**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:

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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**

<table>
<thead>
<tr>
<th><strong>The title reagent catalyses transfer hydrogenation and hydrocarbon oxidation reactions.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Catalyst" /></td>
</tr>
<tr>
<td><strong>A</strong> (0.15 mol%), AcOOH (3 equiv)</td>
</tr>
<tr>
<td>(CH$_2$Cl)$_2$–EtOAc (7:1), ∆, 4 h</td>
</tr>
<tr>
<td>80%</td>
</tr>
<tr>
<td><strong>10 examples (yields 40–89%).</strong></td>
</tr>
</tbody>
</table>


### Tris(triphenylsilyl)vanadate

**Catalyst**

<table>
<thead>
<tr>
<th><strong>The title reagent catalyses the aldol-type addition of propargyl alcohols to aldehydes.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image2" alt="Catalyst" /></td>
</tr>
<tr>
<td><strong>A</strong> (5 mol%), CH$_2$Cl$_2$, 80 °C, 20 h</td>
</tr>
<tr>
<td>94%</td>
</tr>
<tr>
<td><strong>10 examples (yields 42–95%).</strong></td>
</tr>
</tbody>
</table>


### Zirconium Catalyst

**Catalyst**

<table>
<thead>
<tr>
<th><strong>Reagent A catalyses the one-pot synthesis of β-cyanohydrins from olefins.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Catalyst" /></td>
</tr>
<tr>
<td><strong>A</strong> (5 mol%), Ph$_3$PO (5 mol%), BTSP (2 equiv)</td>
</tr>
<tr>
<td>CH$_2$Cl$_2$, t.l., 5 h</td>
</tr>
<tr>
<td>87%</td>
</tr>
<tr>
<td><strong>15 examples (yields 53–96%).</strong></td>
</tr>
</tbody>
</table>


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### Benzoylquinine (BQ)/Perhaloquinone Derived Reagent

Reagent A catalyses the reactions of acyl halides with halogenating agent B to form α-haloesters.


![Diagram of A and B](image)

### N-(9-Anthracenylmethyl)dihydrocinchonidinium Bromide

The title reagent catalyses the enantio- and diastereoselective Michael reaction of silyl enol ethers and chalcones.


![Diagram of A](image)

### Trimethyl(trifluoromethyl)silane

The title reagent is used for the stereoselective nucleophilic trifluoromethylation of N-(tert-butylsulfinyl)imines.


![Diagram of A](image)

### Rhodium(II) Acetate Dimer

The title reagent catalyses the C-H insertion reaction for the oxidative conversion of carbamates to oxazolidinones.


![Diagram of A](image)

### Tris(dibenzylideneacetone)dipalladium(0) Chloroform Adduct

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.


![Diagram of A](image)
### Heptacarbonyl(triphenylphosphine)dicobalt(0) Catalyst

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


![Diagram A](image1.png)

1 example (yield 78%).

### N-Anthracenylmethyl Derivative of Cinchona Alkaloid Catalyst

The title reagent is used for the asymmetric phase-transfer mediated epoxidation of \(\alpha,\beta\)-unsaturated ketones.


![Diagram A](image2.png)

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

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

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


![Diagram A](image3.png)

8 examples (yields 58–100%).

### Bis(sulfinyl)imidodiamine Ligand Ligand

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


![Diagram A](image4.png)

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

### Salen Ligand Ligand

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


![Diagram A](image5.png)

5 examples (yields 21–70%, %ee 10, 64–74%).
### Solid-Supported Triphenylphosphine Reagent

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


<table>
<thead>
<tr>
<th>A</th>
<th>(1 equiv)</th>
<th>DEAD (1 equiv)</th>
<th>PhCO₂H (1 equiv)</th>
<th>PhMe, r.t., 1 h</th>
<th>83%</th>
</tr>
</thead>
</table>

5 examples (yields 71–88%).

### Chiral Carbenium Ion Reagent

The title reagent is employed for enantioselective hydride abstraction.


<table>
<thead>
<tr>
<th>A</th>
<th>(1 equiv)</th>
<th>CH₂Cl₂, r.t., 10 h</th>
<th>71%</th>
</tr>
</thead>
</table>

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.


<table>
<thead>
<tr>
<th>KF</th>
<th>OTBDMS</th>
<th>OH</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>(10 equiv)</td>
</tr>
</tbody>
</table>

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.


<table>
<thead>
<tr>
<th>IN₃</th>
<th>A (2 equiv)</th>
<th>MeCN, Δ, 25 min</th>
<th>93%</th>
</tr>
</thead>
</table>

5 examples (yields 74–96%).

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

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


<table>
<thead>
<tr>
<th>A</th>
<th>MeOH, −78 °C</th>
<th>Me₂N⁺, MeO⁻</th>
<th>92%</th>
</tr>
</thead>
</table>

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