



# 2007 Catalog

*Featuring products for*

- Organic synthesis
- Automated chemistry
- Synthesis of peptides, oligonucleotides, & oligosaccharides
- Proteomics & metabolomics



*Advanced separation chemistry  
for life sciences*

**Protecting groups / tags**

F-Boc-ON	2-[2-(perfluoroalkyl)isopropoxycarbonyloxyimino]-2-phenylacetone nitrile	3
F-Silanes	Diisopropyl-(perfluoroalkyl)silane	3
F-t-Butanol	2-Methyl-4-perfluoroalkyl-2-butanol	4
F-Cbz-Osu	N-[4-(perfluoroalkyl)benzyloxycarbonyloxy]succinimide	4
F-Thiol	Perfluoroalkyl thiol	5
FluoMar	4-(perfluoroalkyl-1-thio)-phenol	5
F-Trichlorosilane	1H,1H,2H,2H-perfluorodecyltrichlorosilane	5
F-PMB OH	4-[3-(perfluoroalkyl)propyl-1-oxy]benzyl alcohol	6
F-Benzyl alcohol	4-(perfluoroalkyl)benzyl alcohol	6
F-Thiophenol	4-(3-perfluoroalkyl-1-oxy)thiophenol	7

**Scavengers**

<b>Nucleophilic</b>			
F-Thiol	Perfluoroalkyl thiol	8	
F-Benzylamine	4-(perfluoroalkyl)benzylamine	8	
F-Propylamine	3-(perfluoroalkyl)propylamine	8	
<b>Electrophilic</b>			
F-Isatoic anhydride	1-[3-(perfluoroalkyl)propyl]-(1H-benzo[d][1,3] oxazine-2,4-dione	9	
F-Isocyanate	2-(perfluoroalkyl)ethyl isocyanate	9	
F-Oxybenzaldehyde	4-[3-(perfluoroalkyl)-propyl-1-oxy]benzaldehyde	9	
<b>Metal</b>			
F-Methylaminodiol	Perfluoroalkyl ethylaminodiol	10	
F-Methyl thiourea	Perfluoroalkyl methyl thiourea	10	
F-TMT	Perfluoroalkyl 2,4,6-trimercaptotriazine	10	

**Peptide synthesis****Tags & Reagents**

F-Fmoc-OSu	N-[2,7-Bis(1H,1H,2H,2H-perfluorooctyl)-9-fluorenylmethoxycarbonyloxy]succinimide	11
F-Fmoc-Cl	2,7-Bis(1H,1H,2H,2H-perfluorooctyl)-9-fluorenylmethoxycarbonyl chloride	11
F-Trityl alcohol	1-[4-(1H,1H,2H,2H-perfluorodecyl)phenyl]-1,1-diphenylmethanol	11
F-Dimethoxy trityl chloride	1,1-Di-(4-methoxyphenyl)-1-[4-(1H,1H,2H,2H-perfluorodecyl)phenyl]methyl chloride	12
F-Dimethoxy trityl alcohol	1,1-Di-(4-methoxyphenyl)-1-[4-(1H,1H,2H,2H-perfluorodecyl)phenyl]methanol	12
F-Monomethoxy trityl alcohol	1-(4-methoxyphenyl)-1-[4-(1H,1H,2H,2H-perfluorodecyl)phenyl]-1-phenylmethanol	12
F-Monomethoxy trityl chloride	1-(4-methoxyphenyl)-1-[4-(1H,1H,2H,2H-perfluorodecyl)phenyl]-1-phenylmethyl chloride	12
F-Boc-ON	2-[2-(perfluoroalkyl)isopropoxycarbonyloxyimino]-2-phenylacetone nitrile	13
F-t-Butanol	2-Methyl-4-perfluoroalkyl-2-butanol	13
F-Z-Osu	N-[4-(perfluoroalkyl)benzyloxycarbonyloxy]succinimide	13
F-HOBt	6-[N-(3-(perfluoroalkyl)propyl)-N-(3-(perfluoroalkyl)propyl)aminosulfonyl]-1-hydroxybenzotriazole	13
F-DCC	N-Cyclohexyl-N'-[3-(perfluoroalkyl)propyl]carbodiimide	13
F-Mukaiyama's Reagent	2-Chloro-1[4-(perfluoroalkyl-9-methyldecyl)benzyl]pyridinium hexafluorophosphate	14
F-Msc chloride	2-[perfluoroalkyl]-ethylsulfonylethyl chloroformate	14
F-CDMT	Perfluoroalkyl 2-chloro-4,6-dimethoxy-1,3,5-triazine	14
F-Isocyanate	2-(perfluoroalkyl)ethyl isocyanate	14
F-Carboxylic Acid	Perfluoroalkyl-10-methylundecanoic acid	15

**Amino acids**

F-Boc-protected amino acids	D- and L- amino acids N-protected with F-Boc	15
F-Fmoc-protected amino acids	D- and L- amino acids N-protected with F-Fmoc	15
F-Cbz-protected amino acids	D- and L- amino acids N-protected with F-Cbz	16

**Tagging reagents for proteomics sample enrichment**

F-Propylamine	3-(Perfluoroalkyl)propylamine	17
F-Maleimide	3-(perfluoroalkyl)-propyl-1-maleimide	17
F-Iodoacetamide	N-[(3-perfluoroalkyl)-propyl] iodoacetamide	17
F-NHS Ester	N-Succinimidyl 3-perfluoroalkylpropionate	17
F-Propylazide	3-perfluoroalkyl-propylazide	18
F-Aminoxy acetamide	2-aminoxy-N-(3-perfluoroalkyl-propyl)-acetamide	18
F-Succinimidyl Sodium Salt	N-3-sulfo-succinimidyl-perfluoroalkyl sodium salt	18
F-Thiol	1H,1H,2H,2H-Perfluoroalkane-1-thiol	18

**Reagents and catalysts**

<b>Phosphine</b>	F-Triphenylphosphines & TPP oxides	Variety of tag configurations	19-20-21
<b>Tin</b>	F-Tin hydride	Tris(perfluoroalkyl)tin hydride	22
	F-Phenyl tin	Tris[3-(perfluoroalkyl)propyl]phenyl tin	22
	F-Allyl tin	Tris[3-(perfluoroalkyl)propyl]allyl tin	22
	F-Tin bromide	Tris(perfluoroalkyl)tin bromide	22
	F-Tin azide	Tris(perfluoroalkyl)tin azide	22
	F-Tin oxide	Bis(perfluoroalkyl)tin oxide	23
<b>Other</b>	F-DIAD	Bis(perfluoroalkyl)azodicarboxylate	24
	F-Dimethyl sulfide	Methyl (perfluoroalkyl)-sulfide	24
	F-Diacetoxiodobenzene	4-(perfluoroalkyl)-1-(diacetoxiodo)benzene	24
	F-Salen-Co complex	trans-1,2-Cyclohexanediamino-N,N'-bis[3-t-butyl-5-(perfluoroalkyl)salicylidene]cobalt (II)	24
	F-Salen (ligand only)	1,2-Cyclohexanediamino-N,N'-bis[3-t-butyl-5-(perfluoroalkyl)salicylidene] (mixed isomers)	25
	F-Benzophenone Imine	(4-(1H,1H,2H,2H-perfluorodecyl)phenyl)phenylmethanimine	25

**Precursors and misc cpds**

F-Perfluoroalkyl iodides	Perfluoroalkyl iodides with no spacer, ethyl spacer, and propyl spacer	26
F-Aniline	4-(perfluoroalkyl)aniline	27
F-Bromobenzene - Branched	1-Bromo-4-(perfluoroalkyl)benzene	27
F-Bromobenzene - Ethylene Spacer	1-Bromo-4-(1H,1H,2H,2H-perfluorooctyl)benzene	27
F-Methyl Benzoate - no spacer	Methyl 4-(perfluoroalkyl)benzoate	27
F-Benzyl OH	4-(perfluoroalkyl)benzyl alcohol	27
F-Thioacetate	S-(perfluoroalkyl-9-methyldecyl) thioacetate	27
F-Benzoates - Ethylene Spacer	Methyl 4-(1H,1H,2H,2H-perfluorooctyl)benzoate	28
F-Propanols	3-(perfluoroalkyl)propanol	28
F-Olefins	Perfluoroalkyl olefin compounds	28
F-Alkanal	Perfluoroalkyl alkanal compounds	29
F-Ethanol	Perfluoroalkyl ethanol	29
F-Carboxylic Acid	Perfluoroalkyl-10-methylundecanoic acid	29
F-Triazolidine dione	4-(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptafluorodecyl)-[1,2,4]triazolidine-3,5-dione	30
F-Acrylate	1,1-dimethyl-3-(perfluoroalkyl)propyl acrylate	30

**Sorbents**

F-SPE cartridges	FluoroFlash® Solid Phase Extraction Cartridges	31
F-HPLC columns	FluoroFlash® HPLC Columns	31
F-Silica Gel	FluoroFlash® Silica Gel, bulk	32
F-Pipette Tips	FluoroFlash® NuTips	32
F-Modified Glass Slides	Fluorous Modified Glass Slides for Microarray Applications	32
F-TLC plates	FluoroFlash® TLC Plates	32

**Kits**

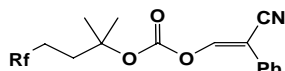
Multi-product kits		33
--------------------	--	----

**Ordering Information & Other Details**

34

## Protecting Groups &amp; Tags

## Boc-ON

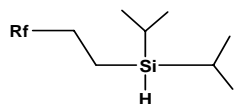


F-Boc-ON is the fluorous equivalent of 2-(t-butoxycarbonyloxyimino)-2-phenylacetonitrile (BOC-ON) used in primarily in the protection of amines. Analogous to conventional Boc, the fluorous Boc group is acid labile, but stable to a wide range of basic and nucleophilic conditions. F017003, the C8F17 analog of F-Boc has the appropriate fluorine content for the tagging of diverse organic molecules and is recommended for natural product or medicinal chemistry synthesis in combination with fluorous solid phase extraction (1). The other F-Boc homologs are useful in fluorous HPLC and fluorous mixture synthesis.

1. Luo, Z.; Williams, J.; Read, R.W.; Curran, D.P.J. *Org. Chem.* **2001**, *66*, 4261-4266.

C3F7	F007003		2-[2-(1H,1H,2H,2H-Perfluoropentyl)isopropoxycarbonyloxyimino]-2-phenylacetonitrile								
	FW: 428.34	C17H15F7N2O3		2g	\$88.50	10g	\$365.50	25g	\$785.50	100g	\$2,163.00
C4F9	F009003		2-[2-(1H,1H,2H,2H-Perfluorohexyl)isopropoxycarbonyloxyimino]-2-phenylacetonitrile								
	FW: 478.35	C18H15F9N2O3		2g	\$66.00	10g	\$278.00	25g	\$592.50	100g	\$1,648.00
C6F13	F013003		2-[2-(1H,1H,2H,2H-Perfluorooctyl)isopropoxycarbonyloxyimino]-2-phenylacetonitrile								
	FW: 578.37	C20H15F13N2O3		2g	\$65.00	10g	\$273.00	25g	\$579.50	100g	\$1,596.50
C7F15	F015003		2-[2-(1H,1H,2H,2H-Perfluoro-7-methyloctyl)isopropoxycarbonyloxyimino]-2-phenylacetonitrile								
	FW: 628.38	C21H15F15N2O3		2g	\$153.50	10g	\$638.50	25g	\$1,352.00	100g	\$3,811.00
C8F17	F017003	CAS: 350716-42-6	2-[2-(1H,1H,2H,2H-Perfluorodecyl)isopropoxycarbonyloxyimino]-2-phenylacetonitrile								
	FW: 678.36	C22H15F17N2O3		2g	\$61.00	10g	\$252.50	25g	\$541.00	100g	\$1,493.50
C9F19	F019003		2-[2-(1H,1H,2H,2H-Perfluoro-9-methyldecyl)isopropoxycarbonyloxyimino]-2-phenylacetonitrile								
	FW: 728.37	C23H15F19N2O3		2g	\$80.50	10g	\$335.00	25g	\$721.00	100g	\$2,008.50
C10F21	F021003		2-[2-(1H,1H,2H,2H-Perfluorododecyl)isopropoxycarbonyloxyimino]-2-phenylacetonitrile								
	FW: 778.38	C24H15F21N2O3		2g	\$72.00	10g	\$304.00	25g	\$644.00	100g	\$1,802.50

## Silanes

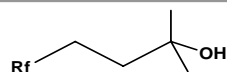


F-silanes are the fluorous equivalent to a TIPS group and exhibit properties similar to most silicon protecting groups and have been used in both parallel and fluorous mixture synthesis (1, 2). Tagging of an alcohol is accomplished by in-situ activation of the F-silane to either the bromide or triflate followed by addition of the alcohol. Detagging of the F-silane has appropriate fluorine content for the tagging of diverse organic molecules and is recommended for natural product or medicinal chemistry synthesis in combination with fluorous solid-phase extraction. The other F-silane homologs are useful in fluorous HPLC and fluorous mixture synthesis.

1. Palmacci, E.R.; Hewitt, M.C.; Seeberger, P.H. *Angew. Chem. Int. Ed.* **2001**, *40*, 4433-4437.

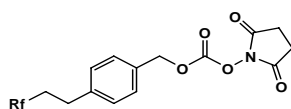
2. Zhang, W.; Luo, Z.; Chen, C.H.T.; Curran, D.P.J. *Am. Chem. Soc.* **2002**, *124*, 10443-10450.

