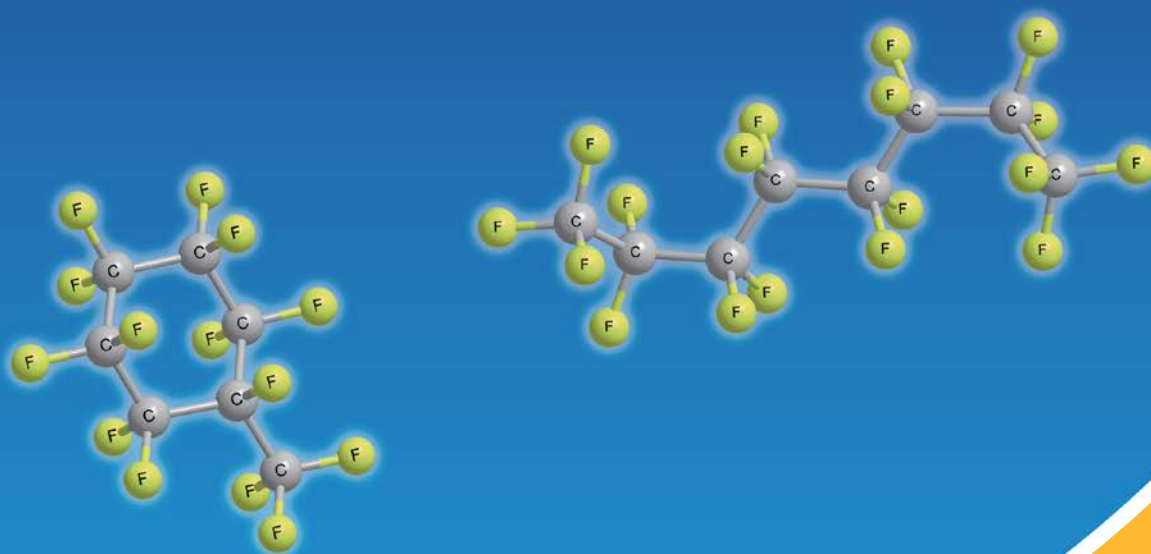


Fluorous Chemistry



Fluorous Solvents

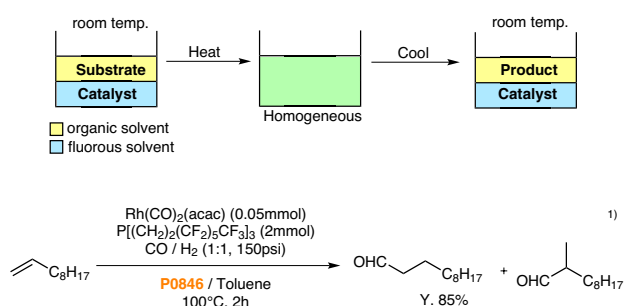
Fluorous Compounds

Fluorous Chemistry

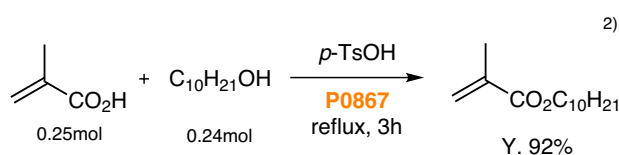
Recently, fluorous chemistry has been studied intensively from the perspective of "Green Chemistry", as the products can be readily separated and the solvents used are reusable. The term "fluorous" was introduced as the analogue to the term aqueous, meaning dissolve in fluorocarbon solvents. Although highly fluorinated compounds (fluorous compounds) neither dissolve in common organic solvents nor in water, they dissolve well in fluorous solvents such as perfluoroalkane. Fluorous chemistry utilizes this property and a numerous application of this chemistry has been made.

1. Organic reaction using fluorous solvents

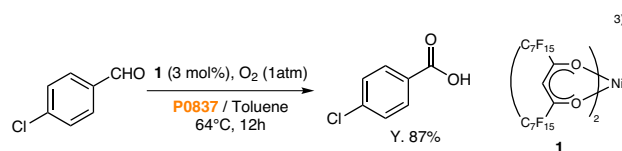
Although fluorous solvents are immiscible with water and common organic solvents, certain fluorous solvents have the properties to form a homogeneous solution with some organic solvents at elevated temperatures. They also have the properties that the boiling points are almost equal to those of the corresponding hydrocarbons regardless of their molecular weight, and the high solubility of many gases in these solvents. Taking the advantage of these properties, Horváth *et al.* accomplished the hydroformylation of olefins using a fluorous rhodium catalyst in perfluoromethylcyclohexane and toluene in 1994.¹⁾ This was regarded as the origin of the fluorous chemistry. This reaction uses perfluoromethylcyclohexane and toluene as solvent, which form a biphase at room temperature. In this system the fluorous catalyst exists in the fluorous phase and the olefins in the organic phase. However, the two phases form a homogeneous solution when heated. The reaction then proceeds by introduction of carbon monoxide and hydrogen gases. When the reaction is complete and cooled, the two phase system reappears, where the resulting product is dissolved in the toluene phase and the fluorous catalyst in the fluorous phase, thus, making the catalyst and the product easily separable. The biphase system using a fluorous solvent and an organic solvent is called Fluorous Biphasic System (FBS), and the multiple phase system is called Fluorous Multiphase System (FMS). The advantages of FBS and FMS are that the resulting product and the catalyst can be easily separated simply by separating the fluorous phase from the other phase after the reaction, and that the fluorous phase containing fluorous catalyst can be reusable after separation.



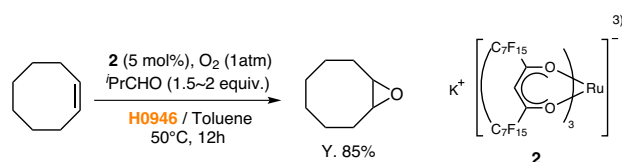
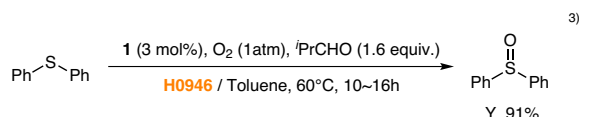
Zhu also reported the synthesis of carboxylic ester from methacrylic acid and decanol using *p*-toluenesulfonic acid in perfluorobutyltetrahydrofuran.²⁾ Although methacrylic acid, decanol and the acid catalyst dissolve in a fluorous solvent upon heating, the water generated in the reaction does not dissolve in the fluorous solvent. When the reaction mixture is cooled, the resulting carboxylic ester floats on the water phase, and the desired product can be separated.



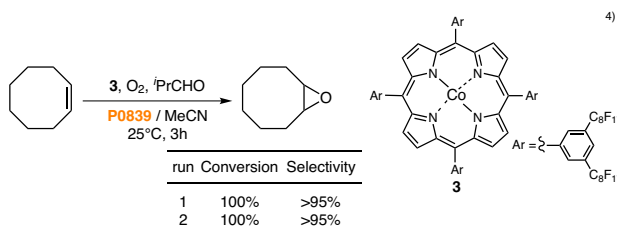
A numerous oxidation reactions in biphase system with fluorous solvents and organic solvents have also been studied with oxygen molecule. Knochel *et al.* have reported the oxidation of aldehydes, olefins and sulfides in the presence of a nickel complex catalyst with a fluorous β -diketone as ligand³⁾. For the oxidation of aldehydes, perfluorodecalin and toluene were used as solvents, and this system also was found to form a homogeneous solution upon heating. After the reaction was over and cooled to room temperature, the catalyst staying in the fluorous phase and the product in the organic phase were easily separated. Due to their strong solubility, fluorous solvents are suitable for many reactions that requires to gases reagents.



