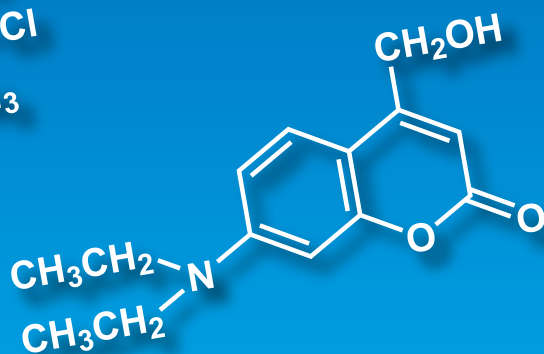
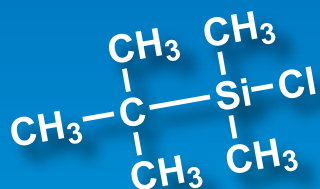
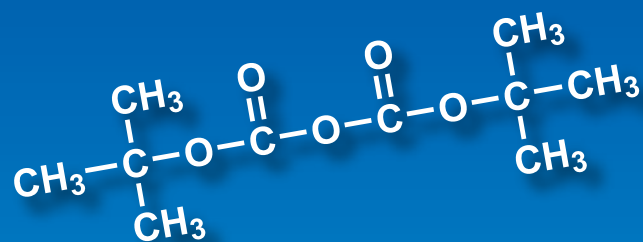


Protecting Agents



Protecting Agents

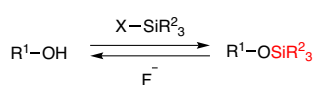
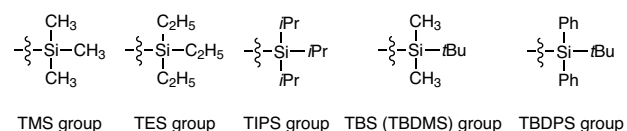
Protecting groups are of vital importance in organic synthesis. In many cases, reaction conditions will effect multiple functionalities, which necessitate the blocking of several functional groups to afford the correct synthetic transformation. However, protecting group attachment and removal requires their own conditions as well as individual chemical properties, and appropriate selection of the correct protecting agents is vitally important for synthetic strategy. The most useful protecting agents generally need several key properties:

- The protecting agents must selectively react with the desired functional group requiring protection.
- The protecting groups must be introduced in high yields without any side reactions.
- The protected functional groups should be stable under various reaction conditions.
- The protecting groups must be chemoselectively deprotected under specific conditions without deprotection of other types of protecting groups.

Particularly in total synthesis and for structurally complicated compounds, designing the synthetic strategies frequently requires careful selection of protecting groups. Over time, a large array of protection groups have become available due in part to the highly specialized requirements needed in complex synthesis. Many of these reagents and protection groups include specialized conditions for attachment and removal that have high specificity for a given functional and protection group. This brochure introduces a variety of protecting agents, which are sorted based on the methods used for their deprotection.

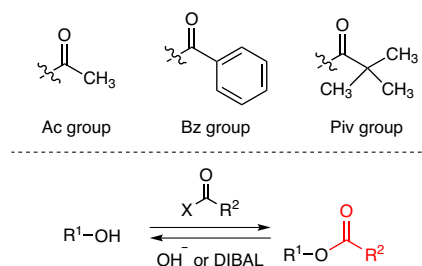
● Silylation Reagents

Silyl groups are one of the most commonly used protecting groups to block hydroxy functionalities, as well as for the protection of carboxyl groups and amino groups. Trimethylsilyl (TMS) and triethylsilyl (TES) are commonly used as general or short-term protecting groups, while triisopropylsilyl (TIPS), *tert*-butyldimethylsilyl (TBS or TBDMS) and *tert*-butyldiphenylsilyl (TBDPS) groups are used for introducing bulky substituents that are more robust. Silyl protecting groups are often readily deprotected under acidic conditions, or by fluoride ions.



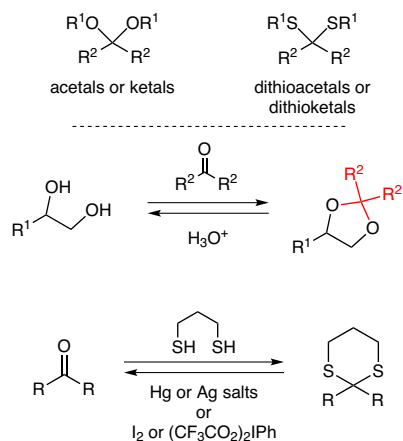
● Acylation Reagents

Acyl protecting groups are usually used for the protection of hydroxy groups and amino groups. Acetyl (Ac), benzoyl (Bz), and pivaloyl (Piv) groups are commonly chosen. Pivaloyl groups are often selected when non-sterically hindered hydroxyl groups need to be selectively protected due to the Piv groups large size. Generally, acyl protecting groups are stable under acidic and oxidative conditions. Acyl protecting groups are usually deprotected under basic or reductive conditions (DIBAL, LAH, etc.).



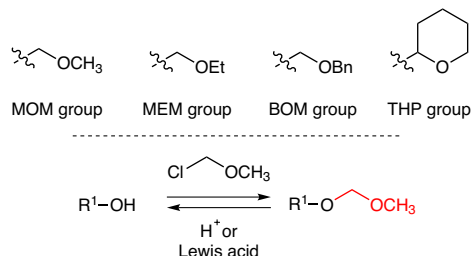
● Acetalization Reagents, Thioacetalization Reagents

Acetals and thioacetals are most often used in the protection of carbonyl groups, particularly that of aldehydes and ketones. The acetals and ketals are usually introduced under acidic conditions and take advantage of the equilibrium these exist under to install them. Acetals are stable under basic conditions and reductive conditions, and are additionally inert towards nucleophiles and organometallic reagents. Deprotection is usually carried out via hydrolysis under aqueous acidic conditions. Thioacetals have a wider synthetic resistance and are usually stable under both acidic and basic aqueous conditions. The deprotection of thioacetals usually requires the addition of mercury salts or hypervalent iodine compounds.



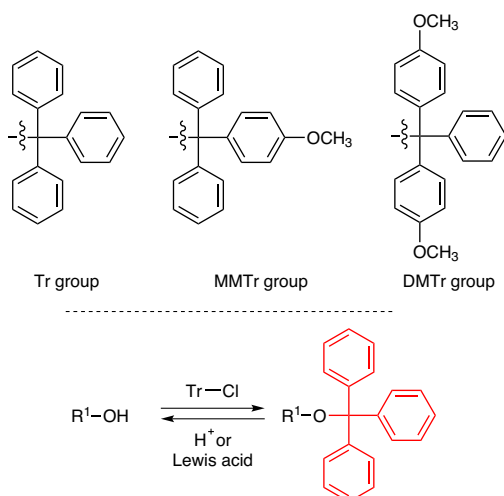
Alkoxymethylation Reagents

Alkoxymethyl groups such as methoxymethyl (MOM) group are generally used for the protection of hydroxy groups. They are stable under basic and reducing conditions due to formally being acetal functionality. Alkoxymethyl groups are usually deprotected by acid catalyzed hydrolysis.



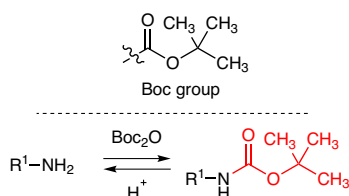
Tritylation (Tr) Reagents

Trityl (Tr) groups are mainly used for the protection of hydroxy groups. They can selectively protect less sterically-hindered substrates due to their large size. They are relatively stable against bases, oxidizing agents, reducing agents and nucleophiles, and the deprotection is carried out under acidic hydrolysis conditions.



