



# SiliaBond<sup>®</sup>

## Oxidants



Distributed by

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## SiliaBond Pyridinium Chlorochromate (R24030B) and SiliaBond Pyridinium Dichromate (R24530B)

Loading 20.0% w/w	Endcapping: No	Category: Oxidant	Format: 5g, 10g, 25g, 50g, 100g, 250g, 500g, 1kg, 10kg, 25kg, ..., Multi-Ton
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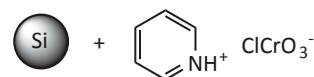
### Description

#### SiliaBond Pyridinium Chlorochromate (Si-PCC)

is commonly used for the oxidation of alcohols to carbonyl compounds, selective oxidation of allylic and benzylic alcohols, organometallic oxidation, oxidative transpositions, oxidative cleavages, allylic and benzylic oxidation and oxidative cyclizations.<sup>1-4</sup> Using PCC immobilized onto silica gel provides anhydrous conditions that may otherwise promote side reactions and reduce yields. It greatly facilitates removal of polymeric reduced chromium by-products and is

compatible with acid-sensitive protecting groups.<sup>5,6</sup> When used in conjunction with ultrasounds, kinetics are increased and the amount of oxidant required to complete the reaction is decreased.<sup>7-9</sup>

Pyridinium Chlorochromate (Si-PCC)



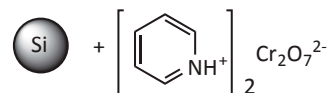
#### SiliaBond Pyridinium Dichromate (Si-PDC)

may be used as an alternative to Si-PCC in nucleoside and carbohydrate oxidation, particularly for fragile molecules.<sup>10</sup> SiliaBond PDC can also be used in conjunction with tertbutylhydroperoxide for a variety of oxidative transformations.<sup>11</sup>

Si-PDC is a very convenient and effective reagent for oxidizing allylic and benzylic alcohols, saturated

with acid-sensitive groups, such as cyclopropane rings or ketal functions.<sup>12</sup>

Pyridinium Dichromate (Si-PDC)



### Solvent compatibility

- Anhydrous CH<sub>2</sub>Cl<sub>2</sub>

### Prolonged storage

- Keep cool (< 8°C) and dry

<sup>1</sup> *J. Org. Chem.*, 54, **1989**, 5387

<sup>2</sup> *Tetrahedron Lett.*, 42, **2001**, 2141

<sup>3</sup> *Synlett*, 10, **1999**, 1630

<sup>4</sup> *Synth. Commun.*, 26, **1996**, 225

<sup>5</sup> *J. Org. Chem.*, 58, **1993**, 2509

<sup>6</sup> *J. Chem. Educ.*, 76, **1999**, 974

<sup>7</sup> *J. Org. Chem.*, 48, **1983**, 666

<sup>8</sup> *Liebigs Ann. Chem.*, **1993**, 173

<sup>9</sup> *J. Org. Chem.*, 57, **1992**, 3867

<sup>10</sup> *J. Chem. Soc. Perkin Trans. I*, **1982**, 1967

<sup>11</sup> *J. Chem. Soc. Chem. Commun.*, 7, **1993** 651

<sup>12</sup> *Tetrahedron*, 35, **1979**, 1789



## SiliaBond Potassium Permanganate (R23030B)

Loading 20.0% w/w | Endcapping: No | Category: Oxidant | Format: 5g, 10g, 25g, 50g, 100g, 250g, 500g, 1kg, 10kg, 25kg, ..., Multi-Ton

### Description

#### Potassium permanganate

is a strong oxidant that will oxidize methyl groups and alcohols to carboxylic acids. SiliaBond Potassium Permanganate increases recoveries, facilitates work-up, and expands the scope of the chemistry because it can be used in all organic solvents eliminating solubility issues.<sup>1</sup> With SiliaBond Potassium Permanganate, the manganese salt by-products stay adsorbed onto the silica.

<sup>1</sup> *Synlett*, 10, 2001, 1555

#### Solvent compatibility

- Anhydrous CH<sub>2</sub>Cl<sub>2</sub>

#### Prolonged storage

- Keep dry

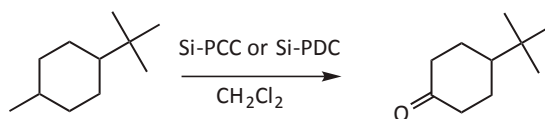
Potassium permanganate



## Oxidation of Alcohols to Aldehydes and Ketones

### General procedure

SiliaBond PDC or SiliaBond PCC (2 eq.) and acetic acid (4 mmol) were added to a solution of the alcohol (1 mmol) in CH<sub>2</sub>Cl<sub>2</sub> (7.5 mL). The resulting mixture was stirred for 6 h at room temperature. Ether (15 mL) was added, and after stirring for another 2 min, the solution was filtered and the solids were washed with ether (4 x 9 mL). Concentration under vacuum afforded the required product.



### Oxidation of Alcohols Results

SiliaBond Oxidant	Conditions	Conversion <sup>a</sup>
SiliaBond PCC	6 h, room temperature	100%
SiliaBond PDC	6 h, room temperature	100%

<sup>a</sup> Determined from the isolated product