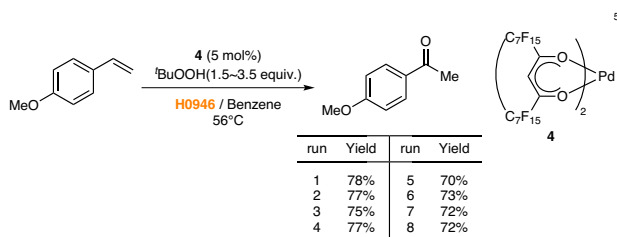
Various oxidation reaction of sulfides and olefins have also been studied similarly in the presence of isobutylaldehyde.³⁾ The solvents used in these reactions were perfluorooctyl bromide and toluene, and this solvent system also formed a homogeneous solution upon heating.



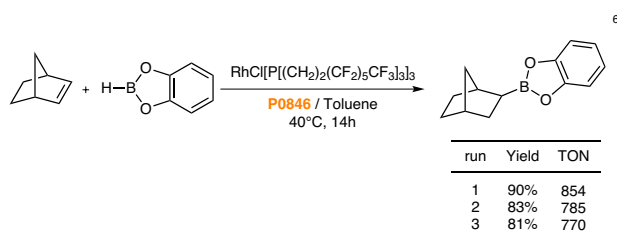
Pozzi *et al.* have also reported an epoxidation of olefins using molecular oxygen catalyzed by fluorous porphyrin-cobalt complex in the presence of isobutylaldehydes.⁴⁾ This reaction was carried out in biphasic system of perfluorohexane and acetonitrile by stirring the mixture at room temperature. When the reaction was complete, the catalyst and the product were separated as usual, and the fluorous phase containing the catalyst was reused.



The Wacker oxidation reaction using perfluorooctyl bromide as fluorous solvent has also been reported.⁵⁾ Perfluorooctyl bromide and benzene form a homogeneous solution when heated. After the reaction is complete and cooled, the product is separated from the palladium catalyst complexed with fluorous β -diketone. The fluorous phase can be reused after separation.



Horváth and Gladysz *et al.* have reported a hydroboration in perfluoromethylcyclohexane and toluene using a rhodium complex catalyst with fluorous ligands.⁶⁾ After the reaction was complete, the product was separated, and the fluorous phase containing the catalyst was reused.



2. Application to the synthesis of sugar chains and Combinatorial Chemistry

Curran *et al.* have introduced the use of fluorous substituents (fluorous tags) into non-fluorous substrates and the synthesis of isoxazoline by using this fluorous compound.⁷⁾ After the reaction,

the fluorous product was separated by extraction with dichloromethane, water, and perfluorohexane. Following this report, a numerous applications of this fluorous chemistry have been made in combinatorial chemistry.⁸⁾ And, Inazu *et al.* have applied this chemistry to the synthesis of oligosaccharide.⁹⁾ In this reaction, the fluorous tag was first introduced into the sugar molecule, and then glycoxylation followed. The desired oligosaccharide thus obtained was extracted with an organic solvent, water, and perfluorohexane.

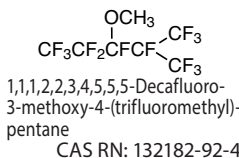
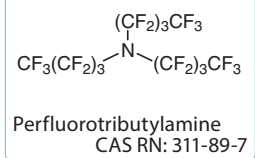
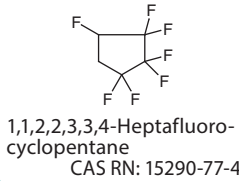
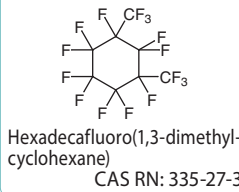
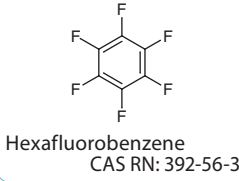
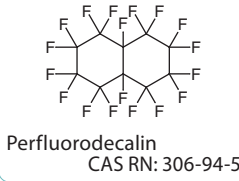
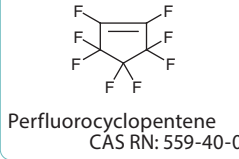
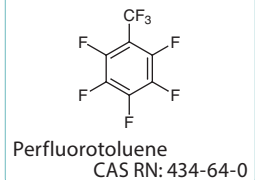
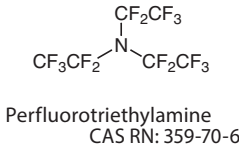
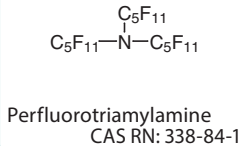
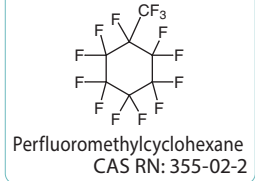
As shown by the aforementioned examples, fluorous chemistry introduced by Horváth *et al.* has widely been applied in many areas of synthetic chemistry. Utilizing this chemistry, it is possible to isolate the desired product easily from the catalyst and the fluorous solvents. Furthermore, the separated fluorous solvents and the catalysts can be reused. A great deal of studies have been made on this subject, especially, because of its usefulness in term of Green Chemistry. It is also expected that this chemistry will be widely used in the application to the combinatorial chemistry where many compounds are handled at multiple steps.

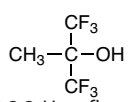
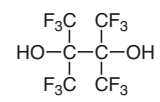
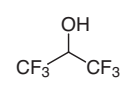
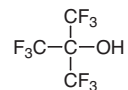
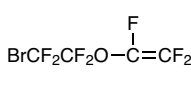
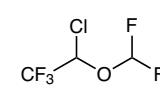
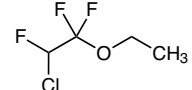
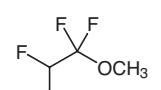
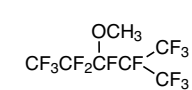
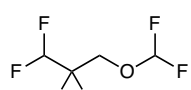
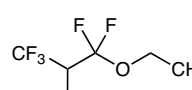
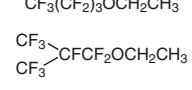
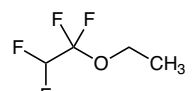
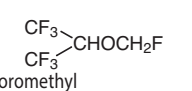
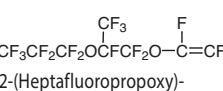
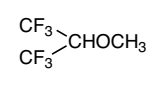
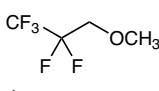
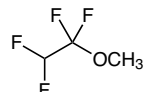
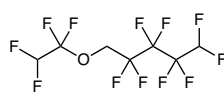
References

- 1) I. T. Horváth, J. Rábai, *Science*, **1994**, 266, 72.
- 2) D.-W. Zhu, *Synthesis*, **1993**, 953.
- 3) I. Klement, H. Lütjens, P. Knochel, *Angew. Chem. Int. Ed. Engl.*, **1997**, 36, 1454.
- 4) G. Pozzi, F. Montanari, S. Quici, *Chem. Commun.*, **1997**, 69.
- 5) B. Betzemeier, F. Lhermitte, P. Knochel, *Tetrahedron Lett.*, **1998**, 39, 6667.
- 6) J. J. Juliette, I. T. Horváth, J. A. Gladysz, *Angew. Chem. Int. Ed. Engl.*, **1997**, 36, 1610; J. J. Juliette, D. Rutherford, I. T. Horváth, J. A. Gladysz, *J. Am. Chem. Soc.*, **1999**, 121, 2696.
- 7) A. Studer, S. Hadida, R. Ferritto, S.-Y. Kim, P. Jeger, P. Wipf, D. P. Curran, *Science*, **1997**, 275, 823.
- 8) D. P. Curran, S. Hadida, *J. Am. Chem. Soc.*, **1996**, 118, 2531; D. P. Curran, M. Hoshino, *J. Org. Chem.*, **1996**, 61, 6480; D. P. Curran, *Angew. Chem. Int. Ed.*, **1998**, 37, 1174; D. P. Curran, Z. Luo, *J. Am. Chem. Soc.*, **1999**, 121, 9069; Q. Zhang, Z. Luo, D. P. Curran, *J. Org. Chem.*, **2000**, 65, 8866; Z. Luo, Q. Zhang, Y. Oderaotoshi, D. P. Curran, *Science*, **2001**, 291, 1766; S. Darses, M. Pucheault, J.-P. Genêt, *Eur. J. Org. Chem.*, **2001**, 1121.
- 9) T. Miura, Y. Hirose, M. Ohmae, T. Inazu, *Org. Lett.*, **2001**, 3, 3947; T. Miura, T. Inazu, *Tetrahedron Lett.*, **2003**, 44, 1819.
- 10) Review
K. Ishihara, H. Yamamoto, *Kagaku To Kogyo*, **2001**, 54, 1061; K. Ishihara, *Kagaku To Kogyo*, **2002**, 55, 865; I. Ryu, H. Matsubara, *Kagaku*, **2002**, 57(5), 20; S. Takeuchi, Y. Nakamura, *Kagaku*, **2002**, 57(6), 16; K. Mikami, H. Matsuzawa, *Kagaku*, **2002**, 57(7), 22; K. Ishihara, H. Yamamoto, *Kagaku*, **2002**, 57(8), 30.