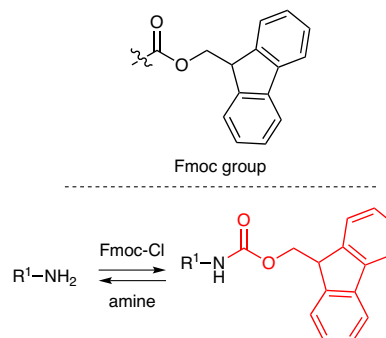
tert-Butoxycarbonylation (Boc) Reagents

tert-Butoxycarbonyl (Boc) group is one of the most commonly used protective groups for amino groups in peptide synthesis. It is also used for the protection of hydroxy groups. It is stable under basic hydrolysis conditions and catalytic reduction conditions, and is inert against various nucleophiles. It is commonly deprotected under acidic conditions with trifluoroacetic acid.



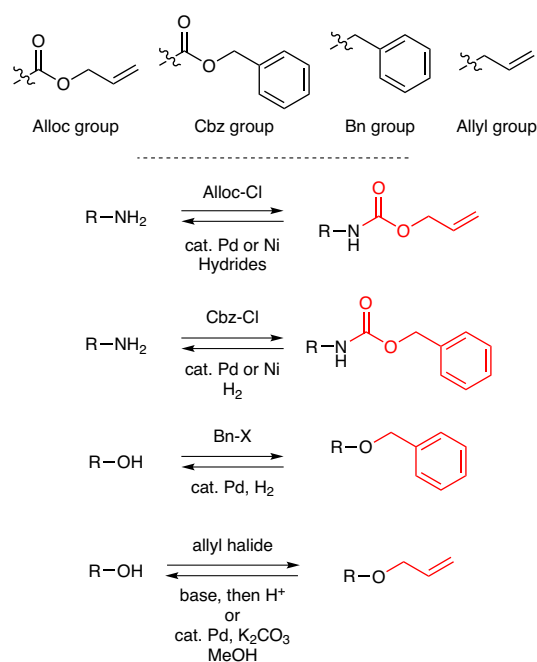
9-Fluorenylmethyloxycarbonylation (Fmoc) Reagents

9-Fluorenylmethyloxycarbonyl (Fmoc) group is one of the most commonly used protecting groups for amino groups in solid phase peptide synthesis. It is readily deprotected by secondary amines such as piperidine and is stable under acidic conditions. Of note, when a molecule contains both a Fmoc and Boc group, only the Boc group will be selectively removed under acidic conditions.



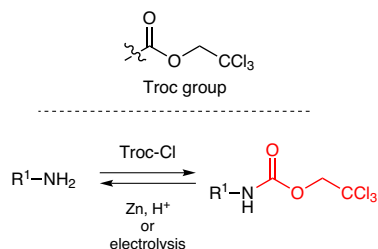
Allyloxycarbonylation (Alloc) Reagents, Benzyloxycarbonylation (Cbz) Reagents, Benzylation (Bn) Reagents, and Allylation (All) Reagents

Allyloxycarbonyl (Alloc), benzyloxycarbonyl (Cbz), benzyl (Bn) and allyl (All) groups are commonly used for the protection of amino groups. These protecting groups are generally deprotected by palladium catalysts.



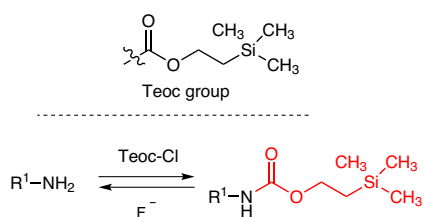
● 2,2,2-Trichloroethoxycarbonylation (Troc) Reagents

The 2,2,2-trichloroethoxycarbonyl (Troc) group is used as a protecting group for hydroxy and amino groups. The Troc group is generally deprotected by treatment with zinc powder or by electrolysis.



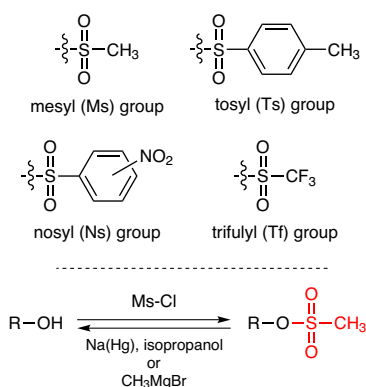
● 2-(Trimethylsilyl)ethoxycarbonylation (Teoc) Reagents

The 2-(trimethylsilyl)ethoxycarbonyl (Teoc) group is used as a protecting group for amines. Teoc groups can be deprotected with fluoride ion sources such as TBAF.



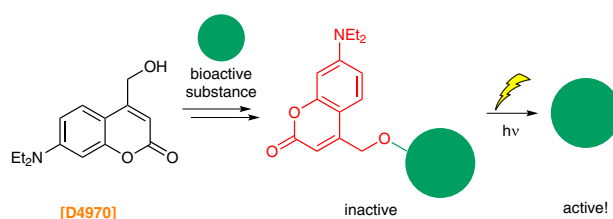
● Sulfonylation Reagents

Sulfonyl groups have application as both protecting groups for hydroxy and amino groups, and for the activation of hydroxy functionalities.



● Photolabile Protecting Reagents

Photolabile protecting groups like **D4970** can be introduced to afford "caged" compounds and is most often employed in protecting bioactive molecules. The "caging" of bioactive molecule with photolabile protecting groups in particular have proven to be a particularly useful tool in biochemical research. "Caged" compounds are inactivated with photolabile protecting groups and can be activated by UV or visible light irradiation. Research towards controlling the topical expression of biomolecule activity using caged compounds has been recently reported and continues to be heavily investigated. To date, several classes of caged biomolecule have been synthesized and reported, including: nucleotides, amino acids, biotin, and sugars.



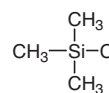
References

- Protective Groups in Organic Synthesis. 5th ed.*, ed. by T. W. Greene, P. G. M. Wuts, John Wiley & Sons, Inc., New York, **2014**.
- A. Isidro-Llobet, M. Alvarez, F. Albericio, *Chem. Rev.* **2009**, *109*, 2455.
- M. Schelhaas, H. Waldmann, *Angew. Chem. Int. Ed.* **1996**, *35*, 2056.
- K. Jarowicki, P. Kocienski, *Contemp. Org. Synth.* **1997**, *4*, 454.

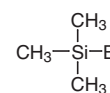
Silylation Reagents

Trimethylsilylation (TMS) Reagents

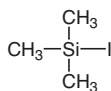
C0306 25mL 100mL 500mL

Chlorotrimethylsilane
CAS RN: 75-77-4

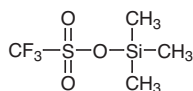
B1087 5mL 25mL 250mL

Bromotrimethylsilane
CAS RN: 2857-97-8

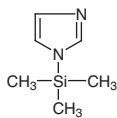
I0308 5g 25g

Trimethylsilyl Iodide
CAS RN: 16029-98-4

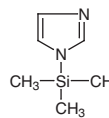
T0871 5g 25g 250g

TMSOTf
CAS RN: 27607-77-8

T0585 25g 100g

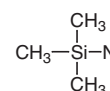
SIM
CAS RN: 18156-74-6

T0623 12mL

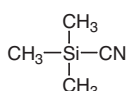


SIM (in Anhydrous Pyridine)

