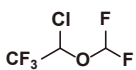


Difluoromethylated Compounds

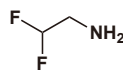
Building Blocks



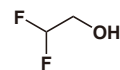
Difluoroiodomethane
(ca. 2mol/L in Acetonitrile)
5mL
[D5762]



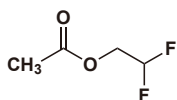
1-Chloro-2,2,2-trifluoroethyl Difluoromethyl Ether
5g / 25g
[C2485]



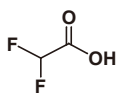
2,2-Difluoroethylamine
1g / 5g
[D4758]



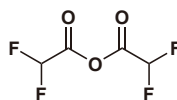
2,2-Difluoroethanol
5g / 25g
[D4128]



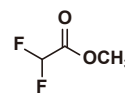
2,2-Difluoroethyl Acetate
5g / 25g
[D5040]



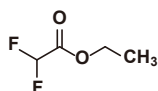
Difluoroacetic Acid
5g / 25g
[D1423]



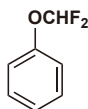
Difluoroacetic Anhydride
5g
[D4164]



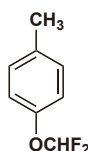
Methyl Difluoroacetate
5g / 25g
[M2021]



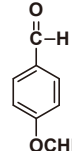
Ethyl Difluoroacetate
5g / 25g
[D2498]



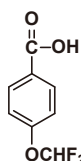
(Difluoromethoxy)benzene
5g / 25g
[D4914]



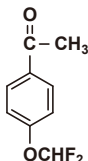
4-(Difluoromethoxy)toluene
1g
[D4936]



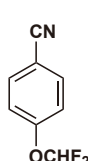
4-(Difluoromethoxy)benzaldehyde
1g / 5g
[D4334]



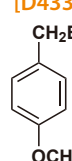
4-(Difluoromethoxy)benzoic Acid
1g / 5g
[D4762]



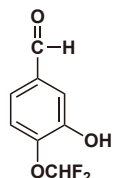
4'-(Difluoromethoxy)acetophenone
1g / 5g
[D4760]



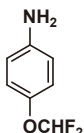
4-(Difluoromethoxy)benzonitrile
1g / 5g
[D4955]



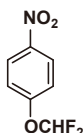
4-(Difluoromethoxy)benzyl Bromide
1g / 5g
[D4956]



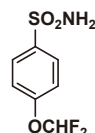
4-(Difluoromethoxy)-3-hydroxybenzaldehyde
5g
[D4505]



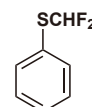
4-(Difluoromethoxy)aniline
5g
[D3457]



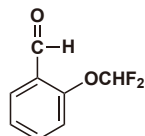
4-(Difluoromethoxy)nitrobenzene
5g
[D2601]



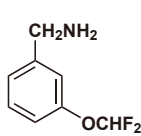
4-(Difluoromethoxy)benzenesulfonamide
1g / 5g
[D4778]



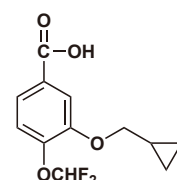
Difluoromethyl Phenyl Sulfide
1g
[D4938]



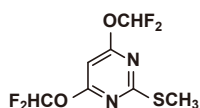
2-(Difluoromethoxy)benzaldehyde
1g / 5g
[D4837]



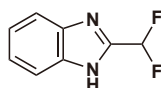
3-(Difluoromethoxy)benzylamine
1g / 5g
[D5164]



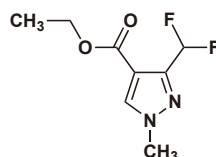
3-(Cyclopropylmethoxy)-4-(difluoromethoxy)benzoic Acid
1g / 5g
[C3395]



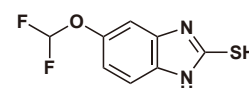
4,6-Bis(difluoromethoxy)-2-(methylthio)pyrimidine
5g / 25g
[B2755]



2-(Difluoromethyl)benzimidazole
1g / 5g
[D4763]



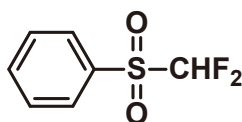
Ethyl 3-(Difluoromethyl)-1-methylpyrazole-4-carboxylate
5g / 25g
[E1191]