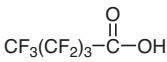
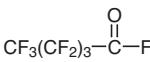
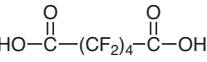
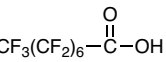
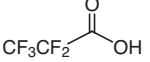
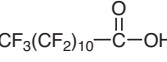
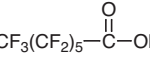
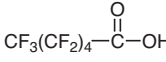
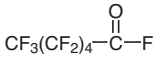
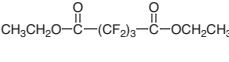
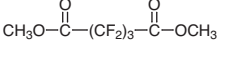
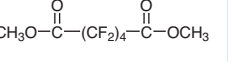
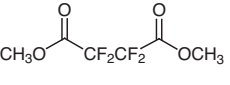
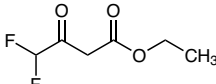
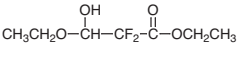
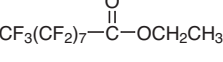
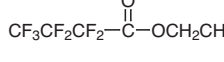
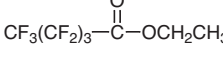
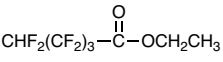
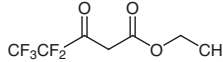
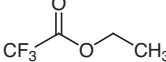
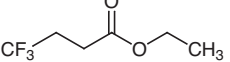
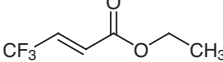
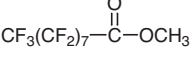
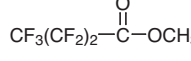
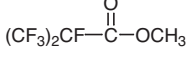
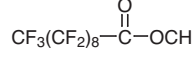
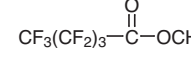
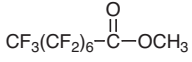
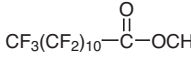
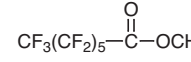
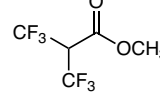
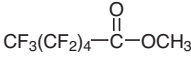
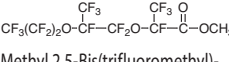
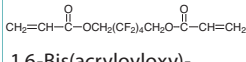
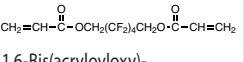
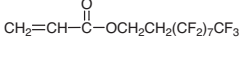
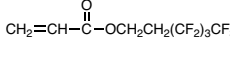
Keywords : fluorous chemistry, fluorous solvents, environmentally-friendly solvents

Fluorous Solvents

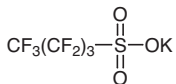
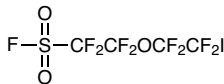
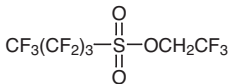
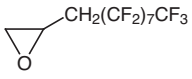
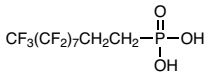
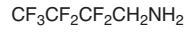
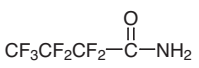
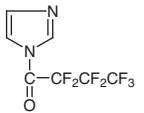
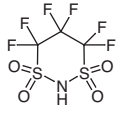
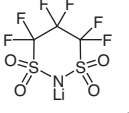
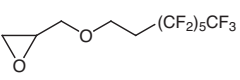
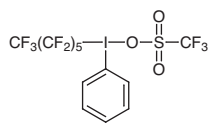
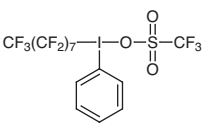
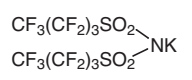
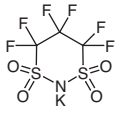
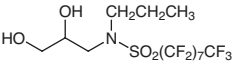
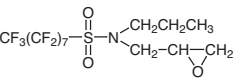
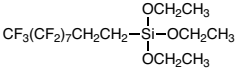
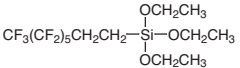
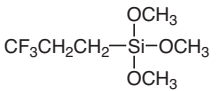
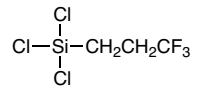
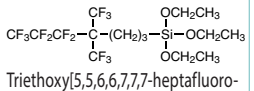
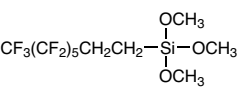
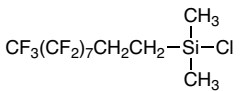
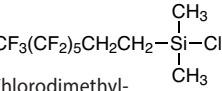
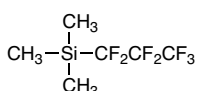
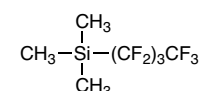
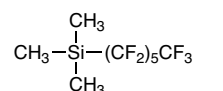
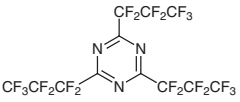
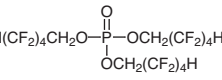
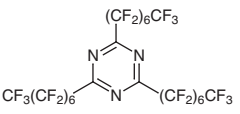
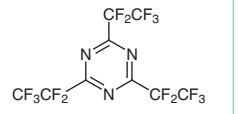
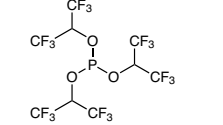
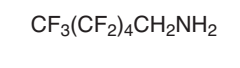
<h2 style="text-align: center;">Fluorous Solvents</h2>		D4484 25g 500g  1,1,1,2,2,3,4,5,5,5-Decafluoro-3-methoxy-4-(trifluoromethyl)pentane CAS RN: 132182-92-4	D2669 25g 100g 500g $\text{CF}_3\text{CHFCHFCF}_2\text{CF}_3$ 2 <i>H</i> ,3 <i>H</i> -Decafluoropentane CAS RN: 138495-42-8	E0485 5g 25g $\text{CF}_3(\text{CF}_2)_7\text{CF}_3$ Eicosafuorononane CAS RN: 375-96-2		
		P0074 25g 100g  Perfluorotributylamine CAS RN: 311-89-7	H0946 5g 25g $\text{CF}_3(\text{CF}_2)_7\text{Br}$ Perfluoro- <i>n</i> -octyl Bromide CAS RN: 423-55-2	H1013 25g 500g  1,1,2,2,3,3,4-Heptafluorocyclopentane CAS RN: 15290-77-4	P1755 1g $\text{CF}_3(\text{CF}_2)_{10}\text{CF}_3$ Hexacosafuorododecane CAS RN: 307-59-5	P1420 25g  Hexadecafluoro(1,3-dimethylcyclohexane) CAS RN: 335-27-3
		P0851 10g $\text{CF}_3(\text{CF}_2)_5\text{CF}_3$ Hexadecafluoroheptane (mixture of isomers) CAS RN: 335-57-9	H0085 5g 25g 250g  Hexafluorobenzene CAS RN: 392-56-3	P0837 25g  Perfluorodecalin CAS RN: 306-94-5	O0268 10g $\text{CF}_3(\text{CF}_2)_6\text{CF}_3$ Perfluorooctane CAS RN: 307-34-6	O0292 10g 50g  Perfluorocyclopentene CAS RN: 559-40-0
		P0856 5g 25g  Perfluorotoluene CAS RN: 434-64-0	P1348 5g 25g  Perfluorotriethylamine CAS RN: 359-70-6	P0867 25g Perfluoro-(2-butyltetrahydrofuran) CAS RN: 335-36-4	P1051 25g  Perfluorotriamylamine CAS RN: 338-84-1	P0839 10g 25g 250g $\text{CF}_3(\text{CF}_2)_4\text{CF}_3$ Perfluorohexane CAS RN: 355-42-0
		P0846 25g 100g  Perfluoromethylcyclohexane CAS RN: 355-02-2	T1012 25mL $\text{CF}_3\text{CF}_2\text{CF}_2\text{CF}(\text{CF}_3)_2$ Perfluoroisohexane CAS RN: 355-04-4			
<h2 style="text-align: center;">Fluorous Compounds</h2>		<h3 style="text-align: center;">Fluorous Alkanes, Fluorous Alkenes</h3>			H0846 5g 25g $\text{CF}_3(\text{CF}_2)_7\text{CH}=\text{CH}_2$ (Perfluoro- <i>n</i> -octyl)ethylene CAS RN: 21652-58-4	
					N0601 5g 25g $\text{CF}_3(\text{CF}_2)_3\text{CH}=\text{CH}_2$ (Perfluorobutyl)ethylene CAS RN: 19430-93-4	
		P1102 5g 10g 25g 100g $\text{CF}_3(\text{CF}_2)_5\text{CH}=\text{CH}_2$ (Perfluorohexyl)ethylene CAS RN: 25291-17-2	T2496 5g $\text{CF}_3(\text{CF}_2)_4\text{CHF}_2$ 1 <i>H</i> -Tridecafluorohexane CAS RN: 355-37-3	U0076 5g $\text{CF}_3(\text{CF}_2)_3\text{CHF}_2$ 1 <i>H</i> -Undecafluoropentane CAS RN: 375-61-1	<h3 style="text-align: center;">Fluorous Alcohols</h3>	
					D4128 5g 25g $\text{CHF}_2\text{CH}_2\text{OH}$ 2,2-Difluoroethanol CAS RN: 359-13-7	
		D1101 25g 100g 250g $\text{H}(\text{CF}_2)_6\text{CH}_2\text{OH}$ 1,1,7-Trihydroperfluoroheptanol CAS RN: 335-99-9	D2891 5g 25g $\text{HOCH}_2(\text{CF}_2)_6\text{CH}_2\text{OH}$ 2,2,3,3,4,4,5,5,6,6,7,7-Dodecafluoro-1,8-octanediol CAS RN: 90177-96-1	E0239 10g $\text{H}(\text{CF}_2)_{10}\text{CH}_2\text{OH}$ 1 <i>H</i> ,1 <i>H</i> ,11 <i>H</i> -Eicosafuoro-1-undecanol CAS RN: 307-70-0	H0845 25g 250g $\text{CF}_3(\text{CF}_2)_7\text{CH}_2\text{CH}_2\text{OH}$ 2-(Perfluoro- <i>n</i> -octyl)ethanol CAS RN: 678-39-7	H1232 5g $\text{CF}_3(\text{CF}_2)_7\text{CH}_2\text{OH}$ 1 <i>H</i> ,1 <i>H</i> -Perfluoro-1-nonanol CAS RN: 423-56-3