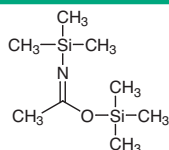
T0801 5g 25g 100g

Trimethylsilyl Azide
CAS RN: 4648-54-8

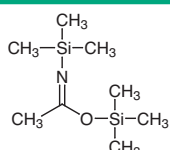
T0990 25mL 100mL 500mL

Trimethylsilyl Cyanide
CAS RN: 7677-24-9

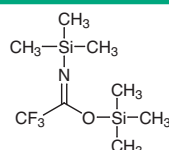
B0511 10mL 100mL

BSA
CAS RN: 10416-59-8

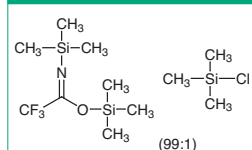
B0510 12mL

BSA (25% in Acetonitrile)
CAS RN: 10416-59-8

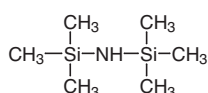
B0830 5mL 25mL 100mL

BSTFA
CAS RN: 25561-30-2

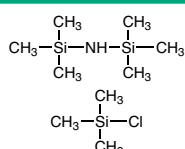
B3402 5mL 25mL 100mL

BSTFA-TMCS (99:1)
CAS RN: 25561-30-2

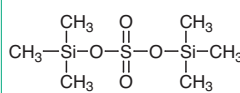
H0089 25mL 100mL 500mL

HMDS
CAS RN: 999-97-3

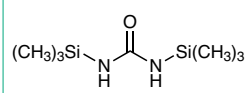
T0274 12mL

HMDS and TMCS
(in Anhydrous Pyridine)

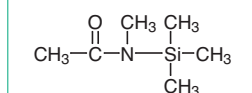
B1245 5g 25g

Bis(trimethylsilyl) Sulfate
CAS RN: 18306-29-1

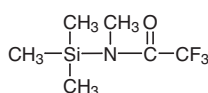
B1103 25g

BSU
CAS RN: 18297-63-7

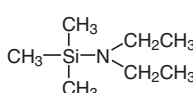
M0536 10g 25g

N-Methyl-N-TMS-acetamide
CAS RN: 7449-74-3

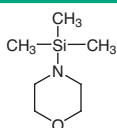
M0672 5mL 25mL

MSTFA
CAS RN: 24589-78-4

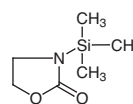
T0492 25mL

TMS-DEA
CAS RN: 996-50-9

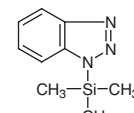
T1277 5mL 25mL

N-(Trimethylsilyl)morpholine
CAS RN: 13368-42-8

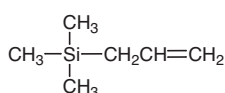
T1535 5g

3-Trimethylsilyl-2-oxazolidinone
CAS RN: 43112-38-5

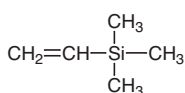
T1752 5g 25g

1-TMS-1H-benzotriazole
CAS RN: 43183-36-4

A0729 25mL 250mL

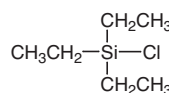
Allyltrimethylsilane
CAS RN: 762-72-1

V0067 25mL 100mL

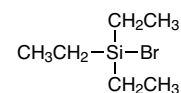
Vinyltrimethylsilane
CAS RN: 754-05-2

Triethylsilylation (TES) Reagents

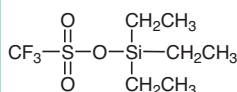
T0589 5g 25g 100g

Chlorotriethylsilane
CAS RN: 994-30-9

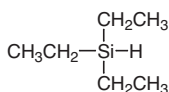
B5890 5g

Bromotriethylsilane
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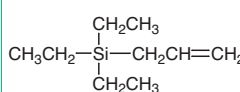
T1689 5g 25g