C3F7	F007004		Diisopropyl-(1H,1H,2H,2H-perfluoropentyl)silane								
	FW: 312.35	C11H19F7Si		2g	\$72.00	10g	\$298.50	25g	\$644.00	100g	\$1,802.50
C4F9	F009004	CAS: 356056-13-8	Diisopropyl-(1H,1H,2H,2H-perfluorohexyl)silane								
	FW: 362.36	C12H19F9Si		2g	\$49.50	10g	\$206.00	25g	\$438.00	100g	\$1,236.00
C6F13	F013004	CAS: 356056-14-9	Diisopropyl-(1H,1H,2H,2H-perfluorooctyl)silane								
	FW: 462.38	C14H19F13Si		2g	\$45.50	10g	\$190.50	25g	\$399.00	100g	\$1,133.00
C7F15	F015004		Diisopropyl-(1H,1H,2H,2H-perfluoro-7-methyloctyl)silane								
	FW: 512.39	C15H19F15Si		2g	\$62.00	10g	\$257.50	25g	\$553.50	100g	\$1,545.00
C8F17	F017004	CAS: 356056-15-0	Diisopropyl-(1H,1H,2H,2H-perfluorodecyl)silane								
	FW: 562.4	C16H19F17Si		2g	\$37.00	10g	\$154.50	25g	\$422.00	100g	\$1,335.00
C9F19	F019004		Diisopropyl-(1H,1H,2H,2H-perfluoro-9-methyldecyl)silane								
	FW: 612.41	C17H19F19Si		2g	\$48.50	10g	\$201.00	25g	\$425.00	100g	\$1,184.50
C10F21	F021004	CAS: 356056-16-1	Diisopropyl-(1H,1H,2H,2H-perfluorododecyl)silane								
	FW: 662.42	C18H19F21Si		2g	\$44.50	10g	\$185.50	25g	\$386.50	100g	\$1,081.50

**t-Butanol**

Fluorous t-Butanol is used as a protecting group for carboxylic acids in organic synthesis

C3F7	F007007			2-Methyl-4-perfluoropropyl-2-butanol	2g	\$52.50	10g	\$221.50	25g	\$463.50	100g	\$1,287.50
		FW: 256.19	C8H11F7O									
C4F9	F009007	CAS: 269394-08-3		2-Methyl-4-perfluorobutyl-2-butanol	2g	\$30.00	10g	\$123.50	25g	\$257.50	100g	\$721.00
		FW: 306.2	C9H11F9O									
C6F13	F013007	CAS: 159142-65-1		2-Methyl-4-perfluorohexyl-2-butanol	2g	\$29.00	10g	\$118.50	25g	\$257.50	100g	\$721.00
		FW: 406.22	C11H11F13O									
C7F15	F015007			2-Methyl-4-perfluoro-5-methylhexyl-2-butanol	2g	\$61.00	10g	\$252.50	25g	\$541.00	100g	\$1,493.50
		FW: 456.23	C12H11F15O									
C8F17	F017007	CAS: 141183-94-0		2-Methyl-4-perfluorooctyl-2-butanol	2g	\$24.50	10g	\$103.00	25g	\$219.00	100g	\$618.00
		FW: 506.22	C13H11F17O									
C9F19	F019007			2-Methyl-4-perfluoro-7-methyloctyl-2-butanol	2g	\$37.00	10g	\$154.50	25g	\$335.00	100g	\$927.00
		FW: 556.25	C14H11F19O									
C10F21	F021007			2-Methyl-4-perfluorodecyl-2-butanol	2g	\$31.00	10g	\$129.00	25g	\$270.50	100g	\$772.50
		FW: 606.26	C15H11F21O									

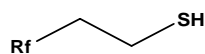
**F-Cbz-Osu**

F-Cbz-Osu is the fluorous equivalent of benzyloxycarbonyl oxysuccinimide (Cbz-Osu) used primarily in the protection of amino groups in peptide synthesis or multi-step organic synthesis (1, 2). Deprotection of the F-Cbz group is achieved under the same conditions as traditional Cbz such as hydrogenation or hydride reduction. F017008, the C8F17 analog of F-Cbz has appropriate fluorine content for the tagging of diverse organic molecules and is recommended for natural product or medicinal chemistry synthesis in combination with fluorous solid phase extraction. The other F-Cbz homologs are useful in fluorous HPLC and mixture synthesis.

1. Curran, D.P.; Amatore, M.; Guthrie, D.; Campbell, M.; Go, E.; Luo, Z.J. *Org. Chem.* **2003**, *68*, 4643-4647.
2. Manku, S.; Curran, D.P. *J. Org. Chem.* **2005**, *70*, 4470-4473.

C3F7	F007008			N-[4-(1H,1H,2H,2H-Perfluoropentyl)benzyloxycarbonyloxy]succinimide	2g	\$155.50	10g	\$649.00	25g	\$1,377.50	100g	\$3,862.50
		FW: 445.32	C17H14F7NO5									
C4F9	F009008			N-[4-(1H,1H,2H,2H-Perfluorohexyl)benzyloxycarbonyloxy]succinimide	2g	\$120.50	10g	\$504.50	25g	\$1,068.50	100g	\$3,417.60
		FW: 495.33	C18H14F9NO5									
C6F13	F013008	CAS: 556050-48-7		N-[4-(1H,1H,2H,2H-Perfluorooctyl)benzyloxycarbonyloxy]succinimide	2g	\$105.00	10g	\$438.00	25g	\$927.00	100g	\$2,966.40
		FW: 595.32	C20H14F13NO5									
C7F15	F015008			N-[4-(1H,1H,2H,2H-Perfluoro-7-methyloctyl)benzyloxycarbonyloxy]succinimide	2g	\$156.50	10g	\$649.00	25g	\$1,377.50	100g	\$3,862.50
		FW: 645.36	C21H14F15NO5									
C8F17	F017008	CAS: 556050-49-8		N-[4-(1H,1H,2H,2H-Perfluorodecyl)benzyloxycarbonyloxy]succinimide	2g	\$107.00	10g	\$448.00	25g	\$953.00	100g	\$3,049.60
		FW: 695.34	C22H14F17NO5									
C9F19	F019008			N-[4-(1H,1H,2H,2H-Perfluoro-9-methyldecyl)benzyloxycarbonyloxy]succinimide	2g	\$138.00	10g	\$577.00	25g	\$1,223.00	100g	\$3,450.50
		FW: 745.38	C23H14F19NO5									
C10F21	F021008			N-[4-(1H,1H,2H,2H-Perfluorododecyl)benzyloxycarbonyloxy]succinimide								
		FW: 795.39	C24H14F21NO5									

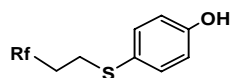
----- Developmental or limited availability - please inquire for pricing and lead time-----

**Thiol**

F-thiol is the solution phase equivalent of polymer-bound thiol and has been used as fluorous tags in parallel synthesis (1). F-thiol has also been used as a scavenger for various electrophiles (2) and as deprotecting agent for 2-nitrobenzenesulfonamides (3). F017023 has the appropriate fluorine content to be retained on F-SPE cartridges for easy separation.

1. Zhang, W. *Org. Lett.* **2003**, *5*, 1011-1013.
2. Lindsley, C.W.; Zhao, Z.; Leister, W.H. *Tetrahedron Lett.* **2002**, *43*, 4225-4228.
3. Christensen, C.; Clausen, R.P.; Begtrup, M.; Kristensen, J.L. *Tetrahedron Lett.* **2004**, *45*, 7991-7993.

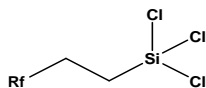
C8F17	F017023	CAS: 34143-74-3	<i>1H,1H,2H,2H-Perfluorodecane-1-thiol</i>								
		FW: 480.19	C10H5F17S	2g	\$31.00	10g	\$129.00	25g	\$270.50	100g	\$772.50

**FluoMar®**

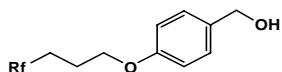
FluoMar® is the solution phase equivalent of Marshall resin used in combinatorial and parallel synthesis. FluoMar® has been used a stable acid activator for the formation of amides (1). F017027, the C8F17 analog of FluoMar® has appropriate fluorine content for the tagging of diverse organic molecules and is recommended for natural product or medicinal chemistry synthesis in combination with fluorous solid phase extraction. The other FluoMar® homologs are useful in fluorous HPLC and fluorous mixture synthesis.

1. Chen, C.H-T.; Zhang, W. *Org. Lett.* **2003**, *5*, 1015-1017.

C3F7	F007027		<i>4-(1H,1H,2H,2H-Perfluoropentyl-1-thio)-phenol</i>								
		FW: 322.26	C11H9F7OS	----- Developmental or limited availability - please inquire for pricing and lead time-----							
C4F9	F009027		<i>4-(1H,1H,2H,2H-Perfluorohexyl-1-thio)-phenol</i>								
		FW: 372.27	C12H9F9OS	2g	\$28.00	10g	\$113.50	25g	\$244.50	100g	\$669.50
C6F13	F013027		<i>4-(1H,1H,2H,2H-Perfluorooctyl-1-thio)-phenol</i>								
		FW: 472.29	C14H9F13OS	10g	\$118.50	25g	\$257.50	100g	\$721.00		
C7F15	F015027		<i>4-(1H,1H,2H,2H-perfluoro-7-methyloctyl-1-thio)-phenol</i>								
		FW: 522.3	C15H9F15OS	10g	\$242.00	25g	\$515.00	100g	\$1,442.00		
C8F17	F017027	CAS: 142623-70-9	<i>4-(1H,1H,2H,2H-Perfluorodecyl-1-thio)-phenol</i>								
		FW: 572.31	C16H9F17OS	10g	\$98.00	25g	\$219.00	100g	\$618.00		
C9F19	F019027		<i>4-(1H,1H,2H,2H-perfluoro-9-methyldecyl-1-thio)-phenol</i>								
		FW: 622.32	C17H9F19OS	10g	\$154.50	25g	\$335.00	100g	\$927.00		
C10F21	F021027		<i>4-(1H,1H,2H,2H-Perfluorododecyl-1-thio)-phenol</i>								
		FW: 672.33	C18H9F21OS	----- Developmental or limited availability - please inquire for pricing and lead time-----							

**Trichlorosilane**

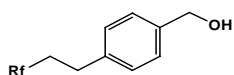
C8F17	F017230		<i>1H,1H,2H,2H-perfluorodecyltrichlorosilane</i>								
		FW:		2g	\$32.00	10g	\$80.00	25g	\$150.00	100g	\$480.00

**PMB OH**

F-PMB-OH is the fluorous equivalent of p-methoxybenzyl alcohol (PMB-OH) used in protecting alcohols in multi-step organic synthesis. F-PMB is deprotected either under acid or oxidizing conditions. The reactivity of F-PMB and conventional PMB are so similar that a DMB protecting group has been selectively cleaved in the presence of both F-PMB and PMB (1). F017006, the C8F17 analog has appropriate fluorine content for the tagging of diverse organic molecules and is recommended for natural product or medicinal chemistry synthesis in combination with fluorous solid phase extraction. The other homologs are useful in fluorous HPLC and fluorous mixture synthesis (2).

1. Curran, D.P.; Furukawa, T. *Org. Lett.* **2002**, *4*, 2233-2235.
2. Zhang, Q.; Lu, H.; Richard, C.; Curran, D.P. *J. Am. Chem. Soc.* **2004**, *126*, 36-37.

C3F7	F007006		<b>4-[3-(Perfluoropropyl)propyl-1-oxy]benzyl alcohol</b>							
	FW: 334.26	C13H13F7O2	---- Developmental or limited availability - please inquire for pricing and lead time----							
C4F9	F009006		<b>4-[3-(Perfluorobutyl)propyl-1-oxy]benzyl alcohol</b>							
	FW: 384.27	C14H13F9O2	2g	\$82.50	10g	\$345.00	25g	\$734.00	100g	\$2,348.80
C6F13	F013006		<b>4-[3-(Perfluorohexyl)propyl-1-oxy]benzyl alcohol</b>							
	FW: 484.29	C16H13F13O2	2g	\$109.00	10g	\$458.50	25g	\$965.50	100g	\$3,056.00
C7F15	F015006		<b>4-[3-(Perfluoroheptyl)propyl-1-oxy]benzyl alcohol</b>							
	FW: 534.3	C17H13F15O2	---- Developmental or limited availability - please inquire for pricing and lead time----							
C8F17	F017006		<b>4-[3-(Perfluorooctyl)propyl-1-oxy]benzyl alcohol</b>							
	FW: 584.31	C18H13F17O2	2g	\$66.00	10g	\$273.00	25g	\$579.50	100g	\$1,648.00

**Benzyl alcohol**

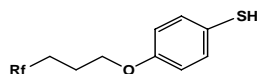
Fluorous benzyl alcohol is the fluorous equivalent of benzyl alcohol. Tagging of carboxylic acids and alcohols is conducted analogously to that of traditional benzyl alcohol. F017026, the C8F17 analog has appropriate fluorine content for the tagging of diverse organic molecules and is recommended for natural product or medicinal chemistry synthesis in combination with fluorous solid phase extraction. The other homologs are useful in fluorous HPLC and fluorous mixture synthesis.

1. Curran, D.P.; Oderaotoshi, Y. *Tetrahedron* **2001**, *57*, 5243-5253.

C3F7	F007026		<b>4-(1H,1H,2H,2H-Perfluoropentyl)benzyl alcohol</b>							
	FW: 304.23	C12H11F7O	2g	\$147.50	10g	\$613.00	25g	\$1,300.50	100g	\$3,656.50
C4F9	F009026		<b>4-(1H,1H,2H,2H-Perfluorohexyl)benzyl alcohol</b>							
	FW: 354.24	C13H11F9O	2g	\$107.00	10g	\$443.00	25g	\$940.00	100g	\$3,008.00
C6F13	F013026	CAS: 356055-76-0	<b>4-(1H,1H,2H,2H-Perfluorooctyl)benzyl alcohol</b>							
	FW: 454.24	C15H11F13O	2g	\$82.50	10g	\$345.00	25g	\$734.00	100g	\$2,348.80
C7F15	F015026		<b>4-(1H,1H,2H,2H-Perfluoro-7-methyloctyl)benzyl alcohol</b>							
	FW: 504.27	C16H11F15O	2g	\$130.00	10g	\$541.00	25g	\$1,159.00	100g	\$3,244.50
C8F17	F017026	CAS: 356055-77-1	<b>4-(1H,1H,2H,2H-Perfluorodecyl)benzyl alcohol</b>							
	FW: 554.28	C17H11F17O	2g	\$82.50	10g	\$340.00	25g	\$721.00	100g	\$2,307.20
C9F19	F019026		<b>4-(1H,1H,2H,2H-Perfluoro-9-methyldecyl)benzyl alcohol</b>							
	FW: 604.29	C18H11F19O	2g	\$108.00	10g	\$448.00	25g	\$953.00	100g	\$2,678.00
C10F21	F021026		<b>4-(1H,1H,2H,2H-Perfluorododecyl)benzyl alcohol</b>							
	FW: 654.3	C19H11F21O	---- Developmental or limited availability - please inquire for pricing and lead time----							

**4-[3-(perfluorooctyl)-propyl-1-oxy]-thiophenol**

---



Fluorous thiophenol designed for scavenging of alkylating agents, eg. alkyl halides

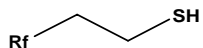
C8F17 F017159

FW: 586.28 C17H11F17OS

4-[3-(perfluorooctyl)propyl-1-oxy]thiophenol

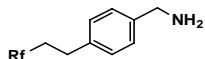
----- Developmental or limited availability - please inquire for pricing and lead time-----

## Nucleophilic Scavengers

**Thiol**

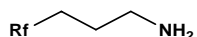
Thiols are good nucleophiles that have been used as covalent scavengers to rid product mixtures of excess halides and other electrophiles. F-Thiol is the solution phase equivalent of polymer-bound thiol scavengers. It has the advantage of reacting faster than its polymer counterpart.