H1349 5g 25g  1,1,1,3,3,3-Hexafluoro-2-methyl-2-propanol CAS RN: 1515-14-6	H0548 5g 25g $\text{CF}_3\text{CF}_2\text{CF}_2\text{CH}_2\text{OH}$ 1 <i>H</i> ,1 <i>H</i> -Heptafluoro-1-butanol CAS RN: 375-01-9	H1233 1g 5g $\text{HOCH}_2(\text{CF}_2)_8\text{CH}_2\text{OH}$ 1 <i>H</i> ,1 <i>H</i> ,10 <i>H</i> ,10 <i>H</i> -Hexadecafluoro-1,10-decanediol CAS RN: 754-96-1	H1035 25g $\text{H}(\text{CF}_2)_8\text{CH}_2\text{OH}$ 1 <i>H</i> ,1 <i>H</i> ,9 <i>H</i> -Hexadecafluoro-1-nonanol CAS RN: 376-18-1	H1279 5g 25g  Perfluoropinacol CAS RN: 918-21-8
H0649 25g $\text{CF}_3\text{CHFCF}_2\text{CH}_2\text{OH}$ 2,2,3,4,4,4-Hexafluoro-1-butanol CAS RN: 382-31-0	H0746 1g 5g 25g $\text{HOCH}_2(\text{CF}_2)_3\text{CH}_2\text{OH}$ 2,2,3,3,4,4-Hexafluoro-1,5-pentenediol CAS RN: 376-90-9	H0424 25g 100g 250g 500g  HFIP CAS RN: 920-66-1	N0814 5g $\text{CF}_3(\text{CF}_2)_8\text{CH}_2\text{OH}$ 1 <i>H</i> ,1 <i>H</i> -Perfluoro-1-decanol CAS RN: 307-37-9	N0692 1g 5g 25g  Perfluoro- <i>tert</i> -butanol CAS RN: 2378-02-1
N0600 5g 25g $\text{CF}_3(\text{CF}_2)_3\text{CH}_2\text{CH}_2\text{OH}$ 2-(Perfluorobutyl)ethanol CAS RN: 2043-47-2	N0810 1g 5g 25g $\text{CF}_3(\text{CF}_2)_3\text{CH}_2\text{OH}$ (Perfluorobutyl)methanol CAS RN: 355-28-2	O0294 5g 25g $\text{HOCH}_2(\text{CF}_2)_4\text{CH}_2\text{OH}$ 2,2,3,3,4,4,5,5-Octafluoro-1,6-hexanediol CAS RN: 355-74-8	O0114 25g 100g 500g $\text{CHF}_2(\text{CF}_2)_3\text{CH}_2\text{OH}$ 2,2,3,3,4,4,5,5-Octafluoro-1-pentanol CAS RN: 355-80-6	P0904 5g 25g $\text{CF}_3(\text{CF}_2)_6\text{CH}_2\text{OH}$ 1 <i>H</i> ,1 <i>H</i> -Perfluoro-1-octanol CAS RN: 307-30-2
P0845 25g $\text{CF}_3\text{CF}_2\text{CH}_2\text{OH}$ 1 <i>H</i> ,1 <i>H</i> -Pentafluoro-1-propanol CAS RN: 422-05-9	T1701 5g 25g $\text{CF}_3(\text{CF}_2)_5\text{CH}_2\text{OH}$ 1 <i>H</i> ,1 <i>H</i> -Perfluoro-1-heptanol CAS RN: 375-82-6	T2528 5g 25g $\text{CF}_3(\text{CF}_2)_5\text{CH}_2\text{CH}_2\text{OH}$ 2-(Perfluorohexyl)ethanol CAS RN: 647-42-7	T0435 25g 100g 500g $\text{CF}_3\text{CH}_2\text{OH}$ TFE CAS RN: 75-89-8	T3381 1g 5g $\text{CF}_3(\text{CF}_2)_{10}\text{CH}_2\text{OH}$ 1 <i>H</i> ,1 <i>H</i> -Tricosafuoro-1-dodecanol CAS RN: 423-65-4
<h2>Fluorous Ethers</h2>				
B1293 1g 5g $\text{CF}_3\text{CH}_2\text{OCH}_2\text{CF}_3$ 2,2,2-Trifluoroethyl Ether CAS RN: 333-36-8	B4169 5g  2-Bromotetrafluoroethyl Trifluorovinyl Ether CAS RN: 85737-06-0	C2485 5g 25g  Isoflurane CAS RN: 26675-46-7	C2862 5g  2-Chloro-1,1,2-trifluoroethyl Ethyl Ether CAS RN: 310-71-4	
C0853 5g  2-Chloro-1,1,2-trifluoroethyl Methyl Ether CAS RN: 425-87-6	D4484 25g 500g  1,1,1,2,2,3,4,4,5,5,5-Decafluoro-3-methoxy-4-(trifluoromethyl)pentane CAS RN: 132182-92-4	D4472 1g 5g  Difluoromethyl 2,2,3,3-Tetrafluoropropyl Ether CAS RN: 35042-99-0	E1020 5g 25g  Ethyl 1,1,2,3,3,3-Hexafluoropropyl Ether CAS RN: 380-34-7	E0528 25g 500g $\text{CF}_3(\text{CF}_2)_3\text{OCH}_2\text{CH}_3$  (mixture of isomers) Ethyl Nonafluorobutyl Ether (mixture of isomers) CAS RN: 813458-04-7
E1019 5g 25g  Ethyl 1,1,2,2-Tetrafluoroethyl Ether CAS RN: 512-51-6	F0691 5g  Fluoromethyl 1,1,1,3,3,3-Hexafluoroisopropyl Ether CAS RN: 28523-86-6	P1226 5g  2-(Heptafluoropropoxy)-hexafluoropropyl Trifluorovinyl Ether CAS RN: 1644-11-7	H1610 5g 25g $\text{CF}_3\text{O}(\text{CF}_2)_3\text{O}-\text{C}(\text{F})=\text{CF}_2$ 1,1,2,2,3,3-Hexafluoro-1-(trifluoromethoxy)-3-[[1,2,2-trifluorovinyl]oxy]propane CAS RN: 40573-09-9	H1611 5g 25g $\text{CF}_2=\text{C}(\text{F})-\text{O}(\text{CF}_2)_3\text{O}-\text{C}(\text{F})=\text{CF}_2$ 1,1,2,2,3,3-Hexafluoro-1,3-bis[[1,2,2-trifluorovinyl]oxy]propane CAS RN: 13846-22-5
H1524 5g 25g  Isoindoklon CAS RN: 13171-18-1	M1345 25g 500g $\text{CF}_3\text{CH}_2\text{OCH}_2\text{CF}_3$ Methyl Nonafluorobutyl Ether CAS RN: 163702-07-6	M2500 1g 5g  Methyl 2,2,3,3,3-Pentafluoropropyl Ether CAS RN: 378-16-5	M2514 25g  Methyl 1,1,2,2-Tetrafluoroethyl Ether CAS RN: 425-88-7	O0422 5g 25g  1 <i>H</i> ,1 <i>H</i> ,5 <i>H</i> -Octafluoropentyl 1,1,2,2-Tetrafluoroethyl Ether CAS RN: 16627-71-7

