Synthesis Alerts is a monthly feature to help readers of Synthesis keep abreast of new reagents, catalysts, ligands, chiral auxiliaries, and protecting groups which have appeared in the recent literature. Emphasis is placed on new developments but established reagents, catalysts etc are also covered if they are used in novel and useful reactions. In each abstract, a specific example of a transformation is given in a concise format designed to aid visual retrieval of information.

Synthesis Alerts is a personal selection by:

Fabrize Anizon, Robert Chow, Jennifer Delaney, Hassan Mamdani, Marcel de Puit and Sukhjinder Uppal, Department of Chemistry, Leeds University, Leeds, LS2 9JT, UK.

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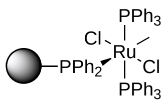
The journals regularly covered by the abstractors are:

Angewandte Chemie International Edition
Bulletin of the Chemical Society of Japan
Chemical Communications
Chemistry A European Journal
Chemistry Letters
Collection Czechoslovak Chemical Communications
European Journal of Organic Chemistry
Helvetica Chimica Acta
Heterocycles
Journal of the American Chemical Society
Journal of Organic Chemistry
Organic Letters
Organometallics
Perkin Transactions I
Synlett
Synthesis
Tetrahedron
Tetrahedron Asymmetry and Tetrahedron Letters

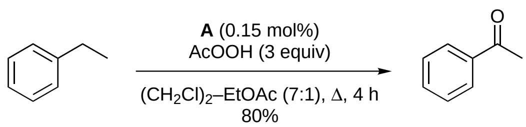
Resin-bound Ruthenium Phosphine Complex — ***Catalyst***

The title reagent catalyses transfer hydrogenation and hydrocarbon oxidation reactions.

Leadbeater, N. E. *J. Org. Chem.* **2001**, *66*, 2168.



A



10 examples (yields 40–89%).

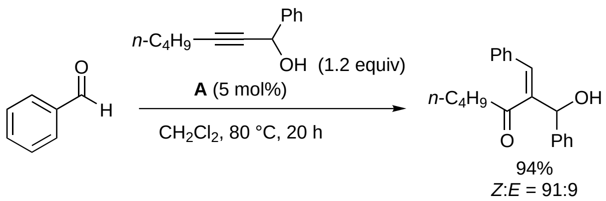
Tris(triphenylsilyl)vanadate — ***Catalyst***

The title reagent catalyses the aldol-type addition of propargyl alcohols to aldehydes.

Trost, B. M.; Oi, S. *J. Am. Chem. Soc.* **2001**, *123*, 1230.

$O{=}V(OSiPh_3)_3$

A

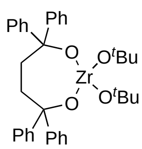


10 examples (yields 42–95%).

Zirconium Catalyst — ***Catalyst***

Reagent A catalyses the one-pot synthesis of β-cyanohydrins from olefins.

Yamasaki, S.; Kanai, M.; Shibasaki, M. *J. Am. Chem. Soc.* **2001**, *123*, 1256.



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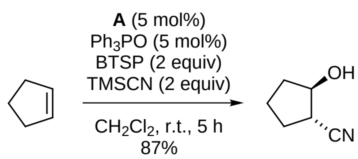
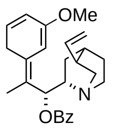
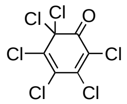
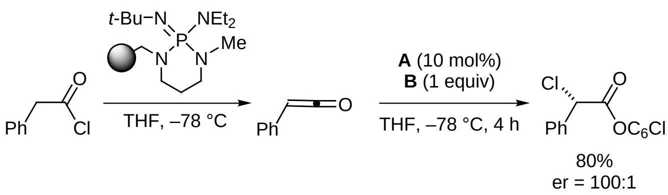
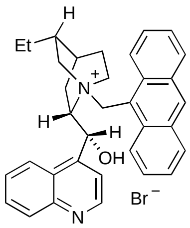
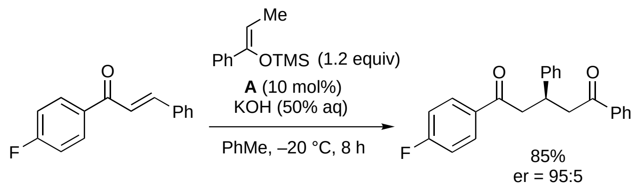
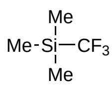
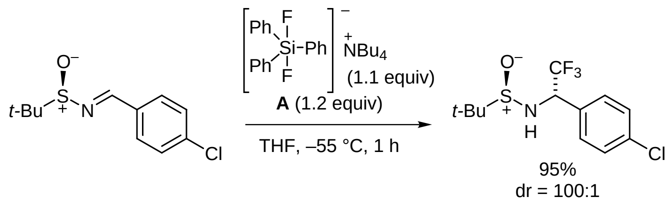
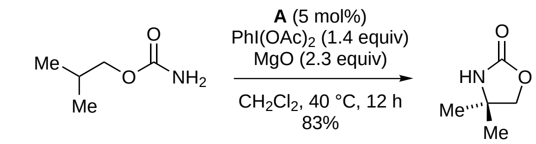


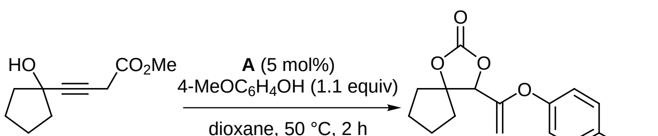
15 examples (yields 53–96%).