C8F17	F017023	CAS: 34143-74-3	<i>1H,1H,2H,2H-Perfluorodecane-1-thiol</i>								
	FW: 480.19	C10H5F17S		2g	\$31.00	10g	\$129.00	25g	\$270.50	100g	\$772.50

**Benzylamine**

Nucleophilic scavenger for acid chlorides, isocyanates and sulfonyl chlorides

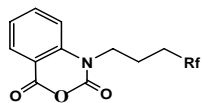
C8F17	F017030		<i>4-(1H,1H,2H,2H-Perfluorodecyl)benzylamine</i>								
	FW: 553.3	C17H12F17N		1g	\$78.50	2g	\$142.00	10g	\$659.00	25g	\$1,525.00

**Propylamine**

Nucleophilic scavenger for acid chlorides, isocyanates and sulfonyl chlorides

C8F17	F017031	CAS: 139175-50-1	<i>3-(Perfluorooctyl)propylamine</i>								
	FW: 477.2	C11H8F17N		2g	\$74.00	10g	\$309.00	25g	\$656.50	100g	\$1,854.00

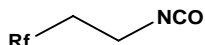
## Electrophilic Scavengers

**Isatoic anhydride**

Fluorous isatoic anhydride is a solution phase scavenger of nucleophiles such as amines and thiols and has been used in the solution phase parallel synthesis of urea, thiourea, and  $\beta$ -hydroxyamine analogs(1).

1. Zhang, W.; Chen, C. H.-T.; Nagashima, T. *Tetrahedron Lett.* **2003**, *44*, 2065-2068.

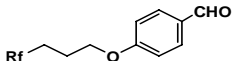
C8F17	F017028		1-[3-(Perfluorooctyl)propyl]-(1H-benzo[d][1,3]oxazine-2,4-dione								
	FW: 623.3	C19H10F17NO3		2g	\$97.00	10g	\$401.50	25g	\$850.00	100g	\$2,389.50

**Isocyanate**

Fluorous isocyanate is a solution-phase scavenger of nucleophiles such as amines and thiols and has been used in the solution phase parallel synthesis of urea, thiourea, and  $\beta$ -hydroxyamine analogs (1,2,3). F017032, the C8F17 analog, has appropriate fluorine content for the tagging of diverse organic molecules and is recommended for natural product or medicinal chemistry synthesis in combination with fluorous solid phase extraction. For the use of fluorous isocyanate in the tagging and enrichment of peptides in proteomics applications, please see the Bioreagents section.

1. Zhang, W.; Chen, C.H.-T.; Nagashima, T. *Tetrahedron Lett.* **2003**, *44*, 2065-2068.  
 2. Zhang, A.S.; Elmore, C.S.; Egan, M.A.; Melillo, D.G.; Dean, D.C.J. *Labeled Compounds & Radiopharmaceuticals* **2005**, *48*, 203-208.  
 3. Lindsley, C.W.; Zhao, Z.; Leister, W.H. *Tetrahedron Lett.* **2002**, *43*, 4225-4228.

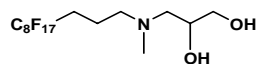
C8F17	F017032	CAS: 142010-50-2	2-(Perfluorooctyl)ethyl isocyanate										
	FW: 489.15	C11H4F17NO		1g	\$71.50	2g	\$130.00	10g	\$541.00	25g	\$1,146.00	100g	\$3,605.00

**Oxybenzaldehyde**

Fluorous Oxybenzaldehyde is a solution-phase scavenger for nucleophiles. Used to remove excess primary and secondary amines, organometallics and reducing agents.

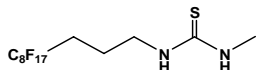
C8F17	F017036		4-[3-(Perfluorooctyl)propyl-1-oxy]benzaldehyde								
	FW: 582.27	C18H11F17O2		2g	\$66.00	10g	\$273.00	25g	\$579.50	100g	\$1,648.00

## Metal Scavengers

**Methylaminodiol**

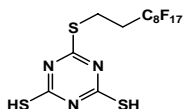
Fluorous methylaminodiol is used as a metal scavenger for Al and boronic acids.

C8F17 XP017157 3-[N-methyl-N-(3-perfluorooctylpropyl)]amino-1,2-propanediol  
 FW: 565.32 C15H16F17NO2 2g \$53.00 10g \$220.00 25g \$467.00

**Methyl thiourea**

Fluorous Methyl thiourea is used as metal scavenger for Ni(O), Pd(O), Pd(II), Pt, Rh and Ru.

C8F17 XP017160 1-[3-(perfluorooctyl)-propyl]-3-methyl thiourea  
 FW: 550.28 C13H11F17N2S 2g \$63.00 10g \$263.00 25g \$559.00

**2,4,6-trimercaptotriazine (TMT)**

Fluorous TMT is the solution-phase equivalent of 2,4,6-trimercaptotriazine designed to scavenge residual palladium from palladium-catalyzed reactions. Easily removed through fluorous solid phase extraction.

C8F17 XP017161 6-[2-(perfluorooctyl)-ethylthio]-1,3,5-triazine-2,4-dithiol (F-TMT)  
 FW: 623.28 C13H6F17N3S3 ----- Developmental or limited availability - please inquire for pricing and lead time-----

## Peptide + oligo reagents & tagged monomers

Fluorous techniques can be used with solid phase peptide synthesis (SPPS) to produce higher purity peptides by using a fluorous solid phase extraction (F-SPE) either in lieu of traditional reverse phase HPLC or as an easy prepurification prior to HPLC treatment. Two basic strategies have emerged; final N-terminal fluorous tagging and fluorous capping.

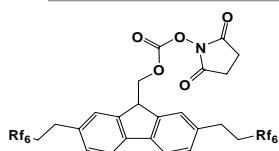
In the N-terminal fluorous tagging approach (1,2), the SPPS is conducted with capping using traditional strategies up to the penultimate coupling step. The final amino acid residue, N-protected with the appropriate fluorous tag, is then coupled. After cleavage from the resin, the fluorous tagged desired sequence is easily separated by F-SPE from the capped deletion sequences. Deprotection then provides the desired sequence. Alternatively, the entire sequence can be synthesized using conventional SPPS and the desired peptide fluorous tagged after the deprotection and just prior to cleavage from the resin. This approach has the advantage of requiring only a single fluorous tag at the end of the SPPS thereby minimizing the impact of the fluorous tag, both in terms of cost and synthetic modifications.

The second approach is fluorous capping with SPPS (3). Under this strategy, a fluorous capping agent is used between couplings to render all of the deletion sequences fluorous while the desired sequence remains unchanged. After cleavage from the resin, the undesired fluorous capped deletion sequences are separated from the desired sequence by F-SPE. Due to the repetitive nature inherent in fluorous capping, it is best suited for shorter peptide sequences or for those couplings which are particularly difficult and lead to large amounts of uncoupled product.

1. Filippov, D. V.; van Zoelen, D. J.; Oldfield, S. P.; van der Marel, G. A.; Overkleeft, H. S.; Drijfhout, J. W.; van Boom, J. H. *Tetrahedron Lett.* **2002**, *43*, 7809-7812.

2. de Visser, P. C.; van Helden, M.; Filippov, D. V.; van der Marel, G. A.; Drijfhout, J. W.; van Boom, J. H.; Noort, D.; Overkleeft, H. S. *Tetrahedron Lett.* **2003**, *44*, 9013-9016.

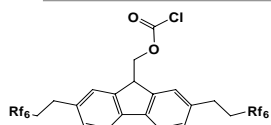
### Fmoc-Osu



F-Fmoc-OSu is the fluorous equivalent of conventional Fmoc. F-Fmoc is base labile and is detagged under similar conditions. F026005, the bis-C6F13 analog of F-Fmoc, has appropriate fluorine content for the tagging of diverse organic molecules and is recommended for N-terminal fluorous tagging with F-SPE purification. F-Fmoc tagged amino acids are also available.

C6F13	F026005		<i>N</i> -[2,7-Bis(1 <i>H</i> ,1 <i>H</i> ,2 <i>H</i> ,2 <i>H</i> -perfluorooctyl)-9-fluorenylmethoxycarbonyloxy]succinimide (F26 Fmoc-OSu)
	FW: 1029.5	C35H21F26NO5	1g \$98.00 2g \$160.00 10g \$560.00 25g \$1,100.00

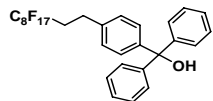
### Fmoc-Cl



Base labile protecting group/tag for nitrogens; fully compatible with conventional Fmoc chemistries

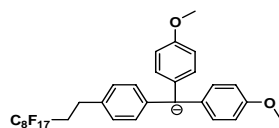
C6F13	F026229		2,7-Bis(1 <i>H</i> ,1 <i>H</i> ,2 <i>H</i> ,2 <i>H</i> -perfluorooctyl)-9-fluorenylmethoxycarbonyl chloride
	FW: 950.9	C31H17ClF26O2	1g \$95.00 2g \$155.00 10g \$550.00 25g \$1,070.00

### Trityl alcohol



F-Trt is the fluorous analog to traditional Trt and is used in the protection of amino acid side chains including Asn, Asp, Gln, Glu, His, Ser, Thr, Tyr.

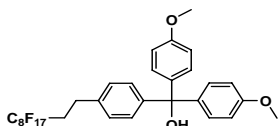
C8F17	F017062		1-[4-(1 <i>H</i> ,1 <i>H</i> ,2 <i>H</i> ,2 <i>H</i> -perfluorodecyl)phenyl]-1,1-diphenylmethanol (F17 Trityl-OH)
	FW: 706.27	C29H19F17O	2g \$125.00 10g \$415.00 25g \$880.00

**Dimethoxy trityl chloride**

Several fluorous versions of trityl protecting groups are available from FTI for the protection of alcohols, amines, and carboxylates. These include F-Tr, F-MMT, and F-DMT that are analogous to conventional trityl, monomethoxy trityl, and dimethoxy trityl. Each of the fluorous versions reacts analogously to its non-fluorous counterpart. Each of these groups are acid labile with the relative rate of deprotection being F-Tr<F-MMT<F-DMT. The F-DMT group has been used in oligonucleotide synthesis followed by purification by F-SPE (1).

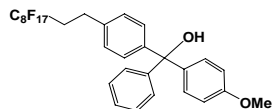
1. Pearson, W.H.; Berry, D.A.; Stoy, P.; Jung, K.-Y.; Sercel, A.D. J. Org. Chem. 2005, 70, 7114-7122.

C8F17 F017063 1,1-Di-(4-methoxyphenyl)-1-[4-(1H,1H,2H,2H-perfluorodecyl)phenyl]methyl chloride (F17 DMT-Cl)  
FW: 784.94 C31H22ClF17O2 2g \$120.00 10g \$400.00 25g \$850.00

**Dimethoxy trityl alcohol**

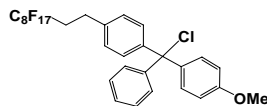
Acid labile protecting group/tag

C8F17 F017064 1,1-Di-(4-methoxyphenyl)-1-[4-(1H,1H,2H,2H-perfluorodecyl)phenyl]methanol (F17 DMT-OH)  
FW: 766.49 C31H23F17O3 2g \$85.00 10g \$290.00 25g \$610.00

**Monomethoxy trityl alcohol**

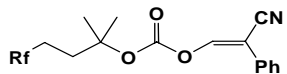
Acid labile protecting group/tag

C8F17 XP017234 1-(4-methoxyphenyl)-1-[4-(1H,1H,2H,2H-perfluorodecyl)phenyl]-1-phenylmethanol (F17-MMT)  
FW: 736.47 C30H21F17O2 2g \$130.00 10g \$435.00 25g \$925.00

**Monomethoxy trityl chloride**

Acid labile protecting group/tag

C8F17 XP017235 1-(4-methoxyphenyl)-1-[4-(1H,1H,2H,2H-perfluorodecyl)phenyl]-1-phenylmethyl chloride (F17-MMT-Cl)  
FW: 754.91 C30H20ClF17O 2g \$135.00 10g \$460.00 25g \$990.00

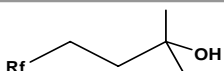
**Boc-ON**

F-Boc-ON is the fluorous equivalent of 2-(t-butoxycarbonyloxyimino)-2-phenylacetonitrile (BOC-ON) and is suitable for protecting amino side chains (His, Lys, Trp) or the alpha-N of amino acids for use in Boc based peptide synthesis. F-Boc is acid labile and has similar reactivity to conventional Boc. F017003, the C8F17 analog of F-Boc has the appropriate fluorine content for the tagging of diverse organic molecules and is recommended for natural product or medicinal chemistry synthesis in combination with fluorous solid phase extraction. The other F-Boc homologs are useful in fluorous HPLC and fluorous mixture synthesis. F-Boc tagged amino acids are also available.

