

<p><b>15-1457</b> R-MARUOKA CAT P-NB</p>	<p><b>15-1458</b> S-Maruoka CAT P-NB</p>	<p><b>15-1464</b> R-MARUOKA CAT P-TB</p>	<p><b>15-1465</b> S-MARUOKA CAT P-TB</p>
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## 96-3750 Maruoka Chiral Phase-Transfer Phosphonium Organocatalyst Kit

Components also available for individual sale.

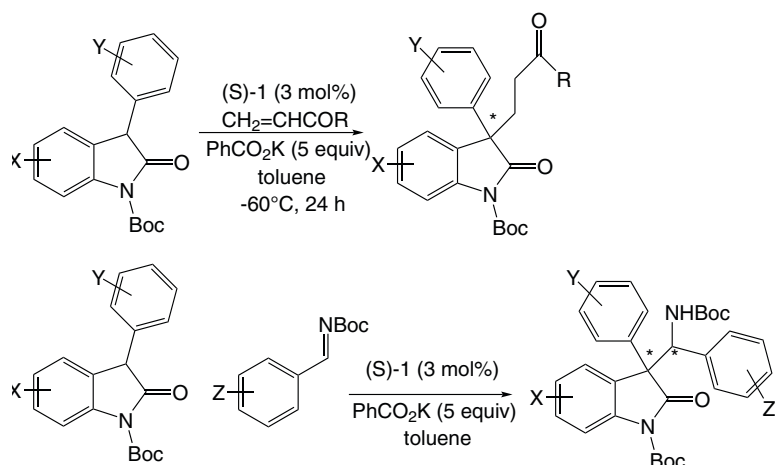
Contains the following:

**15-1457 (11bR)-(+)-4,4-Dibutyl-2,6-bis[3,5-bis(trifluoromethyl)phenyl]-4,5-dihydro-3H-dinaphtho[2,1-c:1',2'-e]phosphepinium bromide, 99%** 50mg  
R-MARUOKA CAT P-NB 250mg

[C<sub>46</sub>H<sub>38</sub>F<sub>12</sub>P]<sup>+</sup>Br<sup>-</sup>; FW: 929.65; white xtl.; m.p. 262-263°

Technical Note:

- Chiral, phase-transfer catalyst for the asymmetric Michael and Mannich reactions of 3-aryloxindoles.



Tech. Note (1)  
Ref. (1)

Tech. Note (1)  
Ref. (1)

References:

- Angew. Chem. Int. Ed.*, **2009**, *48*, 4559.

**15-1458 (11bS)-(-)-4,4-Dibutyl-2,6-bis[3,5-bis(trifluoromethyl)phenyl]-4,5-dihydro-3H-dinaphtho[2,1-c:1',2'-e]phosphepinium bromide, 99%** 50mg  
S-Maruoka CAT P-NB (1110711-01-7) 250mg

[C<sub>46</sub>H<sub>30</sub>F<sub>12</sub>P]<sup>+</sup>Br<sup>-</sup>; FW: 929.65; white xt.; m.p. 262-263°

Technical Note:

- See 15-1457

**15-1464 (11bR)-(+)-4,4-Di-*t*-butyl-2,6-bis[3,5-bis(trifluoromethyl)phenyl]-4,5-dihydro-3H-dinaphtho[2,1-c:1',2'-e]phosphepinium bromide, 99%** R-MARUOKA CAT P-TB 50mg  
250mg

[C<sub>46</sub>H<sub>38</sub>F<sub>12</sub>P]<sup>+</sup>Br<sup>-</sup>; FW: 929.65; white xtl.; m.p. 202-204°

Technical Note:

- See 15-1457

**15-1465 (11bS)-(-)-4,4-Di-*t*-butyl-2,6-bis[3,5-bis(trifluoromethyl)phenyl]-4,5-dihydro-3H-dinaphtho[2,1-c:1',2'-e]phosphepinium bromide, 99%** S-MARUOKA CAT P-TB 50mg  
250mg

[C<sub>46</sub>H<sub>38</sub>F<sub>12</sub>P]<sup>+</sup>Br<sup>-</sup>; FW: 929.65; white xtl.; m.p. 202-203°

Technical Note:

- See 15-1457

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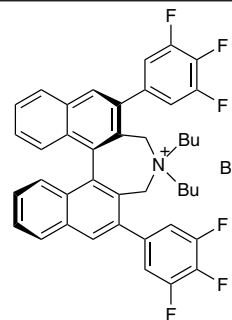
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Email: [enquiries@strem.co.uk](mailto:enquiries@strem.co.uk)

Also available...

