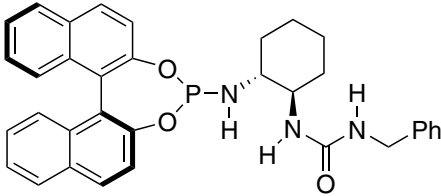
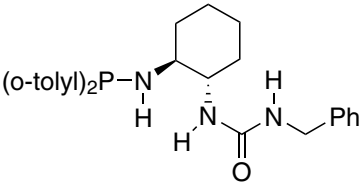
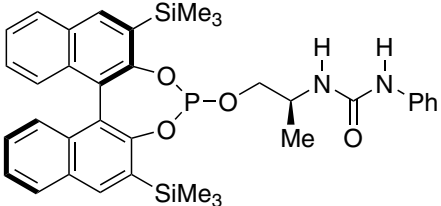
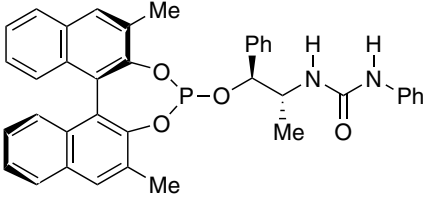
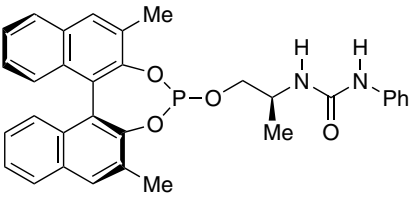
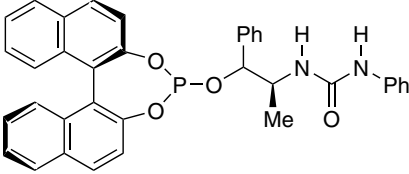
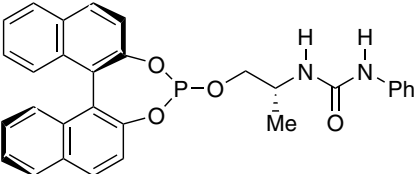
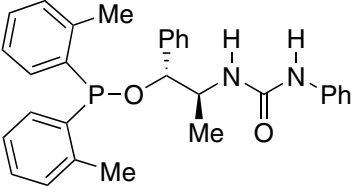
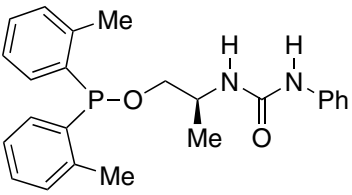
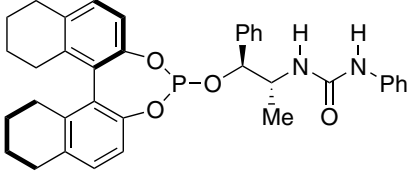
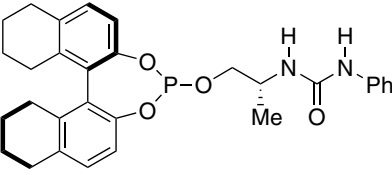




UREAPhos & METAMORPhos Ligand Kit

for Asymmetric Hydrogenation

UREAPhos

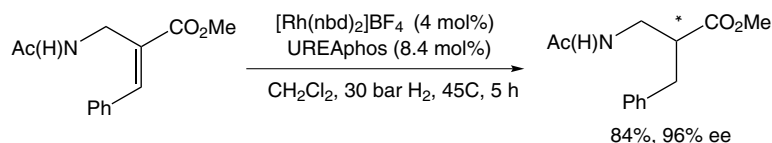
 Item# 15-2208	 Item# 15-2210	 Item# 15-2216
 Item# 15-2206	 Item# 15-2204	 Item# 15-2202
 Item# 15-2200	 Item# 15-2214	 Item# 15-2212
 Item# 15-2224	 Item# 15-2222	

UREAPhos

15-2208	1-Benzyl-3-[(1R,2R)-2-[(11bS)-dinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphopin-4-ylamino]cyclohexyl]urea, min. 97% (1198080-57-7) C ₃₄ H ₃₂ N ₃ O ₃ P; FW: 561.61; white powder moisture sensitive, (store cold) Note: Sold under license from InCatT for research purposes only. WO2004/103559. UREAPhos and METAMORPhos Ligand Kit component.	50mg 250mg
---------	---	---------------

Technical Note:

- The UREAphos ligands are a new class of ligands containing a urea group, which due to its self-complementary hydrogen bond character, enables the formation of bidentate ligands in a supramolecular fashion. This interesting feature makes this ligand class highly suitable for combinatorial approaches and high throughput experimentation.



References:

- J. Chem. Soc. Chem. Comm.*, **2007**, 864.
- WO2004103559A2.