C4F9 F009003 2-[2-(1H,1H,2H,2H-Perfluorohexyl)isopropoxycarbonyloxyimino]-2-phenylacetonitrile  
FW: 478.35 C18H15F9N2O3 2g \$66.00 10g \$278.00 25g \$592.50 100g \$1,648.00

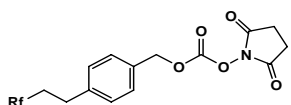
C6F13 F013003 2-[2-(1H,1H,2H,2H-Perfluorooctyl)isopropoxycarbonyloxyimino]-2-phenylacetonitrile  
FW: 578.37 C20H15F13N2O3 2g \$65.00 10g \$273.00 25g \$579.50 100g \$1,596.50

C8F17	F017003	CAS: 350716-42-6	2-[2-(1H,1H,2H,2H-Perfluorodecyl)isopropoxycarbonyloxyimino]-2-phenylacetonitrile	2g	\$61.00	10g	\$252.50	25g	\$541.00	100g	\$1,493.50
		FW: 678.36	C22H15F17N2O3								

**t-Butanol**

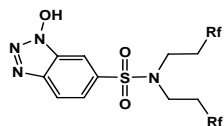
Can be used for side-chain protection of Cys, Thr, Tyr, Ser

C4F9	F009007	CAS: 269394-08-3	2-Methyl-4-perfluorobutyl-2-butanol	2g	\$30.00	10g	\$123.50	25g	\$257.50	100g	\$721.00
		FW: 306.2	C9H11F9O								
C6F13	F013007	CAS: 159142-65-1	2-Methyl-4-perfluorohexyl-2-butanol	2g	\$29.00	10g	\$118.50	25g	\$257.50	100g	\$721.00
		FW: 406.22	C11H11F13O								
C8F17	F017007	CAS: 141183-94-0	2-Methyl-4-perfluorooctyl-2-butanol	2g	\$24.50	10g	\$103.00	25g	\$219.00	100g	\$618.00
		FW: 506.22	C13H11F17O								

**F-Z-Osu**

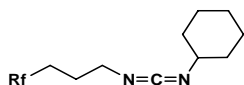
F-Z-Osu is the fluorous equivalent of benzyloxycarbonyl oxysuccinimide (Z-Osu) and is suitable for protecting amino side chains or the N-terminus in peptide synthesis. F-Z is acid labile. F017008, the C8F17 analog is recommended for most applications and is appropriate for use with fluorous solid phase extractions. The other F-Z-Osu homologs listed are useful in fluorous chromatography or fluorous mixture synthesis.

C4F9	F009008	FW: 495.33	C18H14F9NO5	N-[4-(1H,1H,2H,2H-Perfluorohexyl)benzyloxycarbonyloxy]succinimide	2g	\$120.50	10g	\$504.50	25g	\$1,068.50	100g	\$3,417.60
C6F13	F013008	CAS: 556050-48-7	C20H14F13NO5	N-[4-(1H,1H,2H,2H-Perfluorooctyl)benzyloxycarbonyloxy]succinimide	2g	\$105.00	10g	\$438.00	25g	\$927.00	100g	\$2,966.40
		FW: 595.32										
C8F17	F017008	CAS: 556050-49-8	C22H14F17NO5	N-[4-(1H,1H,2H,2H-Perfluorodecyl)benzyloxycarbonyloxy]succinimide	2g	\$107.00	10g	\$448.00	25g	\$953.00	100g	\$3,049.60
		FW: 695.34										

**HOBt**

Fluorous HOBt is the solution-phase equivalent of 1-hydroxybenzotriazole. Applications include an active ester reagent, coupling of acids and amines, and protecting group transfer.

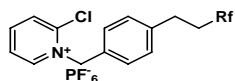
C7F15	F030075	FW: 1034.5	C26H16F30N4O3S	6-[N-(3-(Perfluorohexyl)propyl)-N-(3-(perfluorooctyl)propyl)aminosulfonyl]-1-hydroxybenzotriazole (F-HOBt)	1g	\$381.00	2g	\$761.00	10g	\$2,317.50
-------	---------	------------	----------------	--	----	----------	----	----------	-----	------------

**DCC**

Fluorous DCC is the solution-phase equivalent of N-cyclohexylcarbodiimide used as a coupling agent for amide and ester synthesis and other activated ester formation. Amide formation may be done with or without the use of F-HOBt.

C8F17	F017076	FW: 548.32	C18H17F17N2	N-Cyclohexyl-N'-[3-(perfluorooctyl)propyl]carbodiimide (F17-DCC)	----- Developmental or limited availability - please inquire for pricing and lead time-----					
-------	---------	------------	-------------	--	---	--	--	--	--	--

### Mukaiyama's Reagent

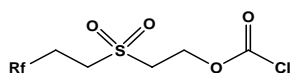


F-Pyridinium salt is the fluorous analog to 2-halopyridinium salts that have been widely used for the activation of carboxylic acids to form esters, amides, and lactones. Pyridinium salts are efficient coupling reagents for peptide synthesis and exhibit faster formation of coupling products than other commonly used coupling reagents including BOP-Cl, PyBroP, and PyCIU. The fluorous version is especially useful with HOBT to rapidly form activated acid as the corresponding benzotriazol ester (1). The pyridone by-product is easily removed from the desired product by F-SPE.

1. Nagashima, T.; Petro, M.J.; Zhang, W. *Tetrahedron Lett.* **2005**, *46*, 6585-6588.

C9F19	F019099	2-Chloro-1-[4-(1H,1H,2H,2H-perfluoro-9-methyldecyl)benzyl]pyridinium hexafluorophosphate (F-Mukaiyama's Reagent)										
	FW: 845.75	C23H14ClF25NP	1g	\$95.00	2g	\$183.00	10g	\$577.00	25g	\$1,377.50	100g	\$3,850.50

### Msc chloride

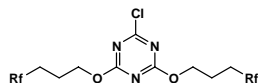


F-Msc-Cl is a base labile fluorous tag based on the Msc (methylsulfonylethoxycarbonyl) protecting group used for the N-protection of amines. Overkleeft used the F-Msc group in the N-terminal tagging of peptides synthesized using a Fmoc based SPPS strategy (1). The F-Msc tagged peptides were purified by either F-HPLC or F-SPE. The F-Msc group was removed by treatment with piperidine to provide the final peptide.

1. de Visser, P.C.; van Helden, M.; Filippov, D.V.; van der Marel, G.A.; Drijfhout, J.W.; van Boom, J.H.; Noort, D.; Overkleeft, H.S. *Tetrahedron Lett.* **2003**, *44*, 9013-9016.

C8F17	F017169	1H,1H,2H,2H-perfluorodecyl-sulfonylethyl chloroformate (F17-Msc-Cl)								
	FW: 618.66	C13H8ClF17O4S	Please inquire for availability							

### 2-chloro-4,6-dimethoxy-1,3,5-triazine (CDMT)

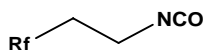


F-CDMT is a fluorous version of CDMT (2-chloro-4,6-dimethoxy-1,3,5-triazine) that has been extensively used as a coupling agent to form amines. CDMT is known to give good to high yields of coupling products between sterically hindered substrates. F-CDMT reacts analogously to CDMT with the added benefit that the triazone byproduct of the reaction can be readily removed either by F-SPE or fluorous liquid-liquid extraction. The formation of small peptides using F-CDMT has been reported (1) as has the use of F-CDMT in amide bond formation with plate-to-plate F-SPE using a 24 well plate(2).

1. Markowicz, M.W.; Dembinski, R. *Synthesis*, **2004**, 80-86.  
2. Zhang, W.; Yu, Y.; Nagashima, T. *J. Comb. Chem.* **2005**, *7*, 893-897.

C6F13	F026171	Bis-Rf6 2-chloro-4,6-dimethoxy-1,3,5-triazine (F-CDMT)								
	FW: 867.78	C21H12F26N3O2Cl	2g	\$108.00	10g	\$456.50	25g	\$955.50	100g	\$2,653.50
C8F17	F034171	Bis-Rf8 2-chloro-4,6-dimethoxy-1,3,5-triazine (F-CDMT)								
	FW: 1067.8	C25H12F34N3O2Cl	---- Developmental or limited availability - please inquire for pricing and lead time----							

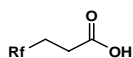
### Isocyanate



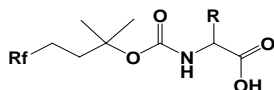
Fluorous isocyanate is a solution-phase scavenger of nucleophiles such as amines and thiols and has been used in the solution phase parallel synthesis of urea, thiourea, and  $\beta$ -hydroxyamine analogs (1,2,3). F017032, the C8F17 analog, has appropriate fluorine content for the tagging of diverse organic molecules and is recommended for natural product or medicinal chemistry synthesis in combination with fluorous solid phase extraction. For the use of fluorous isocyanate in the tagging and enrichment of peptides in proteomics applications, please see the Bioreagents section.

1. Zhang, W.; Chen, C.H.T.; Nagashima, T. *Tetrahedron Lett.* **2003**, *44*, 2065-2068.  
2. Zhang, A.S.; Elmore, C.S.; Egan, M.A.; Meillo, D.G.; Dean, D.C.J. *Labeled Compounds & Radiopharmaceuticals* **2005**, *48*, 203-208.  
3. Lindsley, C.W.; Zhao, Z.; Leister, W.H. *Tetrahedron Lett.* **2002**, *43*, 4225-4228.

C8F17	F017032	CAS: 142010-50-2	2-(Perfluorooctyl)ethyl isocyanate									
	FW: 489.15	C11H4F17NO	1g	\$71.50	2g	\$130.00	10g	\$541.00	25g	\$1,146.00	100g	\$3,605.00

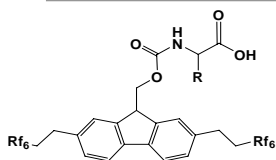
**Carboxylic Acid**

C4F9	F009081		<i>2H,2H,3H,3H-Perfluoroheptanoic acid</i>								
	FW: 292.05	C7H5F9O2		2g	\$105.00	10g	\$216.50	25g	\$463.50	100g	\$1,287.50
C6F13	F013081		<i>2H,2H,3H,3H-Perfluorononanoic acid</i>								
	FW: 392.05	C9H5F13O2		2g	\$103.00	10g	\$211.00	25g	\$450.50	100g	\$1,287.50
C8F17	F017081		<i>2H,2H,3H,3H-Perfluoroundecanoic acid</i>								
	FW: 492.05	C11H5F17O2		2g	\$87.00	10g	\$180.50	25g	\$373.50	100g	\$1,081.50

**F-Boc-protected amino acids**

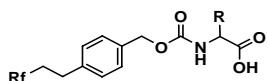
Amino acid monomers pre-protected with fluorous-tagged Boc on the backbone amine. Suitable for use as the N-terminal residue in preparation for fluorous purification of the sequence.

C8F17	F317101		<i>F-Boc protected Glycine</i>						
	FW: 609.01			2g	\$110.00	10g	\$380.00		
C8F17	F317102		<i>F-Boc protected L-Alanine</i>						
	FW: 623			2g	\$110.00	10g	\$380.00		
C8F17	F317103		<i>F-Boc protected L-Valine</i>						
	FW: 651.09			2g	\$110.00	10g	\$380.00		
C8F17	F317104		<i>F-Boc protected L-Leucine</i>						
	FW: 665.11			2g	\$110.00	10g	\$380.00		
C8F17	F317105		<i>F-Boc protected L-Isoleucine</i>						
	FW: 665.11			2g	\$110.00	10g	\$380.00		
C8F17	F317108		<i>F-Boc protected L-Phenylalanine</i>						
	FW: 699.13			2g	\$110.00	10g	\$380.00		

**F-Fmoc-protected amino acids**

Amino acid monomers pre-protected with fluorous-tagged Fmoc on the backbone amine. Suitable for use as the N-terminal residue in preparation for fluorous purification of the sequence.

C8F17	F526101		<i>F-Fmoc protected Glycine</i>						
	FW: 990.52			2g	\$195.00	10g	\$695.00		
C8F17	F526102		<i>F-Fmoc protected L-Alanine</i>						
	FW: 1004.5			2g	\$195.00	10g	\$695.00		
C8F17	F526103		<i>F-Fmoc protected L-Valine</i>						
	FW: 1032.6			2g	\$195.00	10g	\$695.00		
C8F17	F526104		<i>F-Fmoc protected L-Leucine</i>						
	FW: 1046.6			2g	\$195.00	10g	\$695.00		
C8F17	F526105		<i>F-Fmoc protected L-Isoleucine</i>						
	FW: 1046.6			2g	\$195.00	10g	\$695.00		
C8F17	F526108		<i>F-Fmoc protected L-Phenylalanine</i>						
	FW: 1080.6			2g	\$195.00	10g	\$695.00		

**F-Cbz-protected amino acids**

Amino acid monomers pre-protected with fluorous-tagged Cbz on the backbone amine. Suitable for use as the N-terminal residue in preparation for fluorous purification of the sequence.

C8F17	F817101		<i>N</i> -(F17 Cbz) Glycine				
	FW: 655.06	C20H14F17NO4		2g	\$140.00	10g	\$590.00
C8F17	F817102		<i>N</i> -(F17 Cbz) L-Alanine				
	FW: 669.08	C21H16F17NO4		2g	\$140.00	10g	\$590.00
C8F17	F817103		<i>N</i> -(F17 Cbz) L-Valine				
	FW: 697.11	C23H20F17NO4		2g	\$140.00	10g	\$590.00
C8F17	F817104		<i>N</i> -(F17 Cbz) L-Leucine				
	FW: 711.13	C24H22F17NO4		2g	\$140.00	10g	\$590.00
C8F17	F817105		<i>N</i> -(F17 Cbz) L-Isoleucine				
	FW: 711.13	C24H22F17NO4		2g	\$140.00	10g	\$590.00
C8F17	F817108		<i>N</i> -(F17 Cbz) L-Phenylalanine				
	FW: 745.11	C27H20F17NO4		2g	\$140.00	10g	\$590.00

Additional Amino Acids that can be Fluorous Tagged. Please inquire for pricing and availability. Let us know the amino acid and fluorous tag as well as the side chain protecting group, if applicable, that you prefer for your application.

