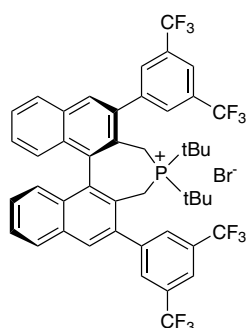
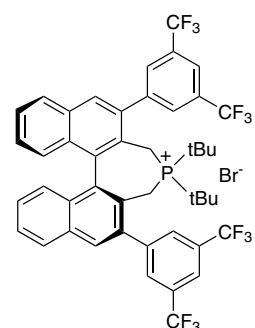


**15-1458**  
**S-Marukoa CAT P-NB**



**15-1464**  
**R-MARUOKA CAT P-TB**



**15-1465**  
**S-MARUOKA CAT P-TB**

## 96-3750 Maruoka Chiral Phase-Transfer Phosphonium Organocatalyst Kit

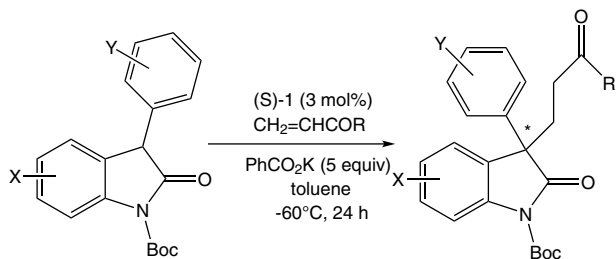
Components also available for individual sale.

Contains the following:

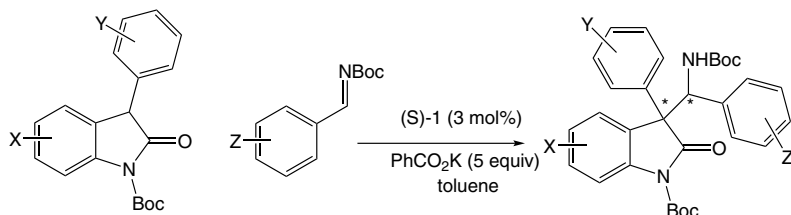
<b>15-1458</b>	<b>(11bS)-(-)-4,4-Dibutyl-2,6-bis[3,5-bis(trifluoromethyl)phenyl]-4,5-dihydro-3H-dinaphtho[2,1-c:1',2'-e]phosphepinium bromide, 99% S-Marukoa CAT P-NB (1110711-01-7)</b> [C <sub>46</sub> H <sub>30</sub> F <sub>12</sub> P] <sup>+</sup> Br <sup>-</sup> ; FW: 929.65; white xt.; m.p. 262-263° Note: Maruoka Chiral Phase-Transfer Phosphonium Organocatalyst Kit component.	50mg 250mg
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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.

<b>15-1464</b>	<b>(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</b> [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°	50mg 250mg
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Technical Note:

- See 15-1458

<b>15-1465</b>	<b>(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</b> [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°	50mg 250mg
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Technical Note:

- See 15-1458

### Also Available

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)  
 $[C_{42}H_{36}F_6N]^+Br^-$ ; FW: 748.64; brown pwdr.

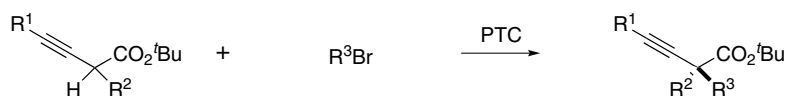
50mg  
250mg

Technical Notes:

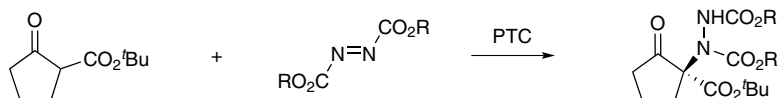
1. 2nd Generation Maruoka chiral phase transfer catalyst, for enantioselective alkylation of  $\alpha$ -amino acid derivatives, that is easily recovered for recycle by extraction with fluoruous solvent.
2. Catalyst for asymmetric conjugate addition of  $\alpha$ -substituted- $\alpha$ -cyanoacetates to  $\alpha,\beta$ -unsaturated acetylenic esters.
3. Phase transfer catalyzed enantioselective  $\alpha$ -alkylation.
4. Asymmetric amination of  $\beta$ -keto esters.
5. Diastereo- and enantioselective conjugate addition of  $\alpha$ -substituted nitroacetates to maleimides.
6. Efficient asymmetric synthesis of spiro-2(3H)-furanones via phase-transfer-catalyzed alkynylation.
7. Phase-transfer catalyzed asymmetric synthesis of  $\alpha,\beta$ -unsaturated  $\gamma,\gamma$ -disubstituted  $\gamma$ -lactams.

Tech. Note (1)  
Ref. (1)

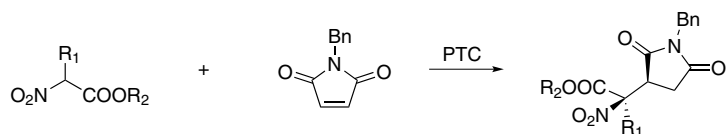
Tech. Note (2)  
Ref. (2)



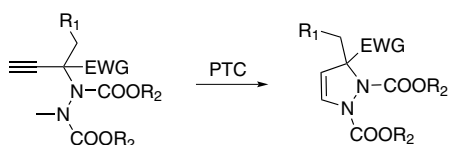
Tech. Note (3)  
Ref. (3)



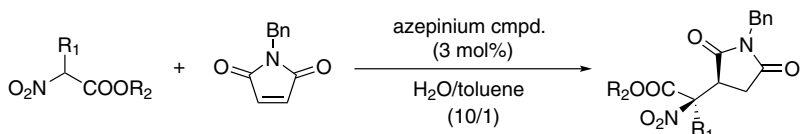
Tech. Note (4)  
Ref. (4)



Tech. Note (5)  
Ref. (5)



Tech. Note (6)  
Ref. (6)



Tech. Note (7)  
Ref. (7)

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. *Org. Biomol. Chem.* **2014**, 12, 5388.
7. *Chem. Commun.*, **2017**, 53, 4779.