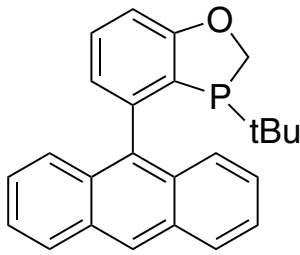
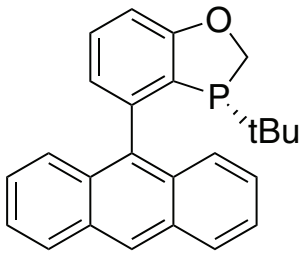
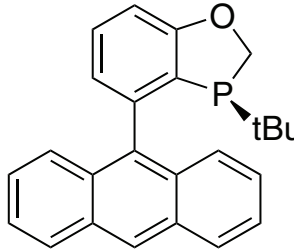
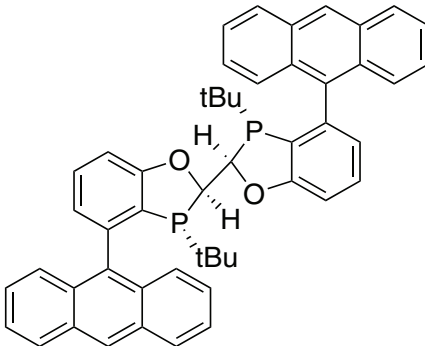
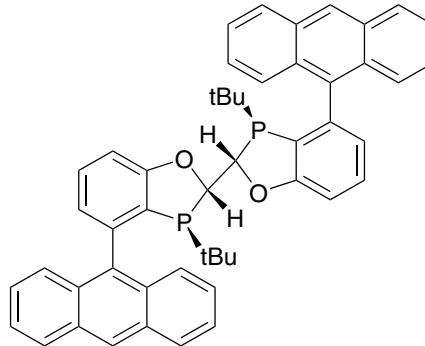


Sold in collaboration with Zejun for research purposes only. Patents ZL201310020371.1, CN 201610056390.

| | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  <p>15-1960 <i>rac-AntPhos</i> 250mg</p> |  <p>15-1963 <i>(R)-AntPhos</i> 100mg</p> |  <p>15-1967 <i>(S)-AntPhos</i> 100mg</p> | |
|  <p>15-1970 <i>(2R,2'R,3R,3'R)-WingPhos</i> 25mg</p> | |  <p>15-1975 <i>(2S,2'S,3S,3'S)-WingPhos</i> 25mg</p> | |

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 96-3810 AntPhos and WingPhos Kit <i>This kit contains the follow of each of the products shown above.</i> | 1 kit |
| 15-1960 4-(Anthracen-9-yl)-3-(t-butyl-2,3-dihydrobenzo[d][1,3]oxaphosphole, 98+% <i>rac-AntPhos</i> (1268693-24-8) | 250mg |
| 15-1963 (R)-4-(Anthracen-9-yl)-3-(t-butyl-2,3-dihydrobenzo[d][1,3]oxaphosphole,98+% (>99% ee) [(R)-AntPhos] (1456816-37-7) | 100mg |
| 15-1967 (S)-4-(Anthracen-9-yl)-3-(t-butyl-2,3-dihydrobenzo[d][1,3]oxaphosphole,99+% (>99% ee) [(S)-AntPhos] (1807740-34-6) | 100mg |
| 15-1970 (2R,2'R,3R,3'R)-4,4'-Di(anthracen-9-yl)-3,3'-di-t-butyl-2,2',3,3'-tetrahydro-2,2'-bibenzo[d][1,3]oxaphosphole, min 98% (>90% ee), [(2R,2'R,3R,3'R)-WingPhos] (1884680-45-8) | 25mg |
| 15-1975 (2S,2'S,3S,3'S)-4,4'-Di(anthracen-9-yl)-3,3'-di-t-butyl-2,2',3,3'-tetrahydro-2,2'-bibenzo[d][1,3]oxaphosphole, min 98%, (>99% ee), [(2S,2'S,3S,3'S)-WingPhos] (1435940-19-4) | 25mg |

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Strem Chemicals, Inc.
7 Mulliken Way
Newburyport, MA 01950
U.S.A
Tel: 978.499.1600
Fax: 978.465.3104
Email: info@strem.com

Strem Chemicals, Inc.
15, rue de l'Atome
Zone Industrielle
67800 BISCHHEIM France
Tel: (33) 03 88 62 52 60
Fax: (33) 03 88 62 26 81
Email: info.europe@strem.com

Strem Chemicals, Inc.
Postfach 1215
77672 KEHL
Germany
Tel: 0 78 51/ 7 58 79
Email: info.europe@strem.com