15-2210	1-Benzyl-3-[(1S,2S)-2-(di-o-tolylphosphinoamino)cyclohexyl]urea, min. 97% (1858223-87-6) C ₂₈ H ₃₄ N ₃ OP; FW: 459.56; white powder moisture sensitive, (store cold) Note: Sold under license from InCatT for research purposes only. WO2004/103559. UREAPhos and METAMORPhos Ligand Kit component.	50mg 250mg
---------	--	---------------

Technical Note:

- See 15-2208 (page 3)

15-2216	1-{(2S)-1-[(11bR)-2,6-Bis(trimethylsilyl)dinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphopin-4-yloxy]propan-2-yl}-3-phenylurea, min. 97% (1357562-70-9) C ₃₆ H ₄₁ N ₂ O ₄ PSi ₂ ; FW: 652.87; white powder moisture sensitive, (store cold) Note: Sold under license from InCatT for research purposes only. WO2004/103559. UREAPhos and METAMORPhos Ligand Kit component.	50mg 250mg
---------	--	---------------

Technical Note:

- See 15-2208 (page 3)

15-2206	1-{(1S,2R)-1-[(11bR)-2,6-Dimethyldinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphopin-4-yloxy]-1-phenylpropan-2-yl}-3-phenylurea, min. 97% (1858223-86-5) C ₃₈ H ₃₃ N ₂ O ₄ P; FW: 612.65; white powder moisture sensitive, (store cold) Note: Sold under license from InCatT for research purposes only. WO2004/103559. UREAPhos and METAMORPhos Ligand Kit component.	50mg 250mg
---------	---	---------------

Technical Note:

- See 15-2208 (page 3)

15-2204	1-{(2S)-1-[(11bS)-2,6-Dimethyldinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphopin-4-yloxy]propan-2-yl}-3-phenylurea, min. 97% (1357562-63-0) C ₃₂ H ₂₉ N ₂ O ₄ P; FW: 536.56; white powder moisture sensitive, (store cold) Note: Sold under license from InCatT for research purposes only. WO2004/103559. UREAPhos and METAMORPhos Ligand Kit component.	50mg 250mg
---------	---	---------------

Technical Note:

- See 15-2208 (page 3)

15-2202	1-[(1R,2S)-1-[(11bR)-Dinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphopin-4-yloxy]-1-phenylpropan-2-yl]-3-phenylurea, min. 97% (1198080-55-5) C ₃₆ H ₂₉ N ₂ O ₄ P; FW: 584.60; white powder moisture sensitive, (store cold) Note: Sold under license from InCatT for research purposes only. WO2004/103559. UREAPhos and METAMORPhos Ligand Kit component.	50mg 250mg
---------	---	---------------

Technical Note:

1. See 15-2208 (page 3)

15-2200	1-[(2R)-1-[(11bR)-Dinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphopin-4-yloxy]propan-2-yl]-3-phenylurea, min. 97% UREAPhos (1198080-53-3) C ₃₀ H ₂₅ N ₂ O ₄ P; FW: 508.50; white powder moisture sensitive, (store cold) Note: Sold under license from InCatT for research purposes only. WO2009/065856. UREAPhos and METAMORPhos Ligand Kit component.	50mg 250mg
---------	--	---------------

Technical Note:

1. See 15-2208 (page 3)

15-2214	1-[(1R,2S)-1-(Di-o-tolylphosphinoxy)-1-phenylpropan-2-yl]-3-phenylurea, min. 97% (1391410-56-2) C ₃₀ H ₃₁ N ₂ O ₂ P; FW: 482.55; white powder moisture sensitive, (store cold) Note: Sold under license from InCatT for research purposes only. WO2004/103559. UREAPhos and METAMORPhos Ligand Kit component.	50mg 250mg
---------	---	---------------

Technical Note:

1. See 15-2208 (page 3)

15-2212	1-[(2S)-1-(Di-o-tolylphosphinoxy)propan-2-yl]-3-phenylurea, min. 97% C ₂₄ H ₂₇ N ₂ P; FW: 406.46; white powder moisture sensitive, (store cold) Note: Sold under license from InCatT for research purposes only. WO2004/103559. UREAPhos and METAMORPhos Ligand Kit component.	50mg 250mg
---------	---	---------------

Technical Note:

1. See 15-2208 (page 3)

15-2224	1-[(1S,2R)-1-[(11bR)-8,9,10,11,12,13,14,15-Octahydrodinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphopin-4-yloxy]-1-phenylpropan-2-yl]-3-phenylurea, min. 97% (1858224-21-1) C ₃₆ H ₃₇ N ₂ O ₄ P; FW: 592.86; white powder moisture sensitive, (store cold) Note: Sold under license from InCatT for research purposes only. WO2004/103559. UREAPhos and METAMORPhos Ligand Kit component.	50mg 250mg
---------	--	---------------

Technical Note:

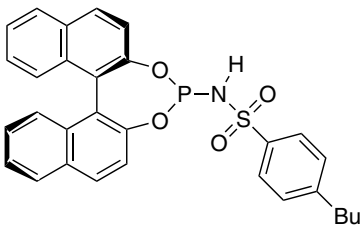
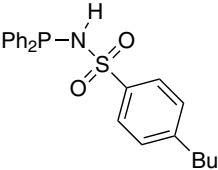
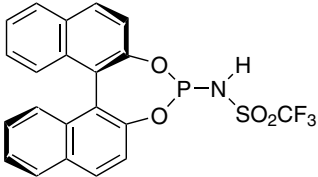
1. See 15-2208 (page 3)