<p>P1224 10g</p> $\text{CF}_3\text{CF}_2\text{CF}_2\text{O}-\overset{\text{F}}{\text{C}}=\text{CF}_2$ <p>Perfluoropropoxyethylene CAS RN: 1623-05-8</p>	<p>H1624 25g</p> $\text{CF}_3\text{CF}_2\text{CF}_2\text{O}-\overset{\text{F}}{\underset{\text{CF}_3}{\text{C}}}-\text{CF}_2\text{OCHFCF}_3$ <p>1,1,1,2,2,3,3-Heptafluoro-3-[[1,1,1,2,3,3,3-hexafluoro-3-(1,2,2,2-tetrafluoroethoxy)propan-2-yl]oxy]propane CAS RN: 3330-14-1</p>	<p>H1625 25g</p> $\text{CF}_3\text{CF}_2\text{CF}_2\text{O}-\left(\overset{\text{F}}{\underset{\text{CF}_3}{\text{C}}}-\text{CF}_2\text{O}\right)_2-\text{CHFCF}_3$ <p>1,1,1,2,2,3,3-Heptafluoro-3-[[1,1,1,2,3,3,3-hexafluoro-3-[[1,1,1,2,3,3-hexafluoro-3-(1,2,2,2-tetrafluoroethoxy)propan-2-yl]oxy]propan-2-yl]oxy]propane CAS RN: 3330-16-3</p>		
<p>I1044 25g</p> $\text{CF}_3\text{CF}_2\text{CF}_2\text{O}-\left(\overset{\text{F}}{\underset{\text{CF}_3}{\text{C}}}-\text{CF}_2\text{O}\right)_3-\text{CHFCF}_3$ <p>1,1,1,2,4,4,5,7,7,8,10,10,11,13,13,14,14,15,15,15-Icosafluoro-5,8,11-tris(trifluoromethyl)-3,6,9,12-tetraoxapentadecane CAS RN: 26738-51-2</p>	<p>T3538 25g</p> $\text{CF}_3\text{CF}_2\text{CF}_2\text{O}-\left(\overset{\text{F}}{\underset{\text{CF}_3}{\text{C}}}-\text{CF}_2\text{O}\right)_4-\text{CHFCF}_3$ <p>1,1,1,2,4,4,5,7,7,8,10,10,11,13,13,14,16,16,17,17,18,18-Tricosafluoro-5,8,11,14-tetrakis(trifluoromethyl)-3,6,9,12,15-pentaoxaoctadecane CAS RN: 37486-69-4</p>	<p>T3069 5g 25g 100g</p> $\text{F}-\text{C}(\text{F})_2-\text{O}-\text{C}(\text{F})_2-\text{F}$ <p>1,1,2,2-Tetrafluoroethyl 2,2,3,3-Tetrafluoropropyl Ether CAS RN: 16627-68-2</p>		
<p>T3057 5g 25g</p> $\text{F}-\text{C}(\text{F})_2-\text{O}-\text{C}(\text{F})_2-\text{CF}_3$ <p>1,1,2,2-Tetrafluoroethyl 2,2,2-Trifluoroethyl Ether CAS RN: 406-78-0</p>	<p>D5223 5g 25g</p> $\text{NC}(\text{CF}_2)_5\text{O}-\overset{\text{F}}{\text{C}}=\text{CF}_2$ <p>2,2,3,3,4,4,5,5,6,6-Decafluoro-6-[[1,2,2-trifluorovinyl]oxy]-hexanenitrile CAS RN: 120903-40-4</p>	<p>T3493 5g 25g</p> $\text{NCCF}_2\text{CF}_2\text{O}-\overset{\text{CF}_3}{\underset{\text{F}}{\text{C}}}-\text{CF}_2\text{O}-\overset{\text{F}}{\text{C}}=\text{CF}_2$ <p>2,2,3,3-Tetrafluoro-3-[[1,1,1,2,3,3-hexafluoro-3-[[1,2,2-trifluorovinyl]oxy]propan-2-yl]oxy]propionitrile CAS RN: 69804-19-9</p>	<p>B1240 5g 25g</p> $\text{CF}_3-\text{C}(=\text{O})-\text{CH}_2-\text{Br}$ <p>1-Bromo-3,3,3-trifluoroacetone CAS RN: 431-35-6</p>	
<p>C0993 1g 5g</p> $\text{F}-\text{C}(\text{F})_2-\text{C}(=\text{O})-\text{CF}_3 \cdot \text{H}_2\text{O}$ <p>Chloropentafluoroacetone Monohydrate CAS RN: 6984-99-2</p>	<p>D1729 5g</p> $\text{CF}_3(\text{CF}_2)_2-\text{C}(=\text{O})-\text{CH}_2-\text{C}(=\text{O})-\text{C}(\text{CH}_3)_2$ <p>2,2-Dimethyl-6,6,7,7,8,8,8-heptafluoro-3,5-octanedione CAS RN: 17587-22-3</p>	<p>P1363 5g</p> $\text{CF}_3(\text{CF}_2)_4-\text{C}(=\text{O})-\text{CH}_2\text{CH}_3$ <p>Ethyl Undecafluoroamyl Ketone CAS RN: 383177-55-7</p>	<p>H0425 5g 25g</p> $\text{CF}_3-\text{C}(=\text{O})-\text{CF}_3 \cdot x\text{H}_2\text{O}$ <p>Hexafluoroacetone Hydrate CAS RN: 34202-69-2</p>	<p>H0476 5g 25g</p> $\text{CF}_3-\text{C}(=\text{O})-\text{CH}_2-\text{C}(=\text{O})-\text{CF}_3$ <p>Hexafluoroacetylacetone CAS RN: 1522-22-1</p>
<p>N0645 5g 25g</p> $\text{CF}_3(\text{CF}_2)_3-\text{C}(=\text{O})-\text{CH}_3$ <p>Methyl Nonafluorobutyl Ketone CAS RN: 678-18-2</p>	<p>P1452 5g</p> $\text{CF}_3(\text{CF}_2)_6-\text{C}(=\text{O})-\text{CH}_3$ <p>Methyl Pentadecafluoroheptyl Ketone CAS RN: 754-85-8</p>	<p>U0071 5g</p> $\text{CF}_3(\text{CF}_2)_4-\text{C}(=\text{O})-\text{CH}_3$ <p>Methyl Undecafluoroamyl Ketone CAS RN: 2708-07-8</p>	<p>T2037 100mg</p> $\text{CH}_2-\overset{\text{O}}{\underset{\text{O}}{\text{C}}}(\text{CF}_2)_6\text{CF}_3$ <p>9<i>H</i>,9<i>H</i>-Triacontafluoro-8,10-heptadecanedione CAS RN: 36554-97-9</p>	<p>T2997 5g 25g</p> $\text{CF}_3-\text{C}(=\text{O})-\text{CH}_2-\text{C}(=\text{O})-\text{C}_6\text{H}_4-\text{CH}_3$ <p>4,4,4-Trifluoro-1-(<i>p</i>-tolyl)-1,3-butanedione CAS RN: 720-94-5</p>
<p>Fluorous Carboxylic Acids, Anhydrides and Halides</p>	<p>P1449 25g</p> $\text{CF}_3(\text{CF}_2)_6-\text{C}(=\text{O})-\text{O}^- \text{NH}_4^+$ <p>Ammonium Pentadecafluoro-octanoate CAS RN: 3825-26-1</p>	<p>B1698 5g</p> $\text{CF}_3(\text{CF}_2)_2\text{O}-\overset{\text{CF}_3}{\text{C}}(\text{F})-\text{CF}_2\text{O}-\overset{\text{CF}_3}{\text{C}}(\text{F})-\text{O}-\text{C}(=\text{O})-\text{F}$ <p>2,5-Bis(trifluoromethyl)-3,6-dioxoundecafluorononanoyl Fluoride CAS RN: 2641-34-1</p>	<p>D4164 5g</p> $\text{F}-\text{C}(\text{F})_2-\text{C}(=\text{O})-\text{O}-\text{C}(=\text{O})-\text{C}(\text{F})_2-\text{F}$ <p>Difluoroacetic Anhydride CAS RN: 401-67-2</p>	<p>D2465 5g 25g</p> $\text{HO}-\text{C}(=\text{O})-(\text{CF}_2)_6-\text{C}(=\text{O})-\text{OH}$ <p>Dodecafluorosuberlic Acid CAS RN: 678-45-5</p>
<p>H1234 1g</p> $\text{CF}_3(\text{CF}_2)_9-\text{C}(=\text{O})-\text{OH}$ <p>Heneicosafluoroundecanoic Acid CAS RN: 2058-94-8</p>	<p>H0843 5g 25g</p> $\text{CF}_3(\text{CF}_2)_7-\text{C}(=\text{O})-\text{OH}$ <p>Heptadecafluorononanoic Acid CAS RN: 375-95-1</p>	<p>H1502 1g</p> $\text{CF}_3(\text{CF}_2)_7\text{CH}_2\text{CH}_2-\text{C}(=\text{O})-\text{OH}$ <p>2<i>H</i>,2<i>H</i>,3<i>H</i>,3<i>H</i>-Heptadecafluoroundecanoic Acid CAS RN: 34598-33-9</p>	<p>H0024 25g 100g</p> $\text{CF}_3\text{CF}_2\text{CF}_2-\text{C}(=\text{O})-\text{OH}$ <p>Heptafluorobutyric Acid CAS RN: 375-22-4</p>	<p>H0337 10g</p> $\text{CF}_3\text{CF}_2\text{CF}_2-\text{C}(=\text{O})-\text{O}-\text{C}(=\text{O})-\text{CF}_2\text{CF}_2\text{CF}_3$ <p>Heptafluorobutyric Anhydride CAS RN: 336-59-4</p>
<p>H0508 5g 25g</p> $\text{CF}_3\text{CF}_2\text{CF}_2-\text{C}(=\text{O})-\text{Cl}$ <p>Heptafluorobutryl Chloride CAS RN: 375-16-6</p>	<p>H0892 5g 25g</p> $\text{HO}-\text{C}(=\text{O})-(\text{CF}_2)_8-\text{C}(=\text{O})-\text{OH}$ <p>Hexadecafluorosebacic Acid CAS RN: 307-78-8</p>	<p>H0658 10g 25g</p> $\text{HO}-\text{C}(=\text{O})-(\text{CF}_2)_3-\text{C}(=\text{O})-\text{OH}$ <p>Hexafluoroglutamic Acid CAS RN: 376-73-8</p>	<p>H0743 1g 5g</p> $\text{Cl}-\text{C}(=\text{O})-(\text{CF}_2)_3-\text{C}(=\text{O})-\text{Cl}$ <p>Hexafluoroglutaryl Dichloride CAS RN: 678-77-3</p>	<p>N0607 5g</p> $\text{CF}_3(\text{CF}_2)_8-\text{C}(=\text{O})-\text{OH}$ <p>Nonadecafluorodecanoic Acid CAS RN: 335-76-2</p>

