Mild Methylenation Reagent of Carbonyl Compounds (Petasis Reagent)

Advantages

- Applicable to Various Carbonyl Compounds
- More Air-Stable and Milder Reagent than Tebbe Reagent

Dimethyltitanocene (D4100) is a useful methylenation reagent named the Petasis reagent. Mild thermolysis of D4100 (>60 °C) can generate a reactive titanocene methylidene species, which in situ converts a variety of carbonyl compounds, such as aldehydes, ketones, esters, and lactones, to the corresponding olefins. D4100 is more air-stable than the Tebbe reagent, and the reaction proceeds under mild conditions because it does not have the highly acidic aluminum moiety.

<table>
<thead>
<tr>
<th>CH₃TiCH₃</th>
<th>D4100</th>
<th>CH₂R</th>
</tr>
</thead>
<tbody>
<tr>
<td>[D4100]</td>
<td>toluene or THF, 60-80 °C</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R</th>
<th>X=H, alkyl, aryl, vinyl, OR, etc.</th>
<th>Y. (%)</th>
<th>product</th>
<th>product</th>
<th>Y. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH₃(CH₂)₃</td>
<td></td>
<td>62</td>
<td></td>
<td></td>
<td>80</td>
</tr>
<tr>
<td>CH₂Ph</td>
<td></td>
<td>90</td>
<td></td>
<td></td>
<td>68</td>
</tr>
<tr>
<td>CH₃</td>
<td></td>
<td>87</td>
<td></td>
<td></td>
<td>65</td>
</tr>
<tr>
<td>O(CH₂)₁₁CH₃</td>
<td></td>
<td>62</td>
<td></td>
<td></td>
<td>80</td>
</tr>
</tbody>
</table>


D4100 Petasis Reagent (5% in Tetrahydrofuran/Toluene) 100g

C1411 Tebbe Reagent (ca. 0.5mol/L in Toluene) 25mL

**Ordering and Customer Service**

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