Strem Chemicals UK Ltd.
An Independent Distributor of Strem Chemicals Products
Newton Hall, Town Street
Newton, Cambridge
England CB22 7ZE
Tel: 0845 643 7263
Fax: 0845 643 7362
Email: enquiries@strem.co.uk

15-1960 4-(Anthracen-9-yl)-3-(t-butyl-2,3-dihydrobenzo[d][1,3]oxaphosphole, 98+% rac-AntPhos

(1268693-24-8)

C₂₅H₂₃O₃P; FW: 370.42; pale yellow pwr.
air sensitive, (store cold)

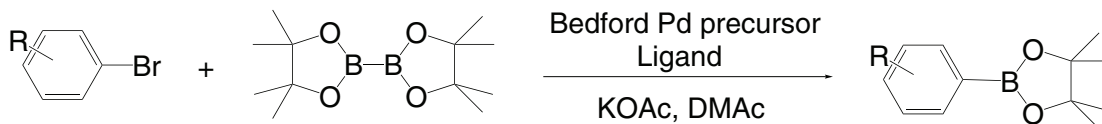
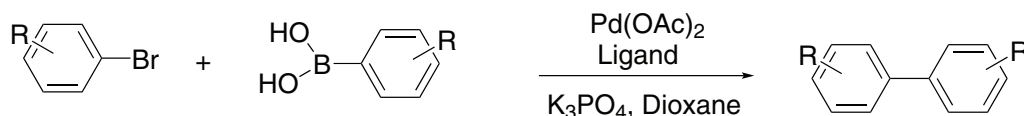
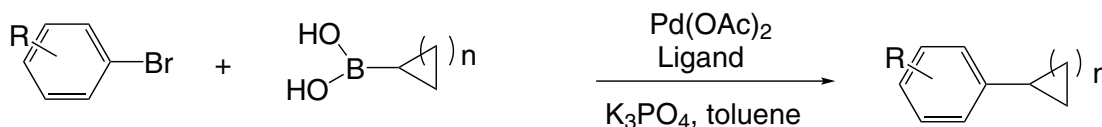
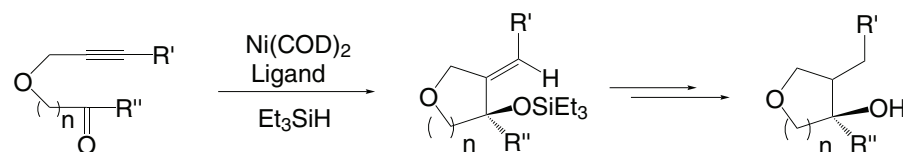
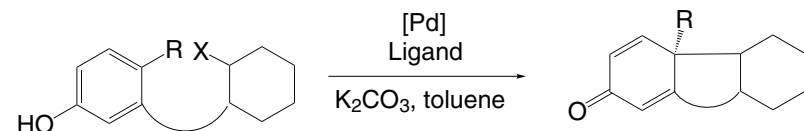
250mg

1g

5g

Technical Notes:

1. Ligand/palladium catalyst for general Miyaura borylation reactions.
2. Ligand/palladium catalyst for general and sterically demanding Suzuki-Miyaura cross-coupling reactions
3. Ligand/palladium catalyst for aryl-alkyl Suzuki-Miyaura cross-coupling reactions.
4. Ligand/nickel catalyst for intramolecular reductive cyclization
5. Ligand/palladium catalyst for Dearomative cyclization

Tech Note (1)
Ref (1)Tech Note (2)
Ref (2)Tech Note (3)
Ref (3)Tech Note (4)
Ref (4)Tech Note (5)
Ref (5,6)

References:

1. *Org. Lett.*, **2011**, *13*, 1366.
2. *Chem. Eur. J.*, **2013**, *19*, 2261.
3. *Org. Chem. Front.*, **2014**, *1*, 225.
4. *Angew. Chem. Int. Ed.*, **2015**, *54*, 2520.
5. *Angew. Chem. Int. Ed.*, **2015**, *54*, 3033.
6. *Tetrahedron*, **2016**, *72*, 1782.