Benzoylquinine (BQ)/Perhaloquinone Derived Reagent		*Catalyst*
Reagent A catalyses the reactions of acyl halides with halogenating agent B to form α-haloesters. Wack, H.; Taggi, A. E.; Hafez, A. M.; Drury III, W. J.; Lectka, T. *J. Am. Chem. Soc.* **2001**, *123*, 1531.	 **A**  **B**	

***N*-(9-Anthracenylmethyl)dihydrocinchonidinium Bromide**		*Catalyst*
The title reagent catalyses the enantio- and diastereoselective Michael reaction of silyl enol ethers and chalcones. Zhang, F.-Y.; Corey, E. J. *Org. Lett.* **2001**, *3*, 639.	 **A**	 11 examples (yields 79–92%, %ee 91–95%).

Trimethyl(trifluoromethyl)silane		*Catalyst*
The title reagent is used for the stereoselective nucleophilic trifluoromethylation of *N*-(*tert*-butylsulfinyl)imines. Prakash, G. K. S.; Mandal, M.; Olah, G. A. *Angew. Chem. Int. Ed.* **2001**, *40*, 589.	 **A**	 12 examples (yields 75–95%, %de 80–99%).

Rhodium(II) Acetate Dimer		*Catalyst*
The title reagent catalyses the C-H insertion reaction for the oxidative conversion of carbamates to oxazolidinones. Espino, C. G.; Du Bois, J. *Angew. Chem. Int. Ed.* **2001**, *40*, 598.	$Rh_2(OAc)_4$ **A**	 5 examples (yields 77–83%).

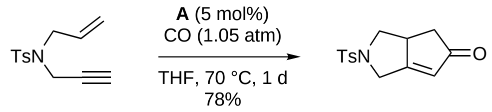
Tris(dibenzylideneacetone)dipalladium(0) Chloroform Adduct		*Catalyst*
The title reagent catalyses the domino reaction of 4-methoxycarbonyloxy-2-butyn-1-ols with phenols to form cyclic carbonates, with the recycling of carbon dioxide. Yoshida, M.; Ihara, M. *Angew. Chem. Int. Ed.* **2001**, *40*, 616.	$Pd_2(dba)_3 \cdot CHCl_3$ **A**	 14 examples (yields 36–91%).

Heptacarbonyl(triphenylphosphine)dicobalt(0) — *Catalyst*

The title reagent is a readily-prepared catalyst for the Pauson–Khand annulation.

$Ph_3PCo_2(CO)_7$

A

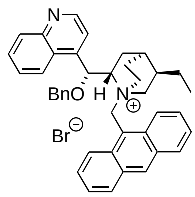


1 example (yield 78%).

Comely, A. C.; Gibson, S. E.; Stevenazzi, A.; Hales, N. J. *Tetrahedron Lett.* **2001**, *42*, 1183.

N-Anthracenylmethyl Derivative of Cinchona Alkaloid — *Catalyst*

The title reagent is used for the asymmetric phase-transfer mediated epoxidation of α,β-unsaturated ketones.



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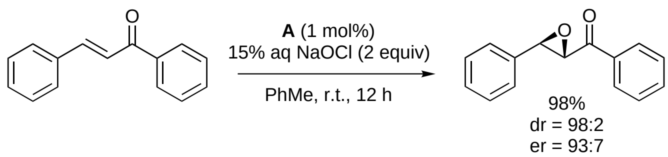
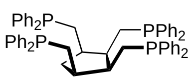


5 examples (yields 75–98%, %de ≥95%, %ee 84–98%).

Lygo, B.; To, D. C. M. *Tetrahedron Lett.* **2001**, *42*, 1343.

cis-cis-cis-1,2,3,4-Tetrakis(diphenylphosphinomethyl)cyclopentane (Tedicyp) — *Ligand*

The title tetraphosphine ligand is used in Pd-catalysed allylic substitutions.



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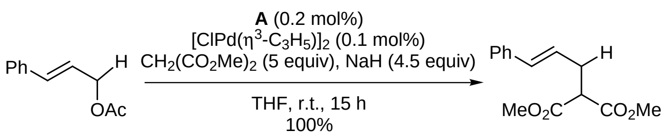
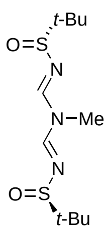


8 examples (yields 58–100%).

Laurenti, D.; Feuerstein, M.; Pèpe, G.; Doucet, H.; Santelli, M. *J. Org. Chem.* **2001**, *66*, 1633.

Bis(sulfinyl)imidoamidine Ligand — *Ligand*

The title ligand is used for the asymmetric catalytic Diels–Alder reaction.