Triethylsilyl Triflate
CAS RN: 79271-56-0

T0662 25mL 250mL

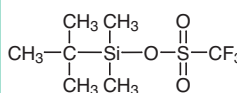
Triethylsilane
CAS RN: 617-86-7

A2299 5g

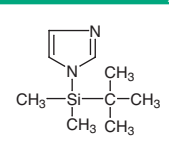
Allyltriethylsilane
CAS RN: 17898-21-4

tert-Butyldimethylsilylation (TBS) Reagents

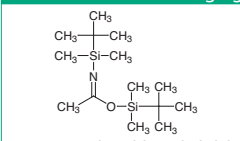
T1525 5g 25g

TBS Triflate
CAS RN: 69739-34-0

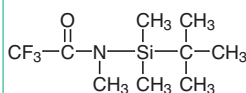
B1043 1g 5g

1-(tert-Butyldimethylsilyl)imidazole
CAS RN: 54925-64-3

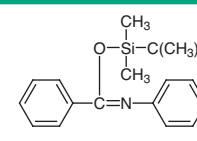
B1906 1g 5g

N,O-Bis(tert-butyldimethylsilyl)-acetamide
CAS RN: 82112-21-8

B1150 1g 10g

MTBSTFA
CAS RN: 77377-52-7

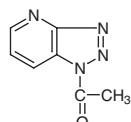
B2697 5g

TBS-BEZA
CAS RN: 404392-70-7

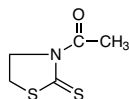
<p>Triisopropylsilylation (TIPS) Reagents</p>	<p>T1078 5mL 25mL 250mL</p> $\begin{array}{c} \text{CH}(\text{CH}_3)_2 \\ \\ (\text{CH}_3)_2\text{CH}-\text{Si}-\text{Cl} \\ \\ \text{CH}(\text{CH}_3)_2 \end{array}$ <p>TIPSCI CAS RN: 13154-24-0</p>	<p>T1588 5g 25g</p> $\begin{array}{c} \text{O} \quad \text{CH}(\text{CH}_3)_2 \\ \quad \\ \text{CF}_3-\text{S}-\text{O}-\text{Si}-\text{CH}(\text{CH}_3)_2 \\ \quad \\ \text{O} \quad \text{CH}(\text{CH}_3)_2 \end{array}$ <p>Triisopropylsilyl Triflate CAS RN: 80522-42-5</p>	<p>T1533 5mL 25mL 100mL</p> $\begin{array}{c} \text{CH}(\text{CH}_3)_2 \\ \\ (\text{CH}_3)_2\text{CH}-\text{Si}-\text{H} \\ \\ \text{CH}(\text{CH}_3)_2 \end{array}$ <p>Triisopropylsilane CAS RN: 6485-79-6</p>	<p>tert-Butyldiphenylsilylation (TBDPS) Reagents</p>
<p>B1223 5mL 25mL 100mL</p> $\begin{array}{c} \text{C}_6\text{H}_5 \\ \\ \text{H}_3\text{C}-\text{C}-\text{Si}-\text{Cl} \\ \quad \\ \text{H}_3\text{C} \quad \text{C}_6\text{H}_5 \end{array}$ <p>TBDPSCI CAS RN: 58479-61-1</p>	<p>B3566 5g</p> $\begin{array}{c} \text{C}_6\text{H}_5 \\ \\ \text{H}_3\text{C}-\text{C}-\text{Si}-\text{H} \\ \quad \\ \text{H}_3\text{C} \quad \text{C}_6\text{H}_5 \end{array}$ <p>tert-Butyldiphenylsilane CAS RN: 33729-92-9</p>	<p>B2898 1g 5g</p> $\begin{array}{c} \text{C}_6\text{H}_5 \\ \\ \text{H}_3\text{C}-\text{C}-\text{Si}-\text{O}-\text{S}(=\text{O})_2-\text{CF}_3 \\ \quad \\ \text{H}_3\text{C} \quad \text{C}_6\text{H}_5 \end{array}$ <p>tert-Butyldiphenylsilyl Triflate CAS RN: 92886-86-7</p>	<p>Other Silylation Reagents</p>	<p>D0135 5g 25g</p> $\begin{array}{c} \text{CH}_3 \\ \\ \text{Cl}-\text{Si}-\text{CH}_2\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$ <p>Dimethylethylchlorosilane CAS RN: 6917-76-6</p>
<p>D1590 5mL 25mL</p> $\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3\text{CH}_2\text{CH}_2-\text{Si}-\text{Cl} \\ \\ \text{CH}_3 \end{array}$ <p>Chlorodimethylpropylsilane CAS RN: 17477-29-1</p>	<p>D1594 5mL 25mL</p> $\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\ \quad \\ \text{C}-\text{Si}-\text{Cl} \\ \quad \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$ <p>Dimethylisopropylchlorosilane CAS RN: 3634-56-8</p>	<p>B2010 25mL</p> $\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3(\text{CH}_2)_3-\text{Si}-\text{Cl} \\ \\ \text{CH}_3 \end{array}$ <p>Butylchlorodimethylsilane CAS RN: 1000-50-6</p>	<p>D1827 25mL 100mL</p> $\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3(\text{CH}_2)_7-\text{Si}-\text{Cl} \\ \\ \text{CH}_3 \end{array}$ <p>Dimethyl-n-octylchlorosilane CAS RN: 18162-84-0</p>	<p>T2116 5g 25g</p> $\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \quad \text{CH}_3 \\ \quad \quad \\ \text{C}-\text{CH}-\text{C}-\text{Si}-\text{Cl} \\ \quad \quad \\ \text{CH}_3 \quad \text{CH}_3 \quad \text{CH}_3 \end{array}$ <p>Chloro(dimethyl)hexylsilane CAS RN: 67373-56-2</p>
<p>C1468 25mL</p> $\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3(\text{CH}_2)_9-\text{Si}-\text{Cl} \\ \\ \text{CH}_3 \end{array}$ <p>Chloro(decyl)dimethylsilane CAS RN: 38051-57-9</p>	<p>C1469 25mL</p> $\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3(\text{CH}_2)_{11}-\text{Si}-\text{Cl} \\ \\ \text{CH}_3 \end{array}$ <p>Chloro(dodecyl)dimethylsilane CAS RN: 66604-31-7</p>	<p>D1560 25mL</p> $\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3(\text{CH}_2)_{17}-\text{Si}-\text{Cl} \\ \\ \text{CH}_3 \end{array}$ <p>Dimethyloctadecylchlorosilane CAS RN: 18643-08-8</p>	<p>C1207 5mL 25mL</p> $\begin{array}{c} \text{CH}_3 \\ \\ \text{NC}-\text{CH}_2\text{CH}_2\text{CH}_2-\text{Si}-\text{Cl} \\ \\ \text{CH}_3 \end{array}$ <p>(3-Cyanopropyl)-dimethylchlorosilane CAS RN: 18156-15-5</p>	<p>B2334 5g</p> $\begin{array}{c} \text{C}_6\text{H}_5 \\ \\ \text{CH}_2-\text{Si}-\text{Cl} \\ \\ \text{CH}_3 \end{array}$ <p>Benzylchlorodimethylsilane CAS RN: 1833-31-4</p>
<p>D1147 5mL 25mL</p> $\begin{array}{c} \text{C}_6\text{H}_5 \\ \\ \text{Si}-\text{Cl} \\ \\ \text{CH}_3 \end{array}$ <p>Chlorodimethylphenylsilane CAS RN: 768-33-2</p>	<p>D2262 1g 5g</p> $\begin{array}{c} \text{CH}_2\text{CH}_3 \\ \\ \text{CH}_3-\text{CH}-\text{Si}-\text{Cl} \\ \quad \\ \text{CH}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$ <p>Chlorodiethylisopropylsilane CAS RN: 107149-56-4</p>	<p>T3524 5g 25g</p> $\begin{array}{c} (\text{CH}_2)_3\text{CH}_3 \\ \\ \text{CH}_3(\text{CH}_2)_3-\text{Si}-\text{Cl} \\ \\ (\text{CH}_2)_3\text{CH}_3 \end{array}$ <p>Tributylchlorosilane CAS RN: 995-45-9</p>	<p>D1390 25mL</p> $\begin{array}{c} \text{C}_6\text{H}_5 \\ \\ \text{C}_6\text{H}_5-\text{Si}-\text{Cl} \\ \\ \text{CH}_3 \end{array}$ <p>Diphenylmethylchlorosilane CAS RN: 144-79-6</p>	<p>T0939 5g 25g</p> $\begin{array}{c} \text{C}_6\text{H}_5 \\ \\ \text{C}_6\text{H}_5-\text{Si}-\text{Cl} \\ \\ \text{C}_6\text{H}_5 \end{array}$ <p>Triphenylchlorosilane CAS RN: 76-86-8</p>
<p>B1436 5mL 25mL</p> $\begin{array}{c} \text{C}_6\text{H}_5 \\ \\ \text{H}_3\text{C}-\text{C}-\text{O}-\text{Si}-\text{Cl} \\ \quad \\ \text{H}_3\text{C} \quad \text{C}_6\text{H}_5 \end{array}$ <p>tert-Butoxydiphenylchlorosilane CAS RN: 17922-24-6</p>	<p>C1492 5mL 25mL</p> $\begin{array}{c} \text{CH}(\text{CH}_3)_2 \\ \\ \text{H}-\text{Si}-\text{Cl} \\ \\ \text{CH}(\text{CH}_3)_2 \end{array}$ <p>Chlorodiisopropylsilane CAS RN: 2227-29-4</p>	<p>T0398 5g 25g 500g</p> $\begin{array}{c} \text{Cl} \\ \\ \text{H}-\text{Si}-\text{Cl} \\ \\ \text{Cl} \end{array}$ <p>Trichlorosilane CAS RN: 10025-78-2</p>	<p>C2411 5g</p> $\begin{array}{c} \text{Si}(\text{CH}_3)_3 \\ \\ (\text{CH}_3)_3\text{Si}-\text{Si}-\text{Cl} \\ \\ \text{Si}(\text{CH}_3)_3 \end{array}$ <p>Chlorotris(trimethylsilyl)silane CAS RN: 5565-32-2</p>	<p>D0358 25mL 100mL 500mL</p> $\begin{array}{c} \text{Cl} \\ \\ \text{CH}_3-\text{Si}-\text{CH}_3 \\ \\ \text{Cl} \end{array}$ <p>Dichlorodimethylsilane CAS RN: 75-78-5</p>
<p>D1976 5g 25g</p> $\begin{array}{c} \text{Cl} \\ \\ \text{CH}_3\text{CH}_2-\text{Si}-\text{CH}_2\text{CH}_3 \\ \\ \text{Cl} \end{array}$ <p>Dichlorodiethylsilane CAS RN: 1719-53-5</p>	<p>D2603 5g 25g</p> $\begin{array}{c} \text{CH}_3 \quad \text{Cl} \quad \text{CH}_3 \\ \quad \quad \\ \text{C}-\text{Si}-\text{C} \\ \quad \quad \\ \text{CH}_3 \quad \text{Cl} \quad \text{CH}_3 \end{array}$ <p>Dichlorodiisopropylsilane CAS RN: 7751-38-4</p>	<p>D2469 5g</p> $\begin{array}{c} \text{H}_3\text{C} \quad \text{Cl} \quad \text{CH}_3 \\ \quad \quad \\ \text{H}_3\text{C}-\text{C}-\text{Si}-\text{C}-\text{CH}_3 \\ \quad \quad \\ \text{H}_3\text{C} \quad \text{Cl} \quad \text{CH}_3 \end{array}$ <p>Di-tert-butylchlorosilane CAS RN: 18395-90-9</p>	<p>D1995 5mL 10mL 25mL</p> $\begin{array}{c} \text{Cl} \\ \\ \text{CH}_3-\text{Si}-(\text{CH}_2)_3\text{Cl} \\ \\ \text{Cl} \end{array}$ <p>3-Chloropropylchloromethylsilane CAS RN: 7787-93-1</p>	<p>D0362 25g 100g 500g</p> $\begin{array}{c} \text{C}_6\text{H}_5 \\ \\ \text{Si}-\text{Cl} \\ \\ \text{C}_6\text{H}_5 \end{array}$ <p>Dichlorodiphenylsilane CAS RN: 80-10-4</p>
<p>D2334 5g 25g</p> $\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\ \quad \\ \text{Cl}-\text{Si}-\text{O}-\text{Si}-\text{Cl} \\ \quad \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$ <p>1,3-Dichloro-1,1,3,3-tetramethyldisiloxane CAS RN: 2401-73-2</p>	<p>D1608 5g 25g</p> $\begin{array}{c} (\text{CH}_3)_2\text{HC} \quad \text{CH}(\text{CH}_3)_2 \\ \quad \\ \text{Cl}-\text{Si}-\text{O}-\text{Si}-\text{Cl} \\ \quad \\ (\text{CH}_3)_2\text{HC} \quad \text{CH}(\text{CH}_3)_2 \end{array}$ <p>1,3-Dichloro-1,1,3,3-tetraisopropyldisiloxane CAS RN: 69304-37-6</p>	<p>B1688 5g 25g</p> $\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\ \quad \\ \text{Cl}-\text{Si}-\text{CH}_2\text{CH}_2-\text{Si}-\text{Cl} \\ \quad \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$ <p>1,2-Bis(chlorodimethylsilyl)ethane CAS RN: 13528-93-3</p>	<p>B1699 1mL 5mL</p> $\begin{array}{c} \text{SiH}(\text{CH}_3)_2 \\ \\ \text{C}_6\text{H}_4 \\ \\ \text{SiH}(\text{CH}_3)_2 \end{array}$ <p>1,2-Bis(dimethylsilyl)benzene CAS RN: 17985-72-7</p>	<p>D3135 1g 5g</p> $\begin{array}{c} \text{O} \quad \text{C}(\text{CH}_3)_3 \quad \text{O} \\ \quad \quad \\ \text{CF}_3-\text{S}-\text{O}-\text{Si}-\text{O}-\text{S}-\text{CF}_3 \\ \quad \quad \\ \text{O} \quad \text{C}(\text{CH}_3)_3 \quad \text{O} \end{array}$ <p>Di-tert-butylsilyl Ditriflate CAS RN: 85272-31-7</p>