15-2222	1-[(2R)-1-[(11bR)-8,9,10,11,12,13,14,15-Octahydrodinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphopin-4-yloxy]propan-2-yl]-3-phenylurea, min. 97% (1858223-90-1) C ₃₀ H ₃₃ N ₂ O ₄ P; FW: 516.57; white powder moisture sensitive, (store cold) Note: Sold under license from InCatT for research purposes only. WO2004/103559. UREAPhos and METAMORPhos Ligand Kit component.	50mg
---------	--	------

Technical Note:

1. See 15-2208 (page 3)

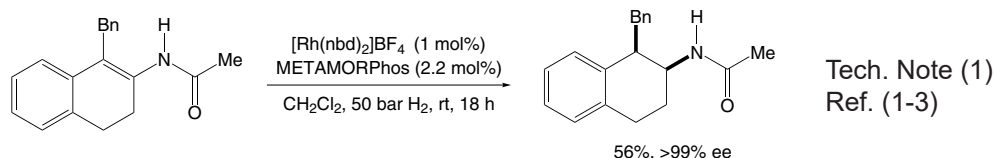
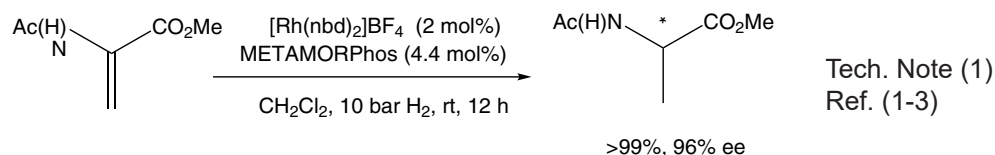
METAMORPhos

 Item# 15-2218	 Item# 15-2220	 Item# 15-2228
--	--	--

15-2218 4-Butyl-N-[(11bR)-dinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphepin-4-yl]benzenesulfonamide triethylamine adduct, min. 97% (1150592-91-8) 50mg
250mg
C₃₀H₂₆NO₄PS·(CH₃CH₂)₃N; FW: 527.57 (628.76); white powder
moisture sensitive, (store cold)
Note: Sold under license from InCatT for research purposes only. WO2009/065856.
UREAPhos and METAMORPhos Ligand Kit component.

Technical Note:

1. Chiral ligand for the rhodium-catalyzed asymmetric hydrogenation of α-β unsaturated substrates.



References:

1. *J. Am. Chem. Soc.*, **2009**, 131, 6683.
2. *Angew. Chem. Int. Ed.*, **2008**, 47, 3180.
3. Patent WO2009065856.

15-2220 4-Butyl-N-(diphenylphosphino)benzenesulfonamide, min. 97% (1025096-61-0) 50mg
250mg
C₂₂H₂₆NO₂PS; FW: 397.47; white powder
moisture sensitive, (store cold)
Note: Sold under license from InCatT for research purposes only. WO2009/065856.
UREAPhos and METAMORPhos Ligand Kit component.

Technical Note:

1. See 15-2218 (page 5)

15-2228 N-[(11bS)-Dinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphepin-4-yl]-1,1,1-trifluoromethanesulfonamide triethylamine adduct, min. 97% METAMORPhos (1493790-73-0) 50mg
250mg
C₂₁H₁₃F₃NO₄PS·(C₂H₅)₃N; FW: 564.56; white powder
moisture sensitive, (store cold)
Note: Sold under license from InCatT for research purposes only. WO2009/065856.
UREAPhos and METAMORPhos Ligand Kit component.

Technical Note:

1. See 15-2218 (page 5)



Headquartered in Bellevue, WA, **Ascensus Specialties** is the global leader in catalysts, ligands, building blocks, and specialty reagents. Our 60+ years of synthetic knowhow, allows us to bring additional value to our clients through our custom synthesis and cGMP services. From world-class production plants in Elma, WA, Evans City, PA, Newburyport, MA, and Cambridge, UK, Ascensus has a global reach that ensures our clients can consistently manufacture their products to the highest standards.

THE ASCENSUS ADVANTAGE

60+ Years Of Experience

Custom-Tailored Purity And Impurity Profiles

Commercial cGMP Capabilities

Supply Chain Development

Process Control And Robustness

Bioburden Control



CONTACT

P +1 · 424 · 448 · 1679

E ask@ascensusspecialties.com

U www.ascensusspecialties.com



CORPORATE OFFICE

Ascensus Specialties
2821 Northup Way, Suite 275
Bellevue, WA 98004



MANUFACTURING FACILITIES

4800 State Route 12
Elma, WA 98541

1424 Mars-Evans City Rd
Evans City, PA 16033

7 Mulliken Way
Newburyport, MA 01950

Haverhill Road,
Stradishall Newmarket
Suffolk, CB8 9EX