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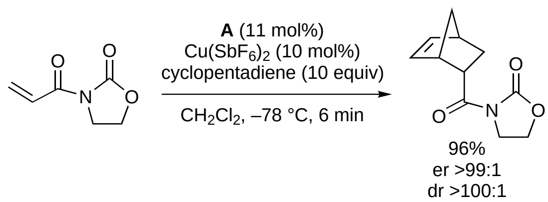
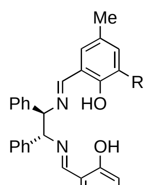


6 examples (yields 50–96%, %ee 32–>98%, %de 90–>98%).

Owens, T. D.; Hollander, F. J.; Oliver, A. G.; Ellman, J. A. *J. Am. Chem. Soc* **2001**, *123*, 1539.

Salen Ligand — *Ligand*

The title ligand is used in the yttrium-catalysed aldol-Tischenko reaction.



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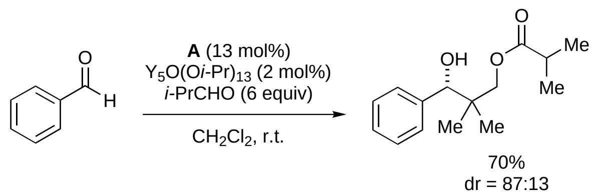
R = adamantyl



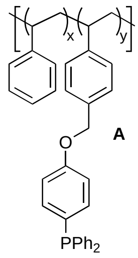
5 examples (yields 21–70%, %ee 10, 64–74%).

Mascarenhas, C. M.; Miller, S. P.; White, P. S.; Morken, J. P. *Angew. Chem. Int. Ed.* **2001**, *40*, 601.

Solid-Supported Triphenylphosphine ***Reagent***

The title reagent is used in the Mitsunobu reaction of alcohols.

Charette, A. B.; Janes, M. K.; Boezio, A. A. *J. Org. Chem.* **2001**, *66*, 2178.



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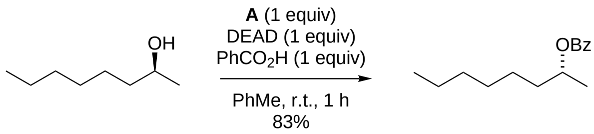
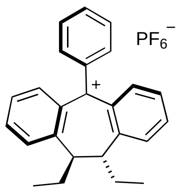


5 examples (yields 71–88%).

Chiral Carbenium Ion ***Reagent***

The title reagent is employed for enantioselective hydride abstraction.

Magdziak, D.; Pettus, L. H.; Pettus, T. R. R. *Org. Lett.* **2001**, *3*, 557.



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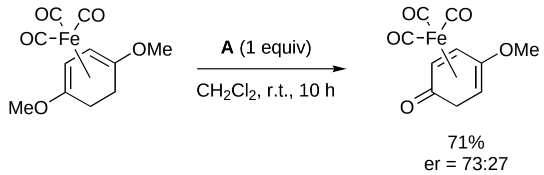


2 examples (yields 65–71%, %ee 43–53%).

Potassium Fluoride/Aluminium Oxide ***Reagent***

The title reagent pair mediates the deprotection of aryl silyl ethers and the preparation of SEM ethers.

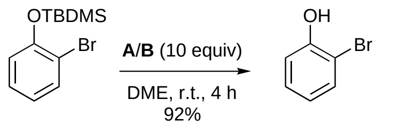
Blass, B. E.; Harris, C. L.; Portlock, D. E. *Tetrahedron Lett.* **2001**, *42*, 1611.

KF

A

Al_2O_3

B



6 examples of deprotection of silyl ethers (yields 87–95%) and 7 examples of SEM ether preparation (yields 0, 88–96%).

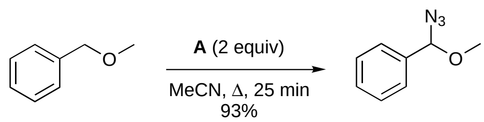
Iodonium Azide ***Reagent***

The title reagent is used for the azidonation of benzyl ethers.

Viuf, C.; Bols, M. *Angew. Chem. Int. Ed.* **2001**, *40*, 623.

IN_3

A

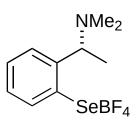


5 examples (yields 74–98%).

(*R*)-(+)-*N*,*N*-Dimethyl-1-phenethylamine Derived Diselenide ***Reagent***

The title reagent is used for the asymmetric methoxyselenenylation of alkyl vinyl ethers.

Uchiyama, M.; Satoh, S.; Ohta, A. *Tetrahedron Lett.* **2001**, *42*, 1559.



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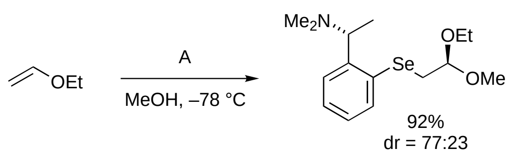

11 examples (yields 53–92%, %de 16–80%).