N0605 5g 25g  Nonafluorovaleric Acid CAS RN: 2706-90-3	N0809 5g  Nonafluorovaleryl Fluoride CAS RN: 375-62-2	O0260 5g 25g  Octafluoroadipic Acid CAS RN: 336-08-3	P0764 10g 25g  Pentadecafluorooctanoic Acid CAS RN: 335-67-1	P1125 25g 100g  Pentafluoropropionic Acid CAS RN: 422-64-0
T2492 1g 5g  Tricosafluorododecanoic Acid CAS RN: 307-55-1	T1545 5g 25g  Tridecafluoroheptanoic Acid CAS RN: 375-85-9	U0067 5g 25g  Undecafluorohexanoic Acid CAS RN: 307-24-4	U0075 5g  Undecafluorohexanoyl Fluoride CAS RN: 355-38-4	<h2 style="color: #008080;">Fluorous Esters</h2>
H0744 1g  Diethyl Hexafluoroglutarate CAS RN: 424-40-8	D3589 1g 5g  Dimethyl Hexafluoroglutarate CAS RN: 1513-62-8	D3590 1g 5g  Dimethyl Octafluoroadipate CAS RN: 3107-98-0	D3588 1g 5g  Dimethyl Tetrafluorosuccinate CAS RN: 356-36-5	
E1018 5g 25g  Ethyl 4,4-Difluoroacetate CAS RN: 352-24-9	E0547 1g  Ethyl 3-Ethoxy-2,2-difluoro-3-hydroxypropionate CAS RN: 141546-97-6	H1038 5g  Ethyl Heptafluorononanoate CAS RN: 30377-52-7	H0594 5g 25g  Ethyl Heptafluorobutyrate CAS RN: 356-27-4	N0689 5g  Ethyl Nonafluorovaleate CAS RN: 424-36-2
E1022 5g 25g  Ethyl 5H-Octafluorovaleate CAS RN: 2795-50-8	P1062 5g  Ethyl Pentafluoropropionylacetate CAS RN: 663-35-4	T0432 25g 100g 500g  Ethyl Trifluoroacetate CAS RN: 383-63-1	E0830 1g 5g  Ethyl 4,4,4-Trifluorobutyrate CAS RN: 371-26-6	E0772 5g 25g  Ethyl 4,4,4-Trifluorocrotonate CAS RN: 25597-16-4
M1915 5g 25g  Methyl Heptafluorononanoate CAS RN: 51502-45-5	H1033 5g 25g  Methyl Heptafluorobutyrate CAS RN: 356-24-1	M2022 5g 25g  Methyl Heptafluoroisobutyrate CAS RN: 680-05-7	M1916 5g 25g  Methyl Nonadecafluorodecanoate CAS RN: 307-79-9	M1912 5g  Methyl Nonafluorovaleate CAS RN: 13038-26-1
P1453 5g  Methyl Pentadecafluorooctanoate CAS RN: 376-27-2	M1917 5g 25g  Methyl Tricosafluorododecanoate CAS RN: 56554-52-0	M1914 5g 25g  Methyl Tridecafluoroheptanoate CAS RN: 14312-89-1	M2496 1g 5g  Methyl 2-(Trifluoromethyl)-3,3,3-trifluoropropionate CAS RN: 360-54-3	M1913 5g  Methyl Undecafluorohexanoate CAS RN: 424-18-0
M2030 5g  Methyl 2,5-Bis(trifluoromethyl)-3,6-dioxanadecafluorononanoate (mixture of isomers) CAS RN: 26131-32-8	B2340 1g 5g  1,6-Bis(acryloyloxy)-2,2,3,3,4,4,5,5-octafluorohexane CAS RN: 2264-01-9	B5785 1g 5g  1,6-Bis(acryloyloxy)-2,2,3,3,4,4,5,5-octafluorohexane (stabilized with 4-Hydroxy-TEMPO) CAS RN: 2264-01-9	A1330 10g  1H,1H,2H,2H-Heptafluorodecyl Acrylate CAS RN: 27905-45-9	N0977 5g 25g  1H,1H,2H,2H-Nonafluorohexyl Acrylate CAS RN: 52591-27-2