Acylation Reagents

A1219 1g 5g

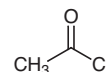
1-Acetyl-1H-1,2,3-triazolo[4,5-b]pyridine
CAS RN: 107866-54-6

A2301 5g

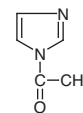
3-Acetylthiazolidine-2-thione
CAS RN: 76397-53-0

Acetylation Reagents

A0082 100g 500g

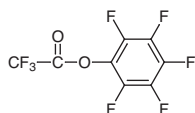
Acetyl Chloride
CAS RN: 75-36-5

A0694 25g 100g 500g

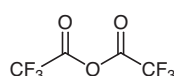
N-Acetylimidazole
CAS RN: 2466-76-4

Trifluoroacetylation Reagents

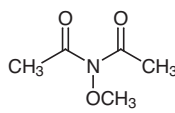
P1894 5g 25g

Pentafluorophenyl Trifluoroacetate
CAS RN: 14533-84-7

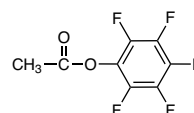
T0433 20mL 100mL 400mL

Trifluoroacetic Anhydride
CAS RN: 407-25-0

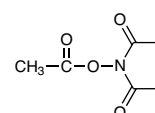
M1168 5g

N,N,N-Diacetylmethoxyamine
CAS RN: 128459-09-6

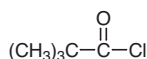
P2192 1g 5g

Pentafluorophenyl Acetate
CAS RN: 19220-93-0

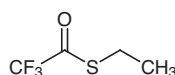
S0878 5g 25g

N-Succinimidyl Acetate
CAS RN: 14464-29-0

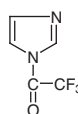
P0677 25mL 500mL

Pivaloyl Chloride
CAS RN: 3282-30-2

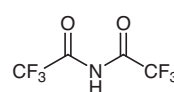
T0872 5mL

Trifluorothioacetic Acid S-Ethyl Ester
CAS RN: 383-64-2

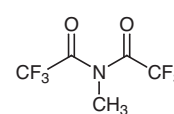
T0670 5g 25g

1-(Trifluoroacetyl)imidazole
CAS RN: 1546-79-8

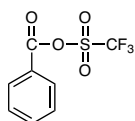
B0986 5g 25g

Bistrifluoroacetamide
CAS RN: 407-24-9

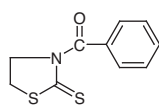
M0671 1mL 5mL

MBTFA
CAS RN: 685-27-8

B3567 5g

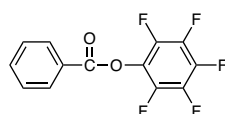
Benzoyl Triflate
CAS RN: 36967-85-8

B3571 1g 5g

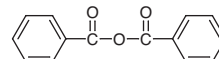
3-Benzoylthiazolidine-2-thione
CAS RN: 70326-37-3

Benzoylation Reagents

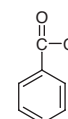
P2229 1g 5g

Pentafluorophenyl Benzoate
CAS RN: 1548-84-1

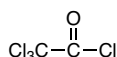
B0078 25g 100g 500g

Benzoic Anhydride
CAS RN: 93-97-0

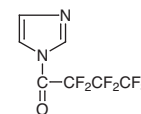
B0105 25mL 500mL

Benzoyl Chloride
CAS RN: 98-88-4

T0373 25g 100g 500g

Trichloroacetyl Chloride
CAS RN: 76-02-8

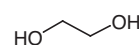
H0467 5g 25g

1-(Perfluorobutyl)imidazole
CAS RN: 32477-35-3

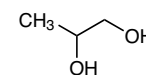
Other Acylation Reagents


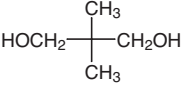

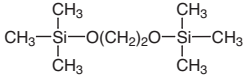
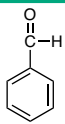
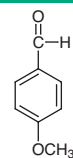
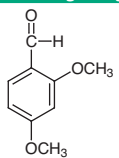
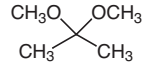
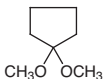
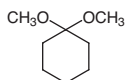
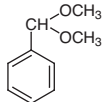
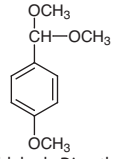
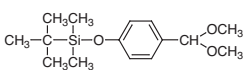
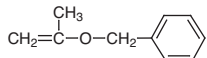
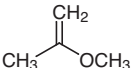
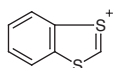
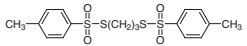
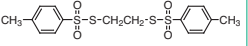
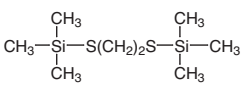

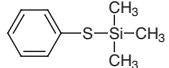
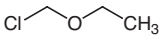
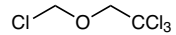
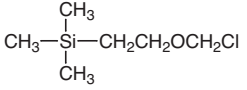
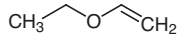
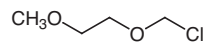
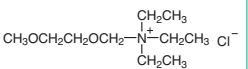

Acetalization Reagents
Thioacetalization ReagentsAcetalization Reagents
(Diol Derivatives)