**07-0380 (11bR)-4,4-Dibutyl-2,6-bis(3,4,5-trifluorophenyl)-4,5-dihydro-3H-dinaphtho[2,1-c:1',2'-e]azepinium bromide (887938-70-7)**  
 [C<sub>42</sub>H<sub>36</sub>F<sub>6</sub>N]<sup>+</sup>Br<sup>-</sup>; FW: 748.64; brown pwdr.

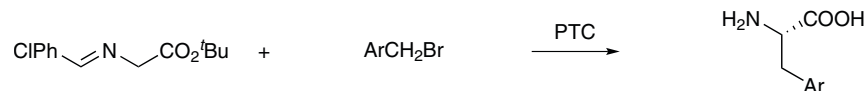
Note: Sold in collaboration with Nagase for research purposes only. US Patent 6,340,753.

50mg  
250mg



Technical Notes:

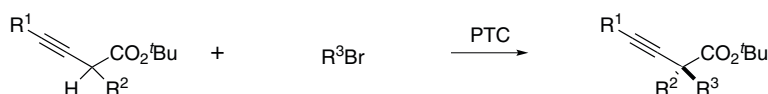
1. 2nd Generation Maruoka chiral phase transfer catalyst, for enantioselective alkylation of α-amino acid derivatives, that is easily recovered for recycle by extraction with fluorous solvent.
2. Catalyst for asymmetric conjugate addition of α-substituted-α-cyanoacetates to α,β-unsaturated acetylenic esters.
3. Phase transfer catalyzed enantioselective α-alkylation.
4. Asymmetric amination of β-keto esters.
5. Diastereo- and enantioselective conjugate addition of α-substituted nitroacetates to maleimides.
6. Cyclization of β-alkynyl hydrazines.



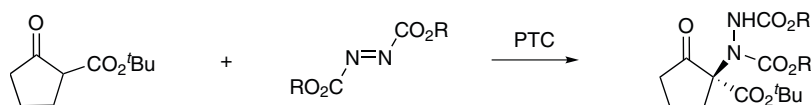
Tech. Note (1)  
Ref. (1)



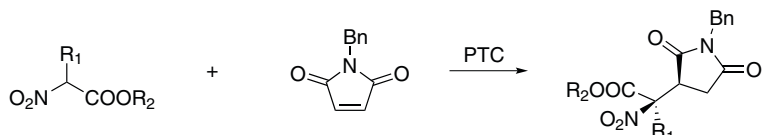
Tech. Note (2)  
Ref. (2)



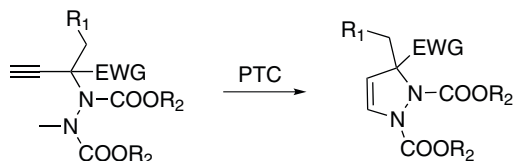
Tech. Note (3)  
Ref. (3)



Tech. Note (4)  
Ref. (4)



Tech. Note (5)  
Ref. (5)



Tech. Note (6)  
Ref. (6)

References:

1. *Tetrahedron Asymm.*, **2006**, 17, 603
2. *J. Am. Chem. Soc.*, **2007**, 129, 1038
3. *Angew. Chem. Int. Ed.*, **2009**, 48, 5014
4. *Tetrahedron Lett.*, **2009**, 50, 3280
5. *Chem. Commun.*, **2011**, 47, 10557
6. *Angew. Chem. Int. Ed.*, **2011**, 50, 8338

**07-0381 (11bS)-4,4-Dibutyl-2,6-bis(3,4,5-trifluorophenyl)-4,5-dihydro-3H-dinaphtho[2,1-c:1',2'-e]azepinium bromide (851942-89-7)**

[C<sub>42</sub>H<sub>36</sub>F<sub>6</sub>N]<sup>+</sup>Br<sup>-</sup>; FW: 748.64; brown pwdr.

Note: Sold in collaboration with Nagase for research purposes only. US Patent 6,340,753.

50mg  
250mg

Technical Note:

1. See 07-0380

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