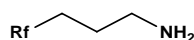
L-Tyrosine C <sub>9</sub> H <sub>14</sub> NO <sub>6</sub> FW: 181.19	L-Glutamic Acid C <sub>5</sub> H <sub>9</sub> NO <sub>4</sub> FW: 147.13	L-Proline C <sub>5</sub> H <sub>9</sub> NO <sub>2</sub> FW: 115.13	L-Threonine C <sub>4</sub> H <sub>9</sub> NO <sub>3</sub> FW: 119.12
L-Serine C <sub>3</sub> H <sub>7</sub> NO <sub>3</sub> FW: 105.09	L-Tryptophan C <sub>11</sub> H <sub>12</sub> N <sub>2</sub> O <sub>2</sub> FW: 204.23	L-Asparagine C <sub>4</sub> H <sub>8</sub> N <sub>2</sub> O <sub>3</sub> FW: 132.12	L-Glutamine C <sub>5</sub> H <sub>10</sub> N <sub>2</sub> O <sub>3</sub> FW: 146.14
	L-Aspartic Acid C <sub>4</sub> H <sub>7</sub> NO <sub>4</sub> FW: 133.10	L-Methionine C <sub>5</sub> H <sub>11</sub> NO <sub>2</sub> S FW: 149.21	

## Tagging Reagents for Proteomics

Fluorous tags can be used in conjunction with fluorous separation media to enrich complex biological derived samples. By using the appropriate fluorous tagging reagent specific functional group subsets can be targeted and analyzed by various MS methods. Applications include proteomics,<sup>1</sup> metabolomics,<sup>2</sup> and glycomics.<sup>3</sup>

1. Brittain, S. M.; Ficarro, S. B.; Brock, A.; Peters, E. C., *Nature Biotechnology* **2005**, *23*, 4, 463-468.
2. Go, E. P.; Uritboonthai, W.; Apon, J. V.; Trauger, S. A.; Nordstrom, A.; O'Maille, G.; Brittain, S. M.; Peters, E. C.; Siuzdak, G., *J. Proteome Res.* **2007**, *6*, 4, 1492-1499.
3. Arigi, E.A.; Li, Y.; Castle, S.A.; Levery, S.B. Poster presented at 5<sup>th</sup> ASMS Conference on Mass Spectrometry, Indianapolis IN, June 3-7 2007

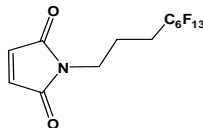
### Propylamine



Carbonyl reactive fluorous tag

C4F9	BR009031		3-(Perfluorobutyl)propylamine				
	FW: 277.13	C7H8F9N		50 mg	\$100.00	100 mg	\$180.00
C6F13	BR013031		3-(Perfluorohexyl)propylamine				
	FW: 377.15	C9H8F13N		50 mg	\$100.00	100 mg	\$180.00

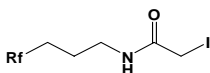
### Maleimide



Suitable for the enrichment of cysteinyl peptides

C4F9	BR009173		3-(perfluorobutyl)propyl-1-maleimide				
	FW: 357.18	C11H8F9NO2		50 mg	\$125.00	100 mg	\$215.00
C6F13	BR013173		3-(perfluorohexyl)propyl-1-maleimide				
	FW: 457.21	C13H8F13NO2		50 mg	\$125.00	100 mg	\$215.00
C8F17	BR017173		3-(perfluorooctyl)propyl-1-maleimide				
	FW: 557.21	C15H8F17NO2		50 mg	\$125.00	100 mg	\$215.00

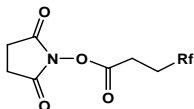
### Iodoacetamide



Suitable for the enrichment of cysteinyl peptides

C4F9	BR009174		N-[(3-perfluorobutyl)propyl] iodoacetamide				
	FW: 445.1	C9H9F9INO		50 mg	\$175.00	100 mg	\$325.00
C6F13	BR013174		N-[(3-perfluorohexyl)propyl] iodoacetamide				
	FW: 545.09	C11H9F13INO		50 mg	\$175.00	100 mg	\$325.00
C8F17	BR017174		N-[(3-perfluorooctyl)propyl] iodoacetamide				
	FW: 645.1	C13H9F17INO		50 mg	\$175.00	100 mg	\$325.00

### NHS Ester

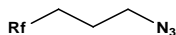


Free amine reactive fluorous tag

C4F9	BR009175		N-Succinimidyl 3-perfluorobutylpropionate				
	FW: 389.18	C11H8F9NO4		50 mg	\$125.00	100 mg	\$225.00
C6F13	BR013175		N-Succinimidyl 3-perfluorohexylpropionate				
	FW: 489.18	C13H8F13NO4		50 mg	\$125.00	100 mg	\$225.00

C8F17 BR017175 *N*-Succinimidyl 3-perfluorooctylpropionate  
 FW: 589.21 C15H8F17NO2 50 mg \$125.00 100 mg \$225.00

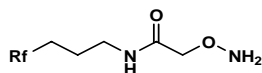
### Propylazide



C6F13 BR013190 *3*-perfluorohexyl-propylazide  
 FW: 403.16 C9H6F13N3 50 mg \$120.00 100 mg \$200.00

C8F17 BR017190 *3*-perfluorooctyl-propylazide  
 FW: 503.18 C11H6F17N3 50 mg \$120.00 100 mg \$200.00

### Aminoxyacetamide

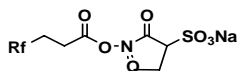


C4F9 BR009204 *2*-aminoxy-*N*-(3-perfluorobutyl-propyl)-acetamide  
 FW: 350.19 C9H11F9N2O2 50 mg \$135.00 100 mg \$220.00

C6F13 BR013204 *2*-Aminoxy-*N*-(3-perfluorohexyl)propyl)-acetamide  
 FW: 450.2 C11H11F13N2O2 50 mg \$135.00 100 mg \$220.00

C8F17 BR017204 *2*-aminoxy-*N*-(3-perfluorooctylpropyl)-acetamide  
 FW: 550.21 C13H11F17N2O2 50 mg \$135.00 100 mg \$220.00

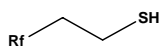
### *N*-3-sulfo-succinimidyl-perfluoroalkyl sodium salt



C6F13 BR013206 *N*-3-sulfo-succinimidyl-2*H*,2*H*,3*H*,3*H*-perfluorononoate sodium salt  
 FW: 445.14 C10H4F13N3O2 50 mg \$325.00 100 mg \$600.00

C8F17 BR017206 *N*-3-sulfo-succinimidyl-2*H*,2*H*,3*H*,3*H*-perfluoroundecanoate sodium salt  
 FW: 545.15 C12H4F17N3O2 50 mg \$325.00 100 mg \$600.00

### Thiol



C4F9 BR009300 *1H*,*1H*,*2H*,*2H*-Perfluorohexane-1-thiol  
 FW: 280.15 C6H5F9S 100 mg \$65.00

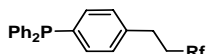
C6F13 BR013300 *1H*,*1H*,*2H*,*2H*-Perfluorooctane-1-thiol  
 FW: 380.17 C8H5F13S 100 mg \$65.00

## Reagents &amp; Catalysts - Phosphines

Fluorous phosphines are equivalent to conventional triphenylphosphine in a number of applications, including Staudinger (1), Wittig (2), Aza-Wittig (3), and Mitsunobu (4) reactions. In addition fluorous phosphines have been extensively used as metal ligands in fluorous biphasic catalysis (5) and fluorous thermomorphic applications (6). Depending on the number of length of the fluorous ponytails, fluorous phosphines and their oxides can be easily removed using either fluorous solid phase extraction or fluorous liquid-liquid extraction. Please contact FTI for assistance in selecting the most suitable fluorous phosphine for your application.

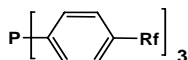
1. Lindsley, C. W.; Zhao, Z.; Newton, R. C.; Leister, W. H.; Strauss, K. A. *Tetrahedron Lett.* **2002**, *43*, 4467-4470.
2. Soos, T.; Bennett, B. L.; Rutherford, D.; Barthelemy, L. P.; Gladysz, J. A. *Organometallics*, **2001**, *20*, 3079-3086.
3. Barthelemy, S.; Schneider, S.; Bannwarth, W. *Tetrahedron Lett.* **2002**, *43*, 807-810.
4. Dandapani, S.; Curran, D. P. *J. Org. Chem.* **2004**, *69*, 8751-8757.
5. See Sections 10.8-10.10 in *Handbook of Fluorous Chemistry*, **2004**, 257-288.
6. Wende, M.; Gladysz, J. A. *J. Am. Chem. Soc.* **2003**, *125*, 5861-5872.

## Phosphines - single, ethylene spacer



C8F17	F017039	CAS: 462996-04-9	<i>Diphenyl-[4-(1H,1H,2H,2H-perfluorodecyl)phenyl] phosphine</i>	1g	\$56.00	2g	\$102.00	10g	\$396.50	25g	\$875.50	100g	\$3,322.00
		FW: 708.39	C28H18F17P										

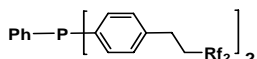
## Phosphines - tris, no spacer



See F0xx039. Various sizes and numbers of tags are available to expand performance range; contact FTI for assistance in selecting the most suitable fluorous TPP for your application.

C6F13	F039038	CAS: 193197-68-1	<i>Tris[4-(perfluorohexyl)phenyl]phosphine</i>										
		FW: 1216.5	C36H12F39P										
C8F17	F051038	CAS: 284472-92-0	<i>Tris[4-(perfluorooctyl)phenyl]phosphine</i>										
		FW: 1516.5	C42H12F51P										

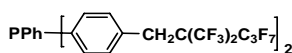
## Phosphines - bis, ethylene spacer



See F0xx039. Various sizes and numbers of tags are available to expand performance range; contact FTI for assistance in selecting the most suitable fluorous TPP for your application.

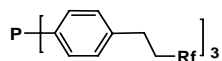
C6F13	F026040	CAS: 290827-94-0	<i>Bis[4-(1H,1H,2H,2H-perfluorooctyl)phenyl]phenylphosphine</i>	1g	\$63.00	2g	\$114.50	10g	\$479.00	25g	\$1,017.00
		FW: 954.48	C34H21F26P								
C8F17	F034040		<i>Bis[4-(1H,1H,2H,2H-perfluoro-7-decyl)phenyl]phenylphosphine</i>	1g	\$86.00	2g	\$155.50	10g	\$649.00	25g	\$1,377.50
		FW: 1154.5	C38H21F34P								

## Phosphines - bis, branched



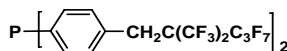
See F0xx039. Various sizes and numbers of tags are available to expand performance range; contact FTI for assistance in selecting the most suitable fluorous TPP for your application.

C6F13	F026041	CAS: 322647-83-6	<i>Bis[4-(1H,1H,2,2-bis(trifluoromethyl)perfluoropentyl)phenyl]phenylphosphine</i>	1g	\$99.00	2g	\$180.50	10g	\$579.50	25g	\$1,300.50	100g	\$4,635.00
		FW: 926.49	C32H17F26P										

**Phosphines - tris, ethylene spacer**

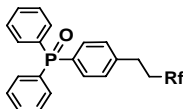
See F0xx039. Various sizes and numbers of tags are available to expand performance range; contact FTI for assistance in selecting the most suitable fluoruous TPP for your application.

C6F13	F039042	CAS: 219985-31-6	<i>Tris[4-(1H,1H,2H,2H-perfluorooctyl)phenyl]phosphine</i>								
	FW: 1300.5	C42H24F39P		1g	\$74.00	2g	\$135.00	10g	\$561.50	25g	\$1,197.50
C8F17	F051042	CAS: 32549-92-5	<i>Tris[4-(1H, 1H, 2H, 2H-perfluorodecyl)phenyl]phosphine</i>								
	FW: 1600.6	C48H24F51P		2g	\$133.00	10g	\$556.00	25g	\$1,184.50		

**Phosphines - tris, branched**

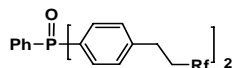
See F0xx039. Various sizes and numbers of tags are available to expand performance range; contact FTI for assistance in selecting the most suitable fluoruous TPP for your application.

C6F13	F039043	CAS: 322647-82-5	<i>Tris[4-(1H,1H-2,2-bis(trifluoromethyl)perfluoropentyl)phenyl]phosphine</i>								
	FW: 1258.5	C39H18F39P		----- Developmental or limited availability - please inquire for pricing and lead time-----							

**Phosphine oxide - single, ethylene spacer**

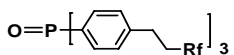
See F0xx039. Various sizes and numbers of tags are available to expand performance range; contact FTI for assistance in selecting the most suitable fluoruous TPP for your application.

C8F17	F017057		<i>Diphenyl-4-(1H,1H,2H,2H-perfluorodecyl)phenyl]phosphine oxide</i>								
	FW: 724.43	C28H18F17OP		1g	\$62.50	2g	\$113.50	10g	\$474.00	25g	\$1,004.50

**Phosphine oxide - bis, ethylene spacer**

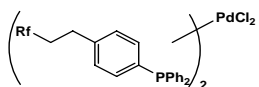
See F0xx039. Various sizes and numbers of tags are available to expand performance range; contact FTI for assistance in selecting the most suitable fluoruous TPP for your application.

C6F13	F026058		<i>Bis[4-(1H,1H,2H,2H-perfluorooctyl)phenyl]phenylphosphine oxide</i>								
	FW: 970.52	C34H21F26OP		2g	\$79.50	10g	\$329.50	25g	\$695.50		
C8F17	F034058		<i>Bis[4-(1H,1H,2H,2H-perfluorodecyl)phenyl]phenylphosphine oxide</i>								
	FW: 1170.5	C38H21F34OP		2g	\$76.00	10g	\$319.50	25g	\$682.50	100g	\$1,905.50

**Phosphine oxide - tris, ethylene spacer**

See F0xx039. Various sizes and numbers of tags are available to expand performance range; contact FTI for assistance in selecting the most suitable fluoruous TPP for your application.