15-1963 (R)-4-(Anthracen-9-yl)-3-(t-butyl-2,3-dihydrobenzo[d][1,3]oxaphosphole, 98+% (>99% ee)

[(R)-AntPhos] (1456816-37-7)

C₂₅H₂₃O₃P; FW: 370.42; light-yellow xtl.
air sensitive, (store cold)

100mg

500mg

2g

Technical Notes:

1. See 15-1960

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7 Mulliken Way
Newburyport, MA 01950
U.S.A
Tel: 978.499.1600
Fax: 978.465.3104
Email: info@strem.com

Strem Chemicals, Inc.
15, rue de l'Atome
Zone Industrielle
67800 BISCHHEIM France
Tel: (33) 03 88 62 52 60
Fax: (33) 03 88 62 26 81
Email: info.europe@strem.com

Strem Chemicals, Inc.
Postfach 1215
77672 KEHL
Germany
Tel: 0 78 51/ 7 58 79
Email: info.europe@strem.com

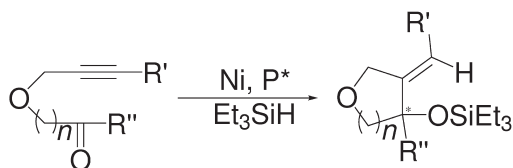
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An Independent Distributor of Strem Chemicals Products
Newton Hall, Town Street
Newton, Cambridge
England CB22 7ZE
Tel: 0845 643 7263
Fax: 0845 643 7362
Email: enquiries@strem.co.uk

15-1967 (S)-4-(Anthracen-9-yl)-3-(t-butyl-2,3-dihydrobenzo[d][1,3]oxaphosphole, 99+% (>99% ee)
[(S)-AntPhos] (1807740-34-6)
 C₂₅H₂₃O₃P; FW: 370.42; light yellow xtl.
air sensitive, (store cold)

100mg
 500mg
 2g

Technical Notes:

- Ligand for the enantioselective nickel-catalyzed intramolecular reductive cyclization of alkynones.



Tech Note (1)
Ref (1)

References:

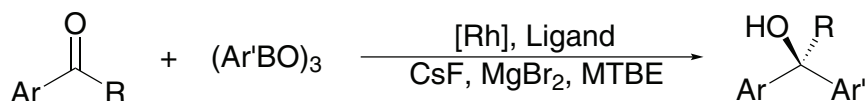
- Angew. Chem.Int Ed.*, **2015**, *54*, 2520.

15-1970 (2R,2'R,3R,3'R)-4,4'-Di(anthracen-9-yl)-3,3'-di-t-butyl-2,2',3,3'-tetrahydro-2,2'-bibenzo[d][1,3]oxaphosphole, min 98% (>90% ee), [(2R,2'R,3R,3'R)-WingPhos] (1884680-45-8)
 C₅₀H₄₄O₂P₂; FW: 738.83; light yellow powdr.
air sensitive, (store cold)

25mg
 100mg
 500mg

Technical Notes:

- Ligand for rhodium-catalyzed enantioselective addition of arylboroxines to simple aryl ketones.



Tech Note (1)
Ref (1)

References:

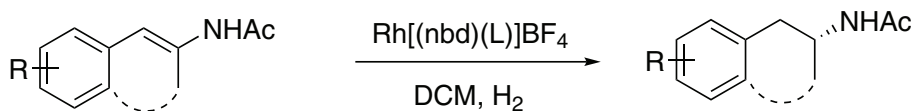
- Angew. Chem.Int Ed.*, **2016**, *55*, 4527.

15-1975 (2S,2'S,3S,3'S)-4,4'-Di(anthracen-9-yl)-3,3'-di-t-butyl-2,2',3,3'-tetrahydro-2,2'-bibenzo[d][1,3]oxaphosphole, min 98%, (>99% ee), [(2S,2'S,3S,3'S)-WingPhos] (1435940-19-4)
 C₅₀H₄₄O₂P₂; FW: 738.83; light yellow powdr.
air sensitive, (store cold)

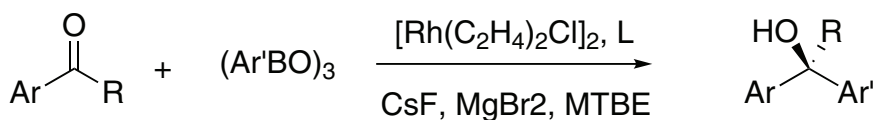
25mg
 100mg
 500mg

Technical Notes:

- Ligand/Rhodium catalyst for asymmetric hydrogenation.
- Ligand/Rhodium catalyst for asymmetric arylboronic reagents addition to aryl ketones.



Tech Note (1)
Ref (1)



Tech Note (2)
Ref (2)

References:

- Angew. Chem.Int Ed.*, **2013**, *52*, 4235.
- Angew. Chem.Int Ed.*, **2016**, *55*, 4527.

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 Newburyport, MA 01950
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 Tel: 978.499.1600
 Fax: 978.465.3104
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Strem Chemicals, Inc.
 15, rue de l'Atome
 Zone Industrielle
 67800 BISCHHEIM France
 Tel: (33) 03 88 62 52 60
 Fax: (33) 03 88 62 26 81
 Email: info.europe@strem.com

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 Postfach 1215
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