E0105 25g 500g

Ethylene Glycol
CAS RN: 107-21-1

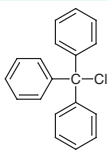
P0485 500g

1,2-Propanediol
CAS RN: 57-55-6

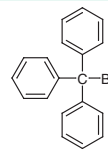
<p>P0486 25g 100g 500g</p>  <p>1,3-Propanediol CAS RN: 504-63-2</p>	<p>D0791 25g 500g</p>  <p>2,2-Dimethyl-1,3-propanediol CAS RN: 126-30-7</p>	<p>B3563 5g 25g</p>  <p>1,3-Bis(trimethylsilyloxy)propane CAS RN: 17887-80-8</p>	<p>E0478 25g</p>  <p>1,2-Bis(trimethylsilyloxy)ethane CAS RN: 7381-30-8</p>	<p>Acetalization Reagents (Carbonyl Derivatives)</p>	
<p>B2379 500g</p>  <p>Benzaldehyde CAS RN: 100-52-7</p>	<p>A0480 25mL 500mL</p>  <p><i>p</i>-Anisaldehyde CAS RN: 123-11-5</p>	<p>D0626 25g 100g 500g</p>  <p>2,4-Dimethoxybenzaldehyde CAS RN: 613-45-6</p>	<p>A0057 25mL 500mL</p>  <p>2,2-Dimethoxypropane CAS RN: 77-76-9</p>		<p>D1886 1mL 5mL</p>  <p>1,1-Dimethoxycyclopentane CAS RN: 931-94-2</p>
<p>D1372 25mL 100mL 500mL</p>  <p>1,1-Dimethoxycyclohexane CAS RN: 933-40-4</p>	<p>B1197 25mL 100mL 500mL</p>  <p>Benzaldehyde Dimethyl Acetal CAS RN: 1125-88-8</p>	<p>A1247 25mL 500mL</p>  <p><i>p</i>-Anisaldehyde Dimethyl Acetal CAS RN: 2186-92-7</p>	<p>B3577 5g</p>  <p><i>tert</i>-Butyl[4-(dimethoxymethyl)phenoxy]dimethylsilane CAS RN: 118736-04-2</p>		<p>B1257 1mL 5mL</p>  <p>2-Benzyloxy-1-propene CAS RN: 32783-20-3</p>
<p>I0303 25mL 100mL 500mL</p>  <p>2-Methoxypropene CAS RN: 116-11-0</p>	<p>Thio-acetalization Reagents</p>		<p>B1151 5g</p>  <p>1,3-Benzodithiolium Tetrafluoroborate CAS RN: 57842-27-0</p>		<p>D2390 5g 25g</p>  <p>1,3-Di(<i>p</i>-tosylthio)propane CAS RN: 3866-79-3</p>
<p>E0471 5g 25g</p>  <p>1,2-Di(<i>p</i>-tosylthio)ethane CAS RN: 2225-23-2</p>	<p>E0479 5g</p>  <p>1,2-Bis(trimethylsilylthio)ethane CAS RN: 51048-29-4</p>	<p>P0763 25mL 100mL</p>  <p>1,3-Propanedithiol CAS RN: 109-80-8</p>	<p>P1378 5g 25g</p>  <p>(Phenylthio)trimethylsilane CAS RN: 4551-15-9</p>		
<p>Alkoxy methylation Reagents</p>					
<p>C0201 25g 100g 500g</p>  <p>Chloromethyl Ethyl Ether CAS RN: 3188-13-4</p>	<p>C2412 5g</p>  <p>Chloromethyl 2,2,2-Trichloroethyl Ether CAS RN: 69573-75-7</p>	<p>C1339 5mL 25mL</p>  <p>SEM-Chloride CAS RN: 76513-69-4</p>	<p>E0193 25mL 100mL 500mL</p>  <p>Ethyl Vinyl Ether CAS RN: 109-92-2</p>	<p>M0680 25mL 500mL</p>  <p>MEM-Chloride CAS RN: 3970-21-6</p>	
<p>M0681 5g</p>  <p>(2-Methoxyethoxymethyl)-triethylammonium Chloride CAS RN: 60043-43-8</p>	<p>D0555 25mL 100mL 500mL</p>  <p>3,4-Dihydro-2<i>H</i>-pyran CAS RN: 4551-15-9</p>				

Trylation (Tr) Reagents

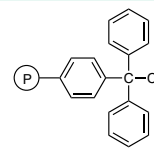
C0308 25g 100g 500g

Trityl Chloride
CAS RN: 76-83-5

T0512 25g 100g

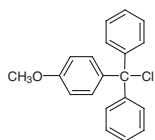
Trityl Bromide
CAS RN: 596-43-0

T3432 1g 5g

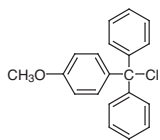


Trityl Chloride Resin cross-linked with 1% DVB

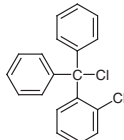
M0790 25g 250g

4-Methoxytrityl Chloride
CAS RN: 14470-28-1

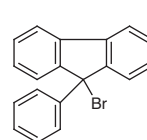
D1612 5g 25g

DMT-Cl
CAS RN: 40615-36-9

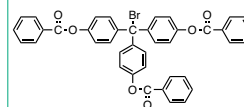
D2504 25g

2-Chlorotrityl Chloride
CAS RN: 42074-68-0

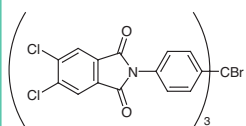
B1702 5g 25g

9-Bromo-9-phenylfluorene
CAS RN: 55135-66-5

T1071 5g 25g

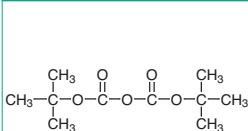
Tris[4-(phenylcarbonyloxy)phenyl]methyl Bromide
CAS RN: 86610-66-4

T1526 1g

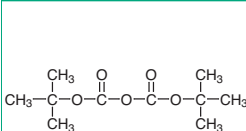
4,4',4''-Tris(4,5-dichlorophthalimido)trityl Bromide
CAS RN: 91898-93-0

tert- Butoxycarbonylation (Boc) Reagents

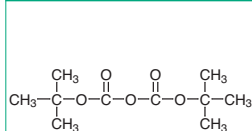
D1547 25g 100g 500g

Boc₂O
CAS RN: 24424-99-5

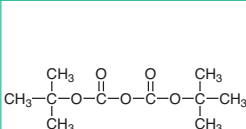
D3878 100g 500g

Boc₂O (ca. 30% in Dioxane)
CAS RN: 24424-99-5

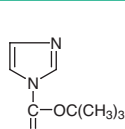
D3879 100mL 500mL

Boc₂O (ca. 30% in Tetrahydrofuran)
CAS RN: 24424-99-5

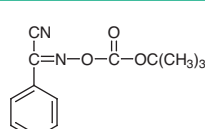
D3880 100g 400g 500g

Boc₂O (ca. 30% in Toluene)
CAS RN: 24424-99-5

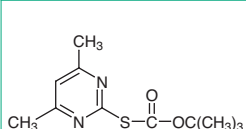
B0916 10g

N-Boc-imidazole
CAS RN: 49761-82-2

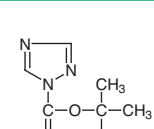
B0988 5g 25g

Boc-ON
CAS RN: 58632-95-4

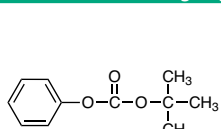
B1089 5g 25g

2-Boc-thio-4,6-dimethylpyrimidine
CAS RN: 41840-28-2

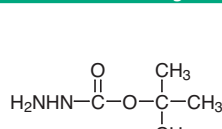
B1969 5g 25g

1-Boc-1,2,4-triazole
CAS RN: 41864-24-8

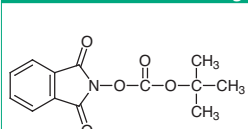
B3590 5g 25g

tert-Butyl Phenyl Carbonate
CAS RN: 6627-89-0

C0933 25g 250g

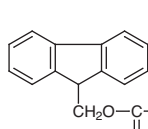
Boc-hydrazine
CAS RN: 870-46-2

C1573 5g

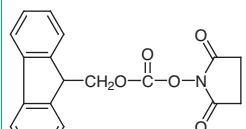
N-(tert-Butoxycarbonyloxy)-phthalimide
CAS RN: 15263-20-4