C6F13	F039060		<i>Tris[4-(1H,1H,2H,2H-perfluorooctyl)phenyl]phosphine oxide</i>								
	FW: 1316.7	C42H24F39OP		----- Developmental or limited availability - please inquire for pricing and lead time-----							
C8F17	F051060		<i>Tris[4-(1H,1H,2H,2H-perfluorodecyl)phenyl]phosphine oxide</i>								
	FW: 1616.6	C48H24F51OP		2g	\$94.00						

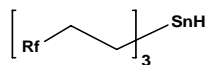
**PPH<sub>3</sub>-PdCl<sub>2</sub>**

The fluorous version of bis(triphenylphosphine) palladium (II) chloride behaves similarly to its non-fluorous counterparts and is compatible with a variety of Pd catalyzed reactions, including Heck, Suzuki, and Sonogashira couplings (1). The catalyst and ligand can then be separated using fluorous solid phase extraction.

1. Schneider, S.; Tzschucke, C.C.; Bonnwarth, W. *Handbook of Fluorous Chemistry*, 2004, 257-272.

C8F17 F034092 *Bis[Diphenyl-[4-(1H,1H,2H,2H-perfluorodecyl)phenyl]phosphine]palladium(II) chloride*  
 FW: 1594.2 C56H36Cl<sub>2</sub>F34P<sub>2</sub>PD 100 mg \$97.50 2g \$534.50 10g \$2,225.00

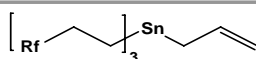
## Reagents &amp; Catalysts - Tin

**Tin hydride**

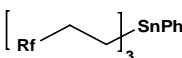
Fluorous tin hydride has similar reactivity to tributyl tin hydride, but with the benefit of allowing facile removal of tin byproducts from the desired product either by fluorous solid phase extraction or liquid-liquid extraction. Fluorous tin hydride can be used in a number of reactions including tin mediated free radical reactions and hydrostannylation (1).

1. Curran, D. P.; Hadida, S.; Kim, S. Y.; Luo, Z. Y. *J. Am. Chem. Soc.* **1999**, *121*, 6607-6615.

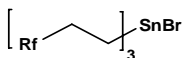
C4F9	F027048	CAS: 240497-26-1	<i>Tris(1H,1H,2H,2H-perfluorohexyl)tin hydride</i>	2g	\$155.50	10g	\$649.00	25g	\$1,377.50
		FW: 860.99	C18H13F27Sn						
C6F13	F039048	CAS: 175354-32-2	<i>Tris(1H,1H,2H,2H-perfluorooctyl)tin hydride</i>	2g	\$145.00	10g	\$602.50	25g	\$1,287.50
		FW: 1161	C24H13F39Sn						

**Allyl tin - ethylene spacer**

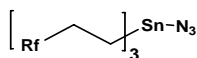
C4F9	F027045	CAS: 215186-99-5	<i>Tris(1H,1H,2H,2H-perfluorohexyl)allyl tin</i>	2g	\$166.00	10g	\$690.00	25g	\$1,468.00
		FW: 901.01	C21H17F27Sn						
C6F13	F039045	CAS: 192212-66-1	<i>Tris(1H,1H,2H,2H-perfluorooctyl)allyl tin</i>	2g	\$184.50	10g	\$767.50	25g	\$1,635.00
		FW: 1201.1	C27H17F39Sn						

**Phenyl tin - ethylene spacer**

C4F9	F027047	CAS: 240497-36-3	<i>Tris(1H,1H,2H,2H-perfluorohexyl)phenyl tin</i>	2g	\$64.00	10g	\$268.00	25g	\$566.50	100g	\$1,596.50
		FW: 937.12	C24H17F27Sn								
C6F13	F039047	CAS: 175354-30-0	<i>Tris(1H,1H,2H,2H-perfluorooctyl)phenyl tin</i>	2g	\$59.50	10g	\$247.00	25g	\$528.00	100g	\$1,493.50
		FW: 1237.2	C30H17F39Sn								

**Tin bromide**

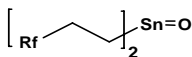
C4F9	F027049	CAS: 240497-37-4	<i>Tris(1H,1H,2H,2H-perfluorohexyl)tin bromide</i>	2g	\$96.00	10g	\$401.50	25g	\$850.00
		FW: 939.6	C18H12BrF27Sn						
C6F13	F039049	CAS: 175354-31-1	<i>Tris(1H,1H,2H,2H-perfluorooctyl)tin bromide</i>	2g	\$90.50	10g	\$376.00	25g	\$798.50
		FW: 1239.6	C24H12BrF39Sn						

**Tin azide**

Fluorous tin azide has been used as a substitute for tributyl tin azide in the conversion of nitriles to tetrazoles. F-Tin azide allows for the facile separation of the tin byproducts from the organic products by fluorous solid phase extraction or fluorous liquid-liquid extraction.

1. Curran, D. P.; Hadida, S.; Kim, S. Y. *Tetrahedron*, **1999**, *55*, 8997-9006.

C6F13	F039050	CAS: 201740-73-0	<i>Tris(1H,1H,2H,2H-perfluorooctyl)tin azide</i>	2g	\$142.00	10g	\$592.50	25g	\$1,249.00
		FW: 1202	C24H12F39N3Sn						

**Tin oxide**

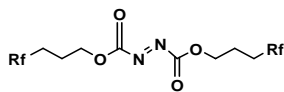
Fluorous tin oxide has been reported as an effective catalyst for the selective sulfonylation of 1,2 diols (1), intermolecular transesterification (2), and microwave accelerated macrolactonization (3). When employed under microwave conditions, the fluorous tin oxide was found to provide better yields than other organic tin oxide or distannoxane species. In all cases, the tin residues were then removed in >99% by F-SPE.

1. Bucher, B.; Curran, D. P. *Tetrahedron Lett.* **2000**, *41*, 9617-9621.
2. Kesavan, S.; Su, Q.; Shao, J.; Porco, J. A., Jr.; Panek, J. S. *Org. Lett.* **2005**, *7*, 4435-4438.
3. Beeler, A. B.; Acquilano, D. E.; Su, Q.; Yan, F.; Roth, B. L.; Panek, J. S.; Porco, J. A., *J. Comb. Chem.* **2005**, *7*, 673-681.

C6F13	F026051	CAS: 324063-66-3	<i>Bis(1H,1H,2H,2H-perfluorooctyl)tin oxide</i>								
	FW: 828.89	C16H8F26OSn		2g	\$91.50	10g	\$381.00	25g	\$811.00	100g	\$2,593.50

## Reagents &amp; Catalysts - Other

## DIAD

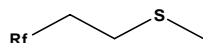


F-DIAD is the fluorinated equivalent of DIAD or DEAD and can be used in Mitsunobu reactions in conjunction with an appropriate phosphine. The phosphine can be traditional triphenylphosphine, a fluorinated phosphine, or even a solid supported phosphine. When used together with the appropriate fluorinated phosphine, a single fluorinated separation, either F-SPE or liquid-liquid extraction, can effect separation of both the phosphine oxide and the hydrazine byproducts. A range of acidic nucleophiles including carboxylic acids, phenols, and phthalimides can be used (1-3). In addition the F-DIAD is thermally more stable than DIAD or DEAD.

1. Dandapani, S.; Curran, D. P. *Tetrahedron*, **2002**, *58*, 3855-3864.
2. Dobbs, A. P.; McGregor-Johnson, C. *Tetrahedron Lett.* **2002**, *43*, 2807.
3. Dandapani, S.; Curran, D. P. *J. Org. Chem.* **2004**, *69*, 8751-8757.

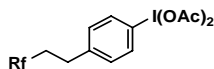
C6F13	F026100	CAS: 462996-01-6	<i>Bis(1H,1H,2H,2H,3H,3H-perfluorononyl)azodicarboxylate</i>										
	FW: 838.29	C20H12F26N2O4		1g	\$65.50	2g	\$118.50	10g	\$463.50	25g	\$1,004.50	100g	\$2,826.50

## Dimethyl sulfide



C4F9	F009067		<i>Methyl (1H,1H,2H,2H-perfluorohexyl)-sulfide</i>									
	FW: 294.18	C7H7F9S		----- Developmental or limited availability - please inquire for pricing and lead time-----								
C6F13	F013067		<i>Methyl (1H,1H,2H,2H-perfluorooctyl)-sulfide</i>									
	FW: 394.16	C9H7F13S		----- Developmental or limited availability - please inquire for pricing and lead time-----								

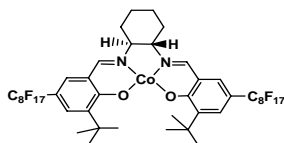
## Diacetoxiodobenzene



F-DAIB is the fluorinated equivalent to DAIB and can be used as a hypervalent iodonium oxidant under conditions used with DAIB. For example, F-DAIB has been used as the stoichiometric oxidant with catalytic TEMPO to oxidize primary amines to aldehydes. F-SPE then affords a convenient method to remove the resultant iodobenzene byproducts.

C8F17	F017072		<i>4-(1H,1H,2H,2H-Perfluorodecyl)-1-(diacetoxiodo)benzene</i>								
	FW: 768.21	C20H14F17IO4		2g	\$205.00	10g	\$855.00	25g	\$1,815.50	100g	\$5,098.50

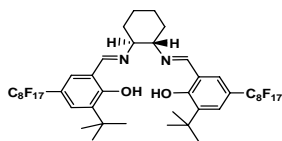
## Salen-Co complex



Fluorinated Salen-Co complex has been reported for the kinetic resolution of terminal epoxides. The fluorinated version allows these reactions to be conducted under fluorinated biphasic conditions providing a ready method for recovery and reuse of the catalyst (1,2). Alternatively, the ligand and metal complex can be removed using F-SPE. For optically pure versions of F034090, please contact FTI.

1. Cavazzini, M.; Quici, S.; Pozzi, G. *Tetrahedron*, **2002**, *58*, 3943-3949
2. Shepperson, I.; Cavazzini, M.; Pozzi, G.; Quici, S. *J. Fluorine Chem.* **2004**, *125*, 175-180.

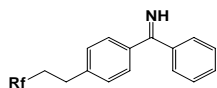
C8F17	F034090		<i>trans-1,2-Cyclohexanediamino-N,N'-bis[3-t-butyl-5-(perfluorooctyl)salicylidene]cobalt (II)</i>								
	FW: 1327.6	C44H34CoF34N2O2		1g	\$180.50	2g	\$340.00				

**Salen (ligand only)**

The fluorous salen ligand can be used to form either cobalt or manganese complexes for various synthetic transformations, including the kinetic resolution of epoxides (1), oxidation of sulfides (2), and epoxidation of alkenes (3). The ligands and metal complexes can be used under fluorous biphasic conditions for recovery and reuse. Alternatively, the ligand and metal complex can be removed using F-SPE. For optically pure versions of F034091, please contact FTI.

1. Shepperson, I.; Cavazzini, M.; Pozzi, G.; Quici, S. *J. Fluorine Chem.* **2004**, *125*, 175-180.
2. Cavazzini, M.; Pozzi, G.; Quici, S.; Shepperson, I. *J. Mol. Cat. A.* **2003**, *204-205*, 433-441.
3. Cavazzini, M.; Manfredi, A.; Montanari, F.; Quici, S.; Pozzi, G. *European J. Org. Chem.* **2001**, 4639-4649.

C8F17 F034091 (*±*)-*trans*-1,2-Cyclohexanediamino-*N,N'*-bis[3-*t*-butyl-5-(perfluorooctyl)salicylidene]  
 FW: 1270.7 C44H36F34N2O2 1g \$154.50 2g \$288.50

**Benzophenone imine**

Useful for aniline synthesis by Buchwald amination

1. Cioffi, C.L.; Berlin, M.L.; Herr, R.J. *Synlett*, 2004, 841.

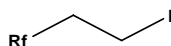
C8F17 F017069 (4-(1*H*,1*H*,2*H*,2*H*-perfluorodecyl)phenyl)phenylmethanimine (F17 Benzophenone Imine)  
 FW: 627.34 C23H14F17N 2g \$160.00 10g \$550.00 25g \$1,035.00 100g \$3,300.00

## Precursors &amp; Misc Compounds

## Perfluoroalkyl iodides

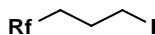
RfI										
C3F7	F007000 FW: 295.93 C3F7I	Perfluoropropyl iodide			25g	\$77.50	100g	\$206.00		
C4F9	F009000 CAS: 423-39-2 FW: 345.94 C4F9I	Perfluorobutyl iodide			25g	\$64.50	100g	\$154.50		
C6F13	F013000 CAS: 355-43-1 FW: 445.94 C6F13I	Perfluorohexyl iodide			25g	\$26.00	100g	\$51.50		
C7F15	F015000 FW: 495.97 C7F15I	Perfluoroheptyl iodide	2g	\$41.00	10g	\$170.00	25g	\$360.50	100g	\$1,030.00
C8F17	F017000 CAS: 507-63-1 FW: 545.96 C8F17I	Perfluorooctyl iodide			25g	\$26.00	100g	\$51.50		
C10F21	F021000 CAS: 423-62-1 FW: 646 C10F21I	Perfluorodecyl iodide	2g	\$16.50	10g	\$67.00	25g	\$141.50	100g	\$412.00

## Ethyl iodides

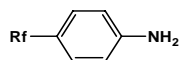


C3F7	F007001 CAS: 1513-88-8 FW: 323.98 C5H4F7I	1H,1H,2H,2H-Perfluoropentyl iodide			10g	\$77.50	25g	\$167.50	100g	\$463.50
C4F9	F009001 CAS: 2043-55-2 FW: 373.98 C6H4F9I	1H,1H,2H,2H-Perfluorohexyl iodide			10g	\$31.00	25g	\$64.50	100g	\$206.00
C6F13	F013001 CAS: 2043-57-4 FW: 474.01 C8H4F13I	1H,1H,2H,2H-Perfluorooctyl iodide			10g	\$26.00	25g	\$51.50	100g	\$154.50
C7F15	F015001 CAS: 335-58-0 FW: 524.01 C9H4F15I	1H,1H,2H,2H-Perfluoro-7-methyloctyl iodide			10g	\$92.50	25g	\$206.00	100g	\$566.50
C8F17	F017001 CAS: 2043-53-0 FW: 574.03 C10H4F17I	1H,1H,2H,2H-Perfluorodecyl iodide			10g	\$26.00	25g	\$64.50	100g	\$154.50
C9F19	F019001 CAS: 40678-31-7 FW: 624.02 C11H4F19I	1H,1H,2H,2H-Perfluoro-9-methyldecyl iodide			10g	\$46.50	25g	\$103.00	100g	\$257.50
C10F21	F021001 CAS: 2043-54-1 FW: 674.03 C12H4F21I	1H,1H,2H,2H-Perfluorododecyl iodide			10g	\$62.00	25g	\$129.00	100g	\$360.50