N1014 5g 25g $\text{CH}_2=\text{C}(\text{CH}_3)-\text{C}(=\text{O})-\text{OCH}_2\text{CH}_2(\text{CF}_2)_3\text{CF}_3$ 1 <i>H</i> ,1 <i>H</i> ,2 <i>H</i> ,2 <i>H</i> -Nonafluorohexyl Methacrylate CAS RN: 1799-84-4	O0318 5g 25g $\text{CH}_2=\text{CH}-\text{C}(=\text{O})-\text{OCH}_2(\text{CF}_2)_4\text{H}$ 1 <i>H</i> ,1 <i>H</i> ,5 <i>H</i> -Octafluoropentyl Acrylate CAS RN: 376-84-1	O0481 5g 25g $\text{CH}_2=\text{C}(\text{CH}_3)-\text{C}(=\text{O})-\text{OCH}_2(\text{CF}_2)_4\text{H}$ 1 <i>H</i> ,1 <i>H</i> ,5 <i>H</i> -Octafluoropentyl Methacrylate (stabilized with MEHQ) CAS RN: 355-93-1	M1433 5g 25g $\text{CH}_2=\text{C}(\text{CH}_3)-\text{C}(=\text{O})-\text{OCH}_2(\text{CF}_2)_4\text{H}$ 1 <i>H</i> ,1 <i>H</i> ,5 <i>H</i> -Octafluoropentyl Methacrylate CAS RN: 355-93-1	P1754 1g 5g 25g $\text{CH}_2=\text{CH}-\text{C}(=\text{O})-\text{OCH}_2(\text{CF}_2)_6\text{CF}_3$ 1 <i>H</i> ,1 <i>H</i> -Pentadecafluoro- <i>n</i> -octyl Acrylate CAS RN: 307-98-2	
T3259 5g 25g $\text{CH}_2=\text{C}(\text{CH}_3)-\text{C}(=\text{O})-\text{OCH}_2\text{CH}_2(\text{CF}_2)_5\text{CF}_3$ 1 <i>H</i> ,1 <i>H</i> ,2 <i>H</i> ,2 <i>H</i> -Tridecafluoro- <i>n</i> -octyl Methacrylate CAS RN: 2144-53-8	N1107 5g 25g $\text{CH}_2=\text{CH}-\text{C}(=\text{O})-\text{OCH}_2\text{CH}_2(\text{CF}_2)_3\text{CF}_3$ 1 <i>H</i> ,1 <i>H</i> ,2 <i>H</i> ,2 <i>H</i> -Nonafluorohexyl Acrylate (stabilized with TBC) CAS RN: 2591-27-2	H1674 5g 25g $\text{CH}_2=\text{C}(\text{CH}_3)-\text{C}(=\text{O})-\text{OCH}_2\text{CF}_2\text{CF}_2\text{CF}_3$ 2,2,3,3,4,4-Heptafluorobutyl Methacrylate (stabilized with MEHQ) CAS RN: 13695-31-3	Fluorous Alkyl Halides		
B3222 5g 25g $\text{BrCF}_2\text{CF}_2\text{CH}=\text{CH}_2$ 4-Bromo-3,3,4,4-tetrafluoro-1-butene CAS RN: 18599-22-9	D3572 1g 5g $\text{Br}(\text{CF}_2)_6\text{Br}$ 1,6-Dibromododecafluorohexane CAS RN: 918-22-9	D3587 1g 5g $\text{Br}(\text{CF}_2)_8\text{Br}$ 1,8-Dibromohexadecafluorooctane CAS RN: 812-58-8	D3573 5g $\text{Br}(\text{CF}_2)_4\text{Br}$ 1,4-Dibromooctafluorobutane CAS RN: 335-48-8	D2804 5g 25g $\text{Cl}(\text{CF}_2)_8\text{Cl}$ 1,8-Dichlorohexadecafluorooctane CAS RN: 647-25-6	
D2333 10g $\text{I}(\text{CF}_2)_6\text{I}$ Dodecafluoro-1,6-diiodohexane CAS RN: 375-80-4	H0844 5g 25g $\text{CF}_3(\text{CF}_2)_9\text{I}$ Heneicosafluorodecyl Iodide CAS RN: 423-62-1	H1084 5g 25g $\text{CF}_3(\text{CF}_2)_7\text{CH}_2\text{CH}_2\text{I}$ 1 <i>H</i> ,1 <i>H</i> ,2 <i>H</i> ,2 <i>H</i> -Perfluorodecyl Iodide CAS RN: 2043-53-0	H0946 5g 25g $\text{CF}_3(\text{CF}_2)_7\text{Br}$ Perfluoro- <i>n</i> -octyl Bromide CAS RN: 423-55-2	P1084 25g $\text{CF}_3(\text{CF}_2)_7\text{I}$ Perfluoro- <i>n</i> -octyl Iodide CAS RN: 507-63-1	
H0689 5g $\text{CF}_3\text{CF}_2\text{CF}_2\text{Br}$ Heptafluoropropyl Bromide CAS RN: 422-85-5	H0596 5g 25g $\text{CF}_3\text{CF}_2\text{CF}_2\text{I}$ Perfluoropropyl Iodide CAS RN: 754-34-7	N0808 5g $\text{CF}_3(\text{CF}_2)_8\text{Br}$ Nonadecafluorononyl Bromide CAS RN: 558-96-3	N0499 25g 100g 500g $\text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{I}$ Nonafluorobutyl Iodide CAS RN: 423-39-2	P1155 5g 25g $\text{CF}_3(\text{CF}_2)_3\text{CH}_2\text{CH}_2\text{I}$ 2-(Nonafluorobutyl)ethyl Iodide CAS RN: 2043-55-2	
D2329 5g 25g $\text{I}(\text{CF}_2)_4\text{I}$ Octafluoro-1,4-diiodobutane CAS RN: 375-50-8	P1753 5g $\text{CF}_3(\text{CF}_2)_6\text{Br}$ Pentadecafluoroheptyl Bromide CAS RN: 375-88-2	P1839 5g $\text{CF}_3(\text{CF}_2)_6\text{I}$ Pentadecafluoroheptyl Iodide CAS RN: 335-58-0	T2914 5g $\text{F}-\text{S}(=\text{O})_2-\text{CF}_2\text{CF}_2\text{OCF}_2\text{CF}_2\text{I}$ Tetrafluoro-2-(tetrafluoro-2-iodoethoxy)ethanesulfonyl Fluoride CAS RN: 66137-74-4	T2482 1g 5g $\text{CF}_3(\text{CF}_2)_5\text{CH}_2\text{I}$ 1 <i>H</i> ,1 <i>H</i> -Tridecafluoroheptyl Iodide CAS RN: 212563-43-4	
T2479 5g 25g $\text{CF}_3(\text{CF}_2)_5\text{Br}$ Tridecafluorohexyl Bromide CAS RN: 335-56-8	T1098 5g 25g $\text{CF}_3(\text{CF}_2)_5\text{I}$ Tridecafluorohexyl Iodide CAS RN: 355-43-1	T2074 5g 25g $\text{CF}_3(\text{CF}_2)_5\text{CH}_2\text{CH}_2\text{I}$ 1 <i>H</i> ,1 <i>H</i> ,2 <i>H</i> ,2 <i>H</i> -Perfluoro- <i>n</i> -octyl Iodide CAS RN: 2043-57-4	U0081 5g 25g $\text{CF}_3(\text{CF}_2)_4\text{I}$ Undecafluoropentyl Iodide CAS RN: 638-79-9	Fluorous Sulfonic Acids & their derivatives	
H1176 25g 250g $\text{C}_8\text{F}_{17}-\text{S}(=\text{O})_2-\text{F}$ Perfluoro-1-octanesulfonyl Fluoride (mixture of <i>n</i> - and <i>iso</i> - isomers) CAS RN: 307-35-7	D5299 1g 5g $\text{CF}_3-\text{S}(=\text{O})_2-\text{OCH}_2\text{CH}_2-\text{F}$ 2,2-Difluoroethyl Trifluoromethanesulfonate CAS RN: 74427-22-8	N0710 25g $\text{CF}_3(\text{CF}_2)_3-\text{S}(=\text{O})_2-\text{OLi}$ Lithium Nonafluoro-1-butanesulfonate CAS RN: 131651-65-5	N0709 5g 25g $\text{CF}_3(\text{CF}_2)_3-\text{S}(=\text{O})_2-\text{OH}$ Nonafluoro-1-butanefluorosulfonic Acid CAS RN: 375-73-5	P1098 25g 250g $\text{CF}_3(\text{CF}_2)_3-\text{S}(=\text{O})_2-\text{F}$ Perfluoro-1-butanefluorosulfonic Acid CAS RN: 375-72-4	