9-Fluorenylmethoxy carbonylation (Fmoc) Reagents

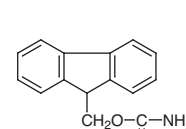
F0197 5g 25g 100g

Fmoc-Cl
CAS RN: 28920-43-6

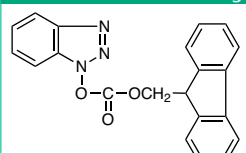
F0239 5g 25g

Fmoc-OSu
CAS RN: 82911-69-1

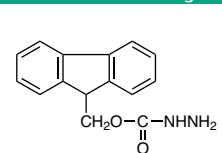
F0689 1g 5g

Fmoc-NH₂
CAS RN: 84418-43-9

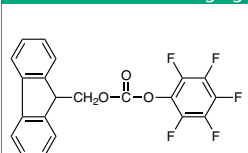
F0871 5g

Fmoc-OBt
CAS RN: 82911-71-5

F0872 5g 25g

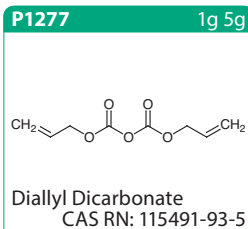
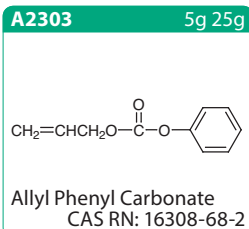
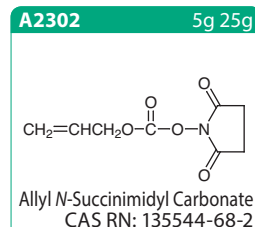
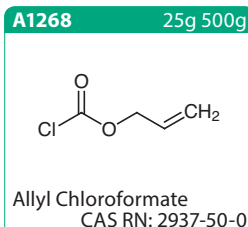
Fmoc-hydrazine
CAS RN: 35661-51-9

F0936 1g 5g

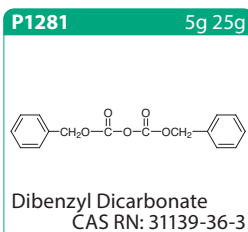
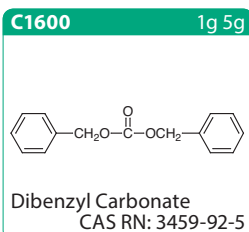
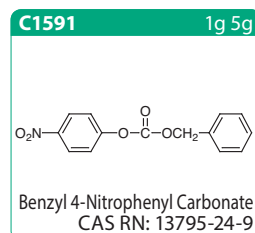
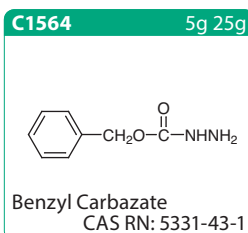
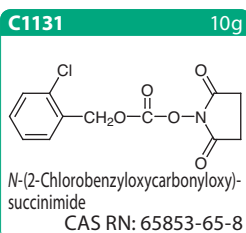
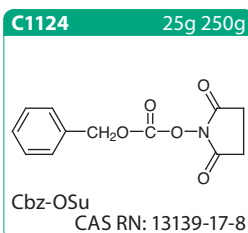
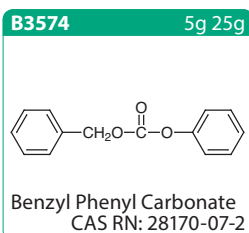
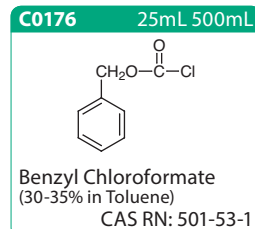
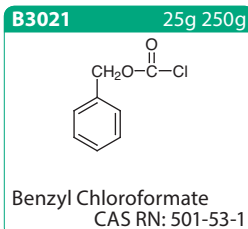
Fmoc-OPfp
CAS RN: 88744-04-1

Allyloxycarbonylation Reagents, Benzyloxycarbonylation Reagents, Benzylation Reagents, Allylation Reagents

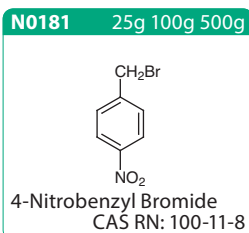
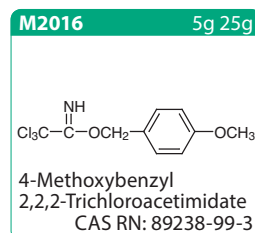
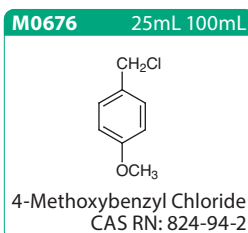
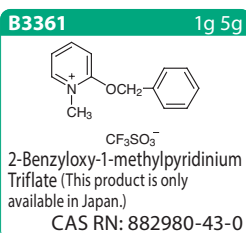
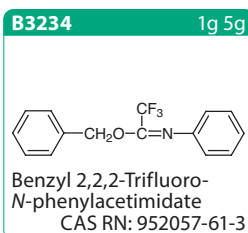
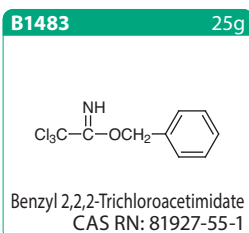
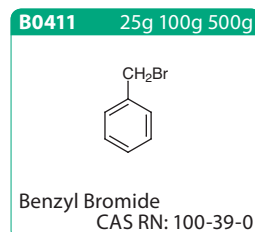
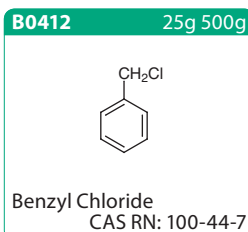
Allyloxy- carbonylation (Alloc) Reagents



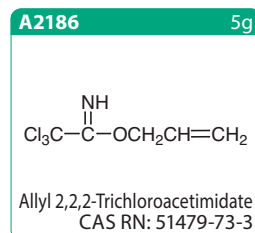
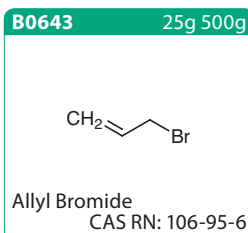
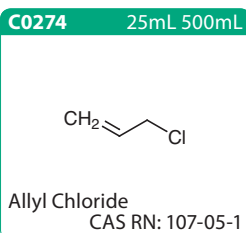
Benzyloxy- carbonylation (Cbz) Reagents



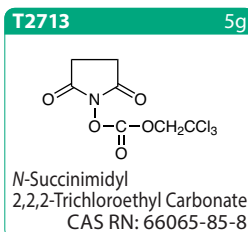
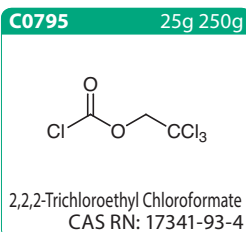
Benylation (Bn) Reagents



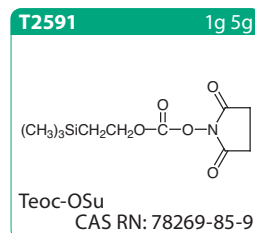
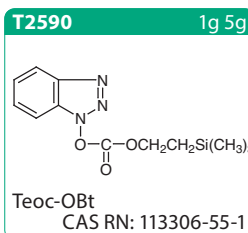
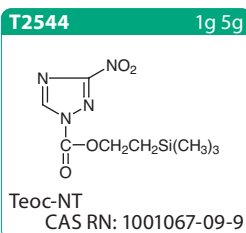
Allylation (All) Reagents



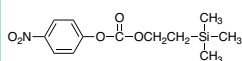
2,2,2-Trichloroethoxy- carbonylation (Troc) Reagents