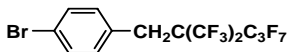
## Propyl iodides



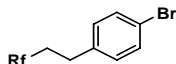
C3F7	F007002 FW: 338.02 C6H6F7I	3-(Perfluoropropyl)propyl iodide	----- Developmental or limited availability - please inquire for pricing and lead time-----							
C4F9	F009002 CAS: 183547-74-2 FW: 388.02 C7H6F9I	3-(Perfluorobutyl)propyl iodide	2g	\$55.50	10g	\$232.00	25g	\$489.50	100g	\$1,390.50
C6F13	F013002 CAS: 89889-20-3 FW: 488.04 C9H6F13I	3-(Perfluorohexyl)propyl iodide	2g	\$61.00	10g	\$252.50	25g	\$541.00	100g	\$1,493.50
C7F15	F015002 FW: 538.06 C10H6F15I	3-(Perfluoroheptyl)propyl iodide	----- Developmental or limited availability - please inquire for pricing and lead time-----							
C8F17	F017002 CAS: 200112-75-0 FW: 588.07 C11H6F17I	3-(Perfluorooctyl)propyl iodide	2g	\$41.00	10g	\$170.00	25g	\$360.50	100g	\$1,030.00

**Aniline**

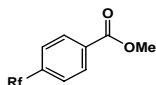
C6F13	F013017	CAS: 139613-90-4	4-(Perfluorohexyl)aniline				
		FW: 411.18	C12H6F13N	----- Developmental or limited availability - please inquire for pricing and lead time-----			
C8F17	F017017		4-(Perfluorooctyl)aniline				
		FW: 526.21	C15H7F17N	2g	\$60.00	10g	\$198.00

**Bromobenzene - branched Rf**

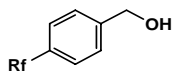
C6F13	F013015	CAS: 149068-60-0	1-Bromo-4-(1H,1H-perfluoro-2,2-dimethylpentyl)benzene				
		FW: 489.07	C13H6BrF13	----- Developmental or limited availability - please inquire for pricing and lead time-----			

**Bromobenzene - ethylene spacer**

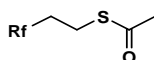
C6F13	F013018	CAS: 195324-87-9	1-Bromo-4-(1H,1H,2H,2H-perfluorooctyl)benzene				
		FW: 503.12	C14H8BrF13	10g	\$283.50	25g	\$605.00
				100g	\$1,699.50		
C8F17	F017018	CAS: 195324-88-0	1-Bromo-4-(1H,1H,2H,2H-perfluoropentyl)benzene				
		FW: 603.12	C16H8BrF17	10g	\$247.00	25g	\$528.00
				100g	\$1,493.50		

**Methyl Benzoate - no spacer**

C8F17	F017016	CAS: 80791-12-4	Methyl 4-(perfluorooctyl)benzoate				
		FW: 554.22	C16H7F17O2	----- Developmental or limited availability - please inquire for pricing and lead time-----			

**Benzyl OH (no spacer)**

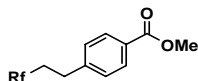
C8F17	F017019	CAS: 163114-33-8	4-(Perfluorooctyl)benzyl alcohol				
		FW: 526.21	C15H7F17O	----- Developmental or limited availability - please inquire for pricing and lead time-----			

**Thioacetate**

C4F9	F009022		S-(1H,1H,2H,2H-Perfluorohexyl) thioacetate				
		FW: 322.23	C8H7F9OS	10g	\$134.00	25g	\$283.50
				100g	\$824.00		
C6F13	F013022	CAS: 213681-67-5	S-(1H,1H,2H,2H- Perfluorooctyl) Thioacetate				
		FW: 422.23	C10H7F13OS	10g	\$62.00	25g	\$129.00
				100g	\$360.50		

C7F15	F015022		S-(1H,1H,2H,2H-Perfluoro-7-methyloctyl) thioacetate						
	FW: 472.23	C11H7F15OS		10g	\$113.50	25g	\$244.50	100g	\$669.50
C8F17	F017022	CAS: 125640-21-3	S-(1H,1H,2H,2H-Perfluorodecyl) Thioacetate						
	FW: 522.23	C12H7F17OS		10g	\$56.50	25g	\$116.00	100g	\$309.00
C9F19	F019022		S-(1H,1H,2H,2H-Perfluoro-9-methyldecyl) thioacetate						
	FW: 572.23	C13H7F19OS		10g	\$72.00	25g	\$154.50	100g	\$412.00
C10F21	F021022		S-(1H,1H,2H,2H-Perfluorododecane) thioacetate						
	FW: 622.23	C14H7F21OS		10g	\$62.00	25g	\$129.00	100g	\$360.50

### Benzoates (ethylene spacer)



C3F7	F007025		Methyl 4-(1H,1H,2H,2H-perfluoropentyl)benzoate						
	FW: 332.24	C13H11F7O2		10g	\$350.00	25g	\$747.00	100g	\$2,060.00
C4F9	F009025		Methyl 4-(1H,1H,2H,2H-perfluorohexyl)benzoate						
	FW: 382.24	C14H11F9O2		10g	\$221.50	25g	\$476.50	100g	\$1,339.00
C6F13	F013025		Methyl 4-(1H,1H,2H,2H-perfluorooctyl)benzoate						
	FW: 482.27	C16H11F13O2		10g	\$278.00	25g	\$592.50	100g	\$1,648.00
C7F15	F015025		Methyl 4-(1H,1H,2H,2H-perfluoro-7-methyloctyl)benzoate						
	FW: 532.28	C17H11F15O2		10g	\$314.00	25g	\$669.50	100g	\$1,854.00
C8F17	F017025		Methyl 4-(1H,1H,2H,2H-perfluorodecyl)benzoate						
	FW: 582.45	C18H11F17O2		10g	\$185.50	25g	\$386.50	100g	\$1,081.50
C9F19	F019025		Methyl 4-(1H,1H,2H,2H-perfluoro-9-methyldecyl)benzoate						
	FW: 632.3	C19H11F19O2		10g	\$242.00	25g	\$515.00	100g	\$1,442.00
C10F21	F021025		Methyl 4-(1H,1H,2H,2H-perfluorododecyl)benzoate						
	FW: 682.31	C20H11F21O2		----- Developmental or limited availability - please inquire for pricing and lead time-----					

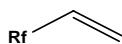
### Propanols



Fluorous propanol is an important precursor for the preparation of more complex fluorinated species, and can also be used as a protecting group for carboxylic acids

C3F7	F007029		3-(Perfluoropropyl)propan-1-ol						
	FW: 228.13	C6H7F7O		----- Developmental or limited availability - please inquire for pricing and lead time-----					
C4F9	F009029	CAS: 83310-97-8	3-(Perfluorobutyl)propan-1-ol						
	FW: 278.13	C7H7F9O		2g	\$82.00	10g	\$275.00	25g	\$562.50
C6F13	F013029	CAS: 80806-68-4	3-(Perfluorohexyl)propan-1-ol						
	FW: 378.15	C9H7F13O		2g	\$35.00	10g	\$149.50	25g	\$309.00
C7F15	F015029	CAS: 25600-66-2	3-(Perfluoroheptyl)propan-1-ol						
	FW: 428.17	C10H7F15O		2g	\$100.00	10g	\$417.00	25g	\$888.50
C8F17	F017029	CAS: 1651-41-8	3-(Perfluorooctyl)propanol						
	FW: 478.18	C11H7F17O		2g	\$35.00	10g	\$145.00	25g	\$298.50

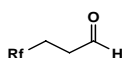
### Olefins



C3F7	F007034	CAS: 355-08-8	1H,1H,2H-Perfluoropent-1-ene						
	FW: 196.08	C5H3F7		10g	\$360.50	25g	\$759.50	100g	\$2,111.50

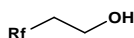
C4F9	F009034	CAS: 19430-93-4 FW: 246.09 C6H3F9	1H,1H,2H-Perfluorohex-1-ene	10g	\$113.50	25g	\$244.50	100g	\$669.50
C6F13	F013034	CAS: 25291-17-2 FW: 346.11 C8H3F13	1H,1H,2H-Perfluorooct-1-ene			25g	\$103.00	100g	\$309.00
C7F15	F015034	CAS: 25431-45-2 FW: 396.12 C9H3F15	1H,1H,2H-Perfluoronon-1-ene	10g	\$180.50	25g	\$386.50	100g	\$1,081.50
C8F17	F017034	CAS: 21652-58-4 FW: 446.11 C10H3F17	1H,1H,2H-Perfluorodec-1-ene			25g	\$51.50	100g	\$154.50
C9F19	F019034	CAS: 57216-75-8 FW: 496.14 C11H3F19	1H,1H,2H-Perfluoroundec-1-ene	10g	\$123.50	25g	\$257.50	100g	\$721.00
C10F21	F021034	CAS: 30389-25-4 FW: 546.15 C12H3F21	1H,1H,2H-Perfluorododec-1-ene	10g	\$103.00	25g	\$219.00	100g	\$618.00

### Alkanal



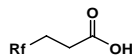
C6F13	F013073	FW: 376.12 C9H5F13	2H,2H,3H,3H-Perfluorononan-1-al						
---- Developmental or limited availability - please inquire for pricing and lead time----									
C8F17	F017073	FW: 476.13 C11H5F17	2H,2H,3H,3H-Perfluoroundecan-1-al	2g	\$93.00	10g	\$254.00		

### Ethanol



C6F13	F013077	FW: 364.11 C8H5F13O	1H,1H,2H,2H-Perfluorooctan-1-ol			25g	\$51.50	100g	\$154.50
-------	---------	---------------------	---------------------------------	--	--	-----	---------	------	----------

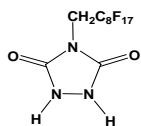
### Carboxylic Acid



C3F7	F007081	FW: 242.09 C6H5F7O2	2H,2H,3H,3H-Perfluorohexanoic acid	2g	\$177.00	10g	\$365.50	25g	\$785.50	100g	\$2,163.00
C4F9	F009081	FW: 292.05 C7H5F9O2	2H,2H,3H,3H-Perfluoroheptanoic acid	2g	\$105.00	10g	\$216.50	25g	\$463.50	100g	\$1,287.50
C6F13	F013081	FW: 392.05 C9H5F13O2	2H,2H,3H,3H-Perfluorononanoic acid	2g	\$103.00	10g	\$211.00	25g	\$450.50	100g	\$1,287.50
C7F15	F015081	FW: 442.05 C10H5F15O2	2H,2H,3H,3H-Perfluoro-8-methylnonanoic acid	2g	\$163.00	10g	\$340.00	25g	\$721.00	100g	\$2,008.50
C8F17	F017081	FW: 492.05 C11H5F17O2	2H,2H,3H,3H-Perfluoroundecanoic acid	2g	\$87.00	10g	\$180.50	25g	\$373.50	100g	\$1,081.50
C9F19	F019081	FW: 542.05 C12H5F19O2	2H,2H,3H,3H-Perfluoro-10-methylundecanoic acid	2g	\$128.00	10g	\$268.00	25g	\$566.50	100g	\$1,596.50

**Triazolidine dione**

---



Common intermediate for numerous fluorous-tags & scaffolds

C8F17 XP017207

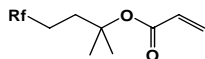
FW: 547.02 C12H6F17N3O2

4-(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptafluorodecyl)-[1,2,4]triazolidine-3,5-dione

----- Developmental or limited availability - please inquire for pricing and lead time-----

**Acrylate**

---



C8F17 XP017055

FW: 560.25 C16H13F17O2

1,1-dimethyl-3-(perfluorooctyl)propyl acrylate

----- Developmental or limited availability - please inquire for pricing and lead time-----

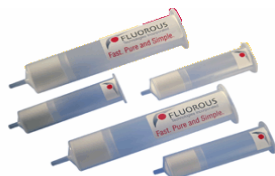
## Fluorous Sorbents

The separation of fluorous compounds from non-fluorous compounds using FluoroFlash<sup>®</sup> silica gel is the central theme of fluorous techniques. Under the appropriate conditions the FluoroFlash<sup>®</sup> stationary phase retains the fluorous compounds with exceptional efficiency and selectivity. A simple switch of the mobile phase then effects release of the fluorous compounds from the stationary phase. FluoroFlash<sup>®</sup> silica gel is characterized by its high loading capacity, outstanding selectivity, and easy recyclability(1).

FluoroFlash<sup>®</sup> silica gel is available in a variety of formats from analytical to preparative and from pre-packaged to loose bulk. FTI can also custom format FluoroFlash<sup>®</sup> silica to meet your purification needs.

1. Curran, D. P. *Synlett* **2001**, 1488-1496.

### Fluorous-packed SPE cartridges



Fluorous solid phase extraction (F-SPE) is used for quick separations of reaction mixtures involving fluorous reagents, protecting groups, tags, and scavengers (1-5). FluoroFlash<sup>®</sup> silica separates fluorous compounds from non-fluorous compounds, selectively retaining fluorous molecules while non-fluorous compounds are not retained, regardless of polarity. The fluorous compounds can then be recovered easily through a simple solvent change. FluoroFlash<sup>®</sup> SPE cartridges are pre-packed in a variety of formats with a proprietary fluorous silica gel. If you require a particular format, i.e. specific cartridge size, multi-well plate, etc., please contact FTI. Please consult the F-SPE application note for more details.

1. Curran, D. P. *Handbook of Fluorous Chemistry*, **2004**, 101-155.
2. Zhang, W.; Curran, D. P.; Chen, C. H.-T. *Tetrahedron*, **2002**, *58*, 3871-3875.
3. Curran, D.; Lou, Z. Y. *Green Chem.* **2001**, *3*, G3-G7.
4. Zhang, Q.; Luo, Z.; Curran, D. P. *J. Org. Chem.* **2000**, *65*, 8866-8873.
5. Curran, D. P.; Hadida, S.; He, M. *J. Org. Chem.* **1997**, *62*, 6714-6715.