5-(Difluoromethoxy)-2-mercaptobenzimidazole
25g
[D3438]

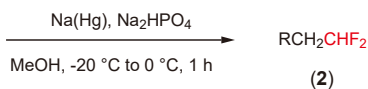
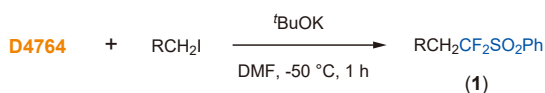
Difluoromethylation Reagents

● Difluoromethyl Anion Equivalent



Difluoromethyl Phenyl Sulfone

1g / 5g
[D4764]

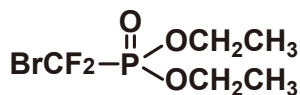


Desulfonylation

RCH ₂ I	1 (Yield %)	2 (Yield %)
Ph(CH ₂) ₄ I	Ph(CH ₂) ₄ CF ₂ SO ₂ Ph 52	Ph(CH ₂) ₄ CHF ₂ 87
Ph(CH ₂) ₅ I	Ph(CH ₂) ₅ CF ₂ SO ₂ Ph 59	Ph(CH ₂) ₅ CHF ₂ 90
Ph(CH ₂) ₆ I	Ph(CH ₂) ₆ CF ₂ SO ₂ Ph 50	Ph(CH ₂) ₆ CHF ₂ 85
PhO(CH ₂) ₃ I	PhO(CH ₂) ₃ CF ₂ SO ₂ Ph 71	PhO(CH ₂) ₃ CHF ₂ 91
PhO(CH ₂) ₄ I	PhO(CH ₂) ₄ CF ₂ SO ₂ Ph 60	PhO(CH ₂) ₄ CHF ₂ 88

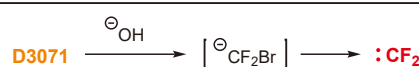
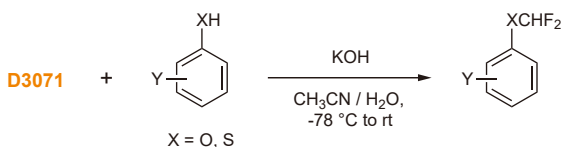
Reference G. K. S. Prakash, J. Hu, Y. Wang, G. A. Olah, *Org. Lett.* **2004**, 6, 4315.
<https://doi.org/10.1021/ol048166i>

● Difluorocarbene Precursor



Diethyl (Bromodifluoromethyl)phosphonate

5g / 25g
[D3071]



Phenol or Thiophenol	Product	Yield (%)
		87
		98
		91
		88
		96

Reference Y. Zafrani, G. Sod-Moriah, Y. Segall, *Tetrahedron* **2009**, 65, 5278.
<https://doi.org/10.1016/j.tet.2009.04.082>

Ordering and Customer Service

TCI AMERICA

Tel : 800-423-8616 / 503-283-1681
Fax : 888-520-1075 / 503-283-1987
E-mail : Sales-US@TCIchemicals.com

TCI EUROPE N.V.

Tel : +32 (0)3 735 07 00
Fax : +32 (0)3 735 07 01
E-mail : Sales-EU@TCIchemicals.com

TCI Deutschland GmbH

Tel : +49 (0)6196 64053-00
Fax : +49 (0)6196 64053-01
E-mail : Sales-DE@TCIchemicals.com

Tokyo Chemical Industry UK Ltd.

Tel : +44 (0)1865 78 45 60
E-mail : Sales-UK@TCIchemicals.com

梯希爱(上海)化成工业发展有限公司

Tel : 800-988-0390 / 021-67121386
Fax : 021-6712-1385
E-mail : Sales-CN@TCIchemicals.com

Tokyo Chemical Industry (India) Pvt. Ltd.

Tel : 1800 425 7889 / 044-2262 0909
E-mail : Sales-IN@TCIchemicals.com

TOKYO CHEMICAL INDUSTRY CO., LTD.

Tel : +81 (0)3-5640-8878
E-mail : globalbusiness@TCIchemicals.com

• Chemicals itemized in this brochure are for research and testing use only. Please avoid use other than by chemically knowledgeable professionals. • Information such as listed products and its specifications and so on are subject to change without prior notice. • The contents may not be reproduced or duplicated in whole or in part without permission of Tokyo Chemical Industry Co., Ltd.