydrate, 94%	250mg, 1g
L14582	(R)-2-Methyl-CBS-oxazaborolidine, 1M soln. in toluene	1ml, 5ml, 25ml
L14583	(S)-2-Methyl-CBS-oxazaborolidine, 1M soln. in toluene	1ml, 5ml, 25ml

## Coupling catalysts

Stock No.	Description	Sizes
010002	Bis(acetonitrile)dichloropalladium(II), Pd 40.5%	1g, 5g
010006	trans-Bis(benzonitrile)dichloropalladium(II), Pd 27.1%	0.5g, 1g
012764	Bis(dibenzylideneacetone)palladium(0)	0.25g, 1g, 5g
039288	Bis(ethylene)(2,4-pentanedionato)rhodium(I), Rh 39.9% min	250mg, 1g
A16203	Copper(II) acetate monohydrate, 98+%	250g, 1000g, 5000g
010491	trans-Dichlorobis(triphenylphosphine)palladium(II), Pd 14.0% min	1g, 5g, 25g
044446	Di- $\mu$ -bromobis(tri-tert-butylphosphine)dipalladium(I)	0.1g, 0.5g, 2g
018779	Dichloro[1,2-bis(diphenylphosphino)ethane]palladium(II), Pd 18.5%	2g, 10g
041225	Dichloro[1,1'-bis(diphenylphosphino)ferrocene]palladium(II), complex with dichloromethane (1:1), Pd 13%	1g, 5g, 25g
030167	Dichloro[bis(1,3-diphenylphosphino)propane]nickel(II)	2g, 10g
039295	Dicarbonyl(2,4-pentanedionato)rhodium(I), 99%	250mg, 1g, 5g
044844	Dichlorobis(tricyclohexylphosphine)palladium(II)	1g
013930	Dichlorobis(triphenylphosphine)nickel(II), 98%	10g, 50g
010516	Palladium(II) acetate, Pd 45.9-48.4%	1g, 5g, 25g
A12623	Palladium, 5% on carbon, Type 87L, dry	10g, 50g
A12012	Palladium, 10% on carbon, Type 487, dry	2g, 10g, 50g
011034	Palladium(II) chloride, 99.9% (metals basis), Pd 59.0% min	0.5g, 2g, 10g, 50g
010517	Palladium(II) 2,4-pentanedionate, Pd 34.7%	1g, 5g
011886	Sodium tetrachloropalladate(II) hydrate, 99.95% (metals basis), Pd 30%	2g, 10g, 50g
012760	Tris(dibenzylideneacetone)dipalladium(0), Pd 21.5% min	1g, 5g
010548	Tetrakis(triphenylphosphine)palladium(0), 99.8% (metals basis), Pd 9% min	0.5g, 2g, 10g
010549	Tetrakis(triphenylphosphine)platinum(0), Pt 15.2% min	1g, 5g

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