801-0027S-2	FluoroFlash <sup>®</sup> SPE Cartridges, 2 grams, 8 cc tube (2)	ea	\$30.00
801-0027S-5	FluoroFlash <sup>®</sup> SPE Cartridges, 2 grams, 8 cc tube (5)	ea	\$65.00
801-0027S-20	FluoroFlash <sup>®</sup> SPE Cartridges, 2 grams, 8 cc tube (20)	ea	\$185.00
801-0058S-2	FluoroFlash <sup>®</sup> SPE Cartridges, 5 grams, 10 cc tube (2)	ea	\$55.00
801-0058S-10	FluoroFlash <sup>®</sup> SPE Cartridges, 5 grams, 10 cc tube (10)	ea	\$230.00
801-0109S-1	FluoroFlash <sup>®</sup> SPE Cartridges, 10 grams, 60 cc tube (1)	ea	\$55.00
801-0109S-5	FluoroFlash <sup>®</sup> SPE Cartridges, 10 grams, 60 cc tube (5)	ea	\$230.00
801-0209S-1	FluoroFlash <sup>®</sup> SPE Cartridges, 20 grams, 60 cc tube (1)	ea	\$95.00
801-0209S-5	FluoroFlash <sup>®</sup> SPE Cartridges, 20 grams, 60 cc tube (5)	ea	\$375.00

### Fluorous-packed HPLC columns



FluoroFlash<sup>®</sup> HPLC columns are packed with a proprietary fluorous silica gel specifically designed for HPLC applications. Under F-HPLC conditions, FluoroFlash<sup>®</sup> silica gel separates compounds primarily based on fluorine content while compound polarity plays a minor secondary role. This allows for the separation of fluorous compounds based on size of the fluorous tag and is the basis of fluorous mixture synthesis (FMS) where mixtures are deconvoluted using F-HPLC (1-4).

FluoroFlash<sup>®</sup> HPLC columns are available in range of sizes from analytical to semi-preparative. Please consult the F-HPLC application note for more details.

1. Luo, Z. Y.; Zhang, Q. S.; Oderaotoshi, Y.; Curran, D. P. *Science*, **2001**, *291*, 1766-1769.
2. Curran, D. P.; Furukawa, T. *Organic Lett.* **2002**, *4*, 2233-2235.
3. Zhang, W.; Luo, Z.; Chen, C. H.-T.; Curran, D. P. *J. Am. Chem. Soc.* **2002**, *124*, 10443-10450.
4. Jian, H.; Tour, J. M. *J. Org. Chem.* **2005**, *70*, 3396-3424.

803-0505C	FluoroFlash <sup>®</sup> HPLC Columns, 4.6 mm i.d., 50 mm length, 5 $\mu$ m	ea	\$419.50
803-0510C	FluoroFlash <sup>®</sup> HPLC Columns, 4.6 mm i.d., 150 mm length, 5 $\mu$ m	ea	\$451.50
803-1005C	Fluorous HPLC Columns, 10 mm I.d, 50 mm length, 5 $\mu$ m	ea	\$901.50

803-1010C	FluoroFlash® HPLC Columns, 10 mm i.d., 100 mm length, 5 µm	Ea	\$1,107.50
803-2005C	FluoroFlash® HPLC Columns, 20 mm i.d., 50 mm length, 5 µm	Ea	\$1,743.50
803-2010C	FluoroFlash® HPLC Columns, 20 mm i.d., 100 mm length, 5 µm	Ea	\$2,360.00
803-2025C	FluoroFlash® HPLC Columns, 20 mm i.d., 250 mm length, 5 µm	Ea	\$3,650.00

### Fluorous silica gel

Bulk FluoroFlash® silica gel is available in two particle sizes, 40 micron and 5 micron. The 40 micron gel is suitable for use in SPE cartridges and multi-well SPE plates (1). The 5 micron gel is recommended for proteomics and bioreagent applications where nanocapillary columns are required (2).

- Zhang, W.; Lu, Y.; Nagashima, T. *J. Comb. Chem.* **2005**, *7*, 893-897.
- Brittain, S. M.; Ficarro, S. B.; Brock, A.; Peters, E. C. *Nature Biotechnology*, **2005**, *23*, 463-468.

801-0025B	FluoroFlash® Silica Gel, 40 µm (25g pkg)	Ea	\$90.00
801-0100B	FluoroFlash® Silica Gel, 40 µm (100g pkg)	Ea	\$250.00
801-1000B	FluoroFlash® Silica Gel, 40 µm (kg)	Ea	\$2,250.00
803-1100B	Bulk 5 Micron HPLC Grade Silica Gel	kg	\$55.00

### FluoroFlash® NuTips

Designed for proteomics and other smaller scale analytical applications, these tips contain FluoroFlash® silica gel in a convenient pipette tip format by which fluorous solid phase extractions (F-SPEs) can be conducted to enrich your sample. Two different sizes are available.

- Brittain, S.; Ficarro, S.; Brock, A.; Peters, E.; "Enrichment and analysis of peptide subsets using fluorous affinity tags and mass spectrometry", *Nature Biotechnology*, **2005**, *23*(4), 463-468.

801-5040	FluoroFlash NuTip 1-10 microliters	Ea	\$2.50
		Pack of 96	\$225.00
801-5050	FluoroFlash NuTip 10-202 microliters	Ea	\$2.75
		Pack of 96	\$250.00

### Fluorous Modified Glass Slides

Available in either plain or barcoded varieties these slides are made, packaged, and shipped to strict standards suitable for microarray formation. These slides provide the perfect media by which to immobilize your fluorous tagged substrates for microarray analysis. Fluorous microarrays offer very low background fluorescence, exceptionally low non-specific binding, simpler workflows, and excellent spot morphology. Available in boxes of 10 slides each, these slides are standard 25.10 x 75.36 x 1.00 mm.

- Ko, K.-S.; Jaipuri, F. A.; Pohl, N. L. *J. Am. Chem. Soc.* **2005**, *127*, 13162-13163.
- Mamidyala, S. K.; Ko, K.-S.; Jaipuri, F. A.; Park, G.; Pohl, N. L. *J. F. Chem.* **2006**, *127*, 571-579.

850-9100	Fluorous Modified Glass Slides (25 x 75 x 1.0mm fluorous modified microarray glass slides) box of 10	Ea	\$110.00
850-9200	Fluorous Modified Glass Slides - BARCODED (25 x 75 x 1.0mm fluorous modified microarray glass slides) box of 10	Ea	\$120.00

### FluoroFlash® TLC plates

803-9510PF	FluoroFlash® TLC Plates 10 pack, 5x10cm, F254 indicator	Ea	\$89.50
------------	---	----	---------

## Fluorous Multi-product Kits

**Multi-product kits**

Each kit is designed to provide a suite of products suitable for a comprehensive evaluation. Kit pricing is lower than the price of all the components if purchased individually. Please contact FTI for details.

K034	Pick-2 trial kit				ea	\$98.00
K051	Pick-3 trial kit				ea	\$149.50
	Trial Kit contains 2- 2g F-SPE cartridges and any 2 or 3 of the following compounds:					
	F17- BOC-On	F017003	1g	Protecting Group		
	F17-Cbz-Osu	F017008	1g	Protecting Group		
	F17-Silane	F017004	1g	Protecting Group		
	F17-PMB-OH	F017006	1g	Protecting Group		
	F17-Triphenylphosphine	F017039	708mg	Mitsunobu		
	F-DIAD Reagent	F026100	810mg	Mitsunobu		
	F17-Propylamine	F017031	500mg	Scavenging		
	F17-Benzylamine	F017030	500mg	Scavenging		
	F17-Thiol	F017023	500mg	Scavenging & Tagging		
	F17-Isatoic Anhydride	F017028	500mg	Scavenging		
	F17-Isocyanate	F017032	500mg	Scavenging		
	F17-Oxybenzaldehyde	F017036	500mg	Scavenging		
K073	Fluorous electrophilic scavenger kit				ea	\$292.50
	Kit contains 2g each of F-Isatoic Anhydride, F-Isocyanate and F-Oxybenzaldehyde					
K075	Metal Scavenger Kit				ea	\$196.00
	Kit contains 2g each of F-TMT, F-methylaminodiol and F-Methylthiourea					
K077	Nucleophilic Scavenger Kit				ea	\$247.00
	Kit contains 2g each of F-Thiol, F-Benzylamine and F-Propylamine					
K079	Fluorous Scavenger Module				ea	\$1,957.00
	Kit contains 10g each of F-Thiol, F-Propylamine, F-Isocyanate, F-Isatoic Anhydride, 2g F-SPE cartridges, 5g F-SPE cartridges and F-TLC Plates					
K089	Fluorous Tagging Module				ea	\$2,060.00
	Kit contains 10g each of F17-Boc-On, F17-Silane, F17-Cbz-Osu, F17-Bn-OH, F-PMB-OH, 2g F-SPE cartridges, 5g F-SPE cartridges and F-TLC Plates					
K099	Fluorous Transformation Kit				ea	\$5,047.00
	Kit contains 10g each of F17-Thiol, F-Propylamine, F-Isocyanate, F-Isatoic Anhydride, FluoMar®, F-Mukaiyama Reagent, F-CDMT, F-Tin Oxide, 20g each of F-DIAD and F-TPP, 1g of (F-TPP) <sub>2</sub> PdCl <sub>2</sub> , 2g F-SPE cartridges, 5g F-SPE cartridges, F-TLC Plates and a Display Case					
K100	Fluorous Dye Demonstration Kit				ea	\$46.50
	Includes a 5 mg mixture of F-Orange and Solvent Blue and 2-2g F-SPE Cartridges					

## Ordering Information & Other Details

### Ordering Information

Please send a purchase order (by mail, by e-mail, by phone or by fax):

Phone: 412-826-3050 or 877-FLUOROFASH  
Fax: 412-826-3053  
E-mail: orders@fluorous.com

Mail: Fluorous Technologies Inc.  
970 William Pitt Way  
Pittsburgh, PA 15238, USA

Acknowledgement of all Purchase Orders will be made to the Individual or Purchasing Department within 24 hours of the receipt of the purchase order via e-mail, telephone or fax with a Confirmation Number.

Please note that we are not able to accept credit card payment for purchase orders.

### Terms and Prices

Terms and Prices Payment terms are net 30 days in US dollars unless other arrangements are made in advance. Prices are F.O.B. Pittsburgh, PA, USA and are subject to change without notice. Freight and insurance are charged separately. In addition to shipping costs, for destinations outside the United States, a US\$25 handling fee is added. Non-US customers are also responsible for any applicable duty and taxes.

### Intellectual Property Notice

Fluorous Technologies' products may be covered by composition and/or application patents. Fluorous Technologies owns or exclusively licenses the following US Patents (and related global filings) which broadly protect the use of fluorous materials in synthesis and separation: 6156896, 5859247, 5777121, 6806357, 6458978, 6727390, 6734318, 6673539, 6749756. Fluorous Technologies, Inc. DOES NOT WARRANT that the use or sale of the products delivered hereunder will not infringe the claims of any United States or foreign patent or patent application covering the product itself or the use thereof in combination with other products or in the operation of any process. The buyer is responsible for any patent infringement resulting from use of these products.

### Returns

Return shipments are not accepted unless we have given prior permission and complete shipping instructions.

### Warranty Disclaimer

No warranties by seller (other than warranty of title as provided in the uniform commercial code) shall be implied or otherwise created under the uniform commercial code, including but not limited to warranty of merchantability and warranty of fitness for a particular purpose.

### TSCA

In order to ensure compliance with the Toxic Substances Control Act, Fluorous Technologies' products are sold solely for research and development, and as a condition of purchase buyers agree to that their use of our products is limited to research and development. If you intend to use our products for a manufacturing or for any purpose other than research and development, you must notify Fluorous Technologies. If the buyer's proposed non-R&D use requires TSCA registration and we agree to supply the product for such use, prior to selling the product we will ascertain whether the product is listed in the TSCA Inventory or we will file a premanufacturing notification with USEPA.

### Limitation of Consequential Damages and Indemnification

Fluorous Technology products are for sale only to purchasers who are aware of the hazards associated with the use of chemical compounds, including hazardous materials and experimental compounds for which only limited characterization data are available. As a condition of purchase, buyers agree that their personnel concerned with any such products are aware of the hazards and assumes all responsibility for the warning of their employees of all hazards connected with the products.

Purchaser also assumes all responsibility for the results of using any product offered in combination with other articles or substances, and in any manufacturing process, and for the ultimate safe disposal of the product in accordance with applicable laws. Fluorous Technologies' sole obligation and the purchaser's exclusive remedy with respect to products proved to Fluorous Technologies' satisfaction to be defective or nonconforming shall be return of such products to Fluorous Technologies, and refund of the purchase price actually paid therefore by the purchaser. Fluorous Technologies, Inc. shall not be subject to any other obligations or liabilities, whether arising out of breach of contract, warranty, tort (including negligence and strict liability) or other theories of law, with respect to goods sold or technical services rendered by Fluorous Technologies, or any undertakings, acts or omissions relating thereto.

Without limiting the generality of the foregoing, Fluorous Technologies specifically disclaims any liability for property or personal injury damage penalties, special punitive damages, damages or lost profits or revenues, loss of use of product or any associated equipment, cost of capital, cost of substitute products, facilities or services, down-time, shut-down, or slow-down costs, or for any other type of economic loss and for claims of the purchaser's customers or any other third party for any such damages. FLUOROUS TECHNOLOGIES, INC. SHALL NOT BE LIABLE FOR AND DISCLAIMS ALL CONSEQUENTIAL, INCIDENTAL AND CONTINGENT DAMAGES WHATSOEVER. The purchaser shall indemnify Fluorous Technologies, Inc. from and against any and all losses, damages and expenses (including attorney's fees and other costs of defending any action) that Fluorous Technologies may sustain or incur as a result of any claim of breach of contract, tort (including negligence, breach of implied warranty, strict liability in tort) or other theories of law, by the purchaser, its officers, agents or employees, its successors and assigns, and its customers, or other persons, whether direct or indirect, in connection with the use of the product furnished hereunder.