N0711 25g  Potassium Nonafluoro-1-butanesulfonate CAS RN: 29420-49-3	T2914 5g  Tetrafluoro-2-(tetrafluoro-2-iodoethoxy)-ethanesulfonyl Fluoride CAS RN: 66137-74-4	N0677 5g  2,2,2-Trifluoroethyl Perfluorobutanesulfonate CAS RN: 79963-95-4	Others	E0462 10g  3-(Perfluoro- <i>n</i> -octyl)propenoxide CAS RN: 38565-53-6
H1459 200mg  (1 <i>H</i> ,1 <i>H</i> ,2 <i>H</i> ,2 <i>H</i> -Perfluorodecyl)phosphonic Acid CAS RN: 80220-63-9	H1300 1g 5g  1 <i>H</i> ,1 <i>H</i> -Perfluorobutylamine CAS RN: 374-99-2	H0926 25g  Heptafluorobutyramide CAS RN: 662-50-0	H0467 5g 25g  1-(Perfluorobutyl)imidazole CAS RN: 32477-35-3	H1056 1g 5g  1,1,2,2,3,3-Hexafluoropropane-1,3-disulfonimide CAS RN: 84246-29-7
H1057 1g 5g  Lithium 1,1,2,2,3,3-Hexafluoropropane-1,3-disulfonimide CAS RN: 189217-62-7	P1106 25g  3-[2-(Perfluorohexyl)ethoxy]-1,2-epoxypropane CAS RN: 122193-68-4	P1080 1g 5g  (Perfluorohexyl)phenyliodonium Trifluoromethanesulfonate CAS RN: 77758-84-0	P1081 1g  (Perfluoro- <i>n</i> -octyl)phenyliodonium Trifluoromethanesulfonate CAS RN: 77758-89-5	N0712 1g 5g  Potassium Bisnonafluoro-1-butanesulfonimide CAS RN: 129135-87-1
H1058 1g 5g  1,1,2,2,3,3-Hexafluoropropane-1,3-disulfonimide Potassium Salt CAS RN: 588668-97-7	P1162 25g  <i>N</i> -Propyl- <i>N</i> -(2,3-dihydroxypropyl)-perfluoro- <i>n</i> -octylsulfonamide CAS RN: 2262-49-9	P1163 25g  <i>N</i> -Propyl- <i>N</i> -(2,3-epoxypropyl)-perfluoro- <i>n</i> -octylsulfonamide CAS RN: 77620-64-5	T2876 5g  Triethoxy-1 <i>H</i> ,1 <i>H</i> ,2 <i>H</i> ,2 <i>H</i> -heptadecafluorodecylsilane CAS RN: 101947-16-4	T1770 5g 25g  Triethoxy-1 <i>H</i> ,1 <i>H</i> ,2 <i>H</i> ,2 <i>H</i> -tridecafluoro- <i>n</i> -octylsilane CAS RN: 51851-37-7
T2720 5g 25g  Trimethoxy(3,3,3-trifluoropropyl)silane CAS RN: 429-60-7	T3518 25g  Trichloro(3,3,3-trifluoropropyl)silane CAS RN: 592-09-6	T3246 1g 5g  Triethoxy[5,5,6,6,7,7,7-heptafluoro-4,4-bis(trifluoromethyl)heptyl]-silane CAS RN: 130676-81-2	T3560 5g 25g  Trimethoxy(1 <i>H</i> ,1 <i>H</i> ,2 <i>H</i> ,2 <i>H</i> -tridecafluoro- <i>n</i> -octyl)silane CAS RN: 85857-16-5	C3427 5g  Chlorodimethyl(1 <i>H</i> ,1 <i>H</i> ,2 <i>H</i> ,2 <i>H</i> -perfluorodecyl)silane CAS RN: 85857-16-5
C1857 1g 5g  Chlorodimethyl-(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro- <i>n</i> -octyl)silane CAS RN: 102488-47-1	T3593 1g 5g  Trimethyl(heptafluoropropyl)silane CAS RN: 3834-42-2	T3594 1g 5g  Trimethyl(nonafluorobutyl)silane CAS RN: 204316-01-8	T3595 1g 5g  Trimethyl(tridecafluorohexyl)silane CAS RN: 135841-49-5	T0859 0.1mL  2,4,6-Tris(perfluoropropyl)-1,3,5-triazine CAS RN: 915-76-4
P1134 10g  Tris(1 <i>H</i> ,1 <i>H</i> ,5 <i>H</i> -octafluoropentyl) Phosphate CAS RN: 355-86-2	T0828 100mg  2,4,6-Tris(perfluoroheptyl)-1,3,5-triazine CAS RN: 21674-38-4	T0858 0.1mL  2,4,6-Tris(pentafluoroethyl)-1,3,5-triazine CAS RN: 858-46-8	T3353 1g 5g  Tris(1,1,1,3,3,3-hexafluoro-2-propyl) Phosphite CAS RN: 66470-81-3	U0083 1g 5g  1 <i>H</i> ,1 <i>H</i> -Undecafluorohexylamine CAS RN: 355-34-0

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