2-(Trimethylsilyl)- ethoxycarbonylation (Teoc) Reagents



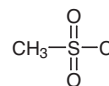
T2872 5g

Teoc-ONp
CAS RN: 80149-80-0

Sulfonylation Reagents

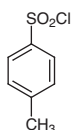
Mesylation (Ms) Reagents

M0094 25g 500g

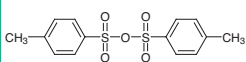
Mesityl Chloride
CAS RN: 124-63-0

Tosylation (Ts) Reagents

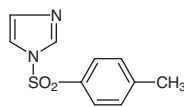
T0272 25g 500g

*p*-Toluenesulfonyl Chloride
CAS RN: 98-59-9

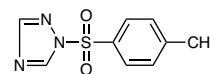
T1485 5g 25g

*p*-Toluenesulfonic Anhydride
CAS RN: 4124-41-8

T1985 5g 25g

1-(*p*-Toluenesulfonyl)imidazole
CAS RN: 2232-08-8

T3187 1g 5g

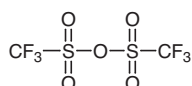
1-(*p*-Toluenesulfonyl)-1,2,4-triazole
CAS RN: 13578-51-3

Triflation (Tf) Reagents

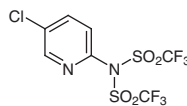
T1027 5g 25g

Trifluoromethanesulfonyl Chloride
CAS RN: 421-83-0

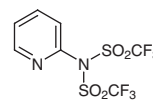
T1100 10g 25g 250g

Trifluoromethanesulfonic Anhydride
CAS RN: 358-23-6

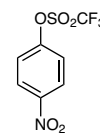
B1865 5g 25g

Comins Triflating Reagent
CAS RN: 145100-51-2

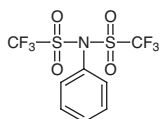
B1871 5g

2-Pyridyltriflimide
CAS RN: 145100-50-1

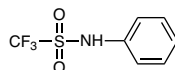
N0993 5g 25g

4-Nitrophenyl Triflate
CAS RN: 17763-80-3

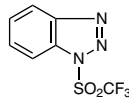
P1257 5g 25g

Phenyl Triflimide
CAS RN: 37595-74-7

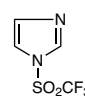
T2985 1g 5g

Trifluoromethanesulfonamide
CAS RN: 456-64-4

T3167 1g 5g

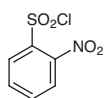
1-(Trifluoromethanesulfonyl)-1*H*-benzotriazole
CAS RN: 117632-84-5

T3177 1g 5g

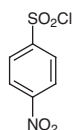
1-(Trifluoromethanesulfonyl)imidazole
CAS RN: 29540-81-6

Nosylation (Ns) Reagents

N0142 25g 100g 500g

2-Nitrobenzenesulfonyl Chloride
CAS RN: 1694-92-4

N0144 5g 25g 100g

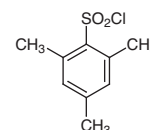
4-Nitrobenzenesulfonyl Chloride
CAS RN: 98-74-8

Other Sulfonylation Reagents

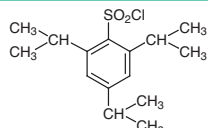
B0036 25g 500g

Benzenesulfonyl Chloride
CAS RN: 98-09-9

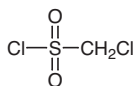
M0071 25g 100g 500g

2-Mesitylenesulfonyl Chloride
CAS RN: 773-64-8

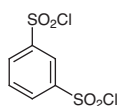
T0459 25g 500g

2,4,6-Triisopropylbenzenesulfonyl Chloride
CAS RN: 6553-96-4

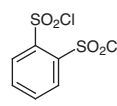
C0924 5g 25g

Chloromethylsulfonyl Chloride
CAS RN: 3518-65-8

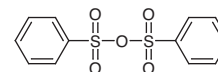
B0848 5g 25g

1,3-Benzenedisulfonyl Chloride
CAS RN: 585-47-7

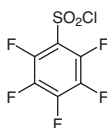
B1128 1g 5g 25g

1,2-Benzenedisulfonyl Dichloride
CAS RN: 6461-76-3

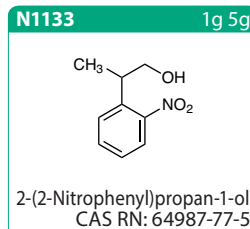
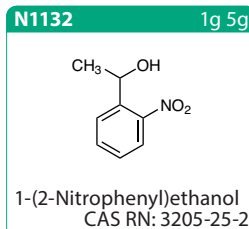
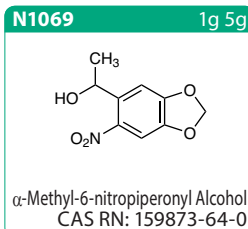
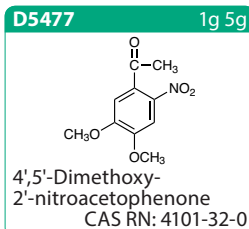
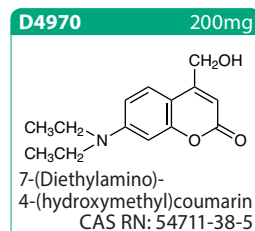
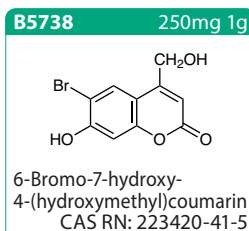
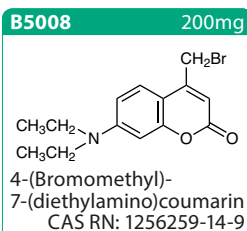
B1931 5g 25g

Benzenesulfonic Anhydride
CAS RN: 512-35-6

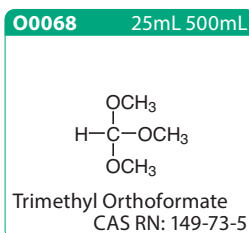
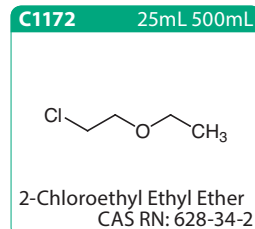
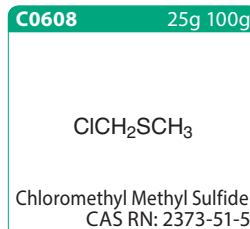
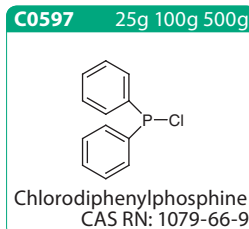
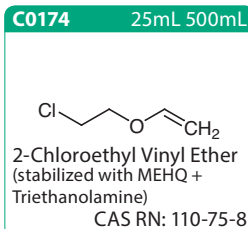
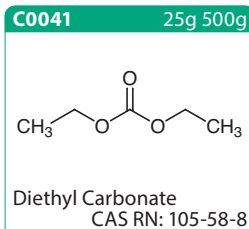
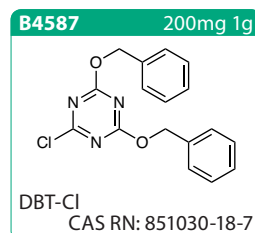
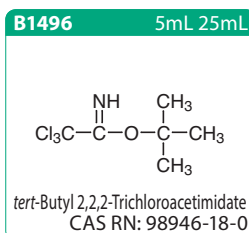
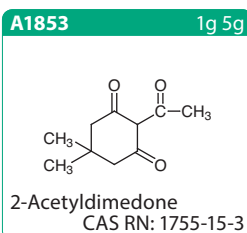
P0934 5g 25g

Pentafluorobenzenesulfonyl Chloride
CAS RN: 832-53-1

Photolabile Protection Reagents



Other Protecting Reagents



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