

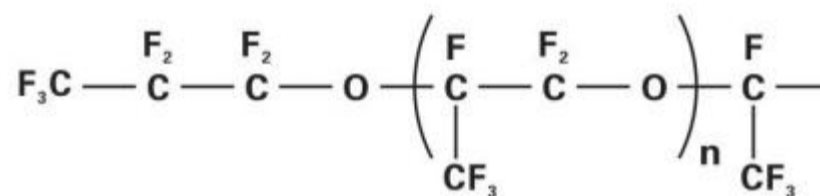
Products Equivalent Alternative Cross Reference

Internal Cross Reference Only

HFPO Type PFPE Functional Intermediates

Gemini® PFPE Functional Fluids are derived from Hexafluoropropylene Oxide (HFPO), they are mono-functional Hexafluoropropylene polyether backbone coupled with functional end-groups. Intermediates are K type based on backbone structure (CF₃CF₂CF₂O(CF(CF₃)CF₂O)_nCF(CF₃)--). PFPE Functional Intermediates have monofunctional groups like Alcohol, Carboxyl, Methyl Ester, Amide, Allyl Ether, Amide Ether Alcohol, Diol, Silane and Acrylate. They have the best Molecular Range and Functionality Purity in the world. Contact us if you need other functional groups or higher / lower MW.

Our PFPE Functional Intermediates are the critical precursors to lots of PFPE surfactants and have fantastic applications in Hydrophobic / Oleophobic Coatings, Low Refractive Index Coatings / Claddings, Optical Thin Film Coatings, Plastic Hardcoatings, Functional Paint / Dye, Electronic Materials, Optical Adhesives, Encapsulation / Sealant Materials, Cross Linking Agents etc.



	Structure	Equivalent Alternative
PFPE Alcohol	HFPO-OH	Dupont Krytox functional fluids PFPE AL
PFPE Carboxylic Acid	HFPO-COOH	Dupont Krytox functional fluids PFPE CA 157 FS H/L
PFPE Methyl Ester	HFPO-COOCH ₃	Dupont Krytox functional fluids PFPE ME
PFPE Amide	HFPO-CONH ₂	Only we produce in the world
PFPE Allyl Ether	HFPO-CH ₂ -O-CH ₂ -CH=CH ₂	Dupont Krytox functional fluids PFPE AE
PFPE Amide Ether Alcohol	HFPO-CONH-(CH ₂) ₂ -OH	3M HFPO Oligomer Alcohol (HFPO)k-alc
PFPE Amide (Meth)Acrylate	HFPO-CONH-X-(CH ₂) ₂ -OC(O)C(CH ₃)=CH ₂	3M HFPO Oligomer Acrylate HFPO MAR
PFPE (Meth)Acrylate	HFPO-X-CH ₂ -OC(O)C(CH ₃)=CH ₂	DAIKIN OPTOOL DAC-HP (effective compound)
PFPE Silane	HFPO-X-Si(OR) ₃	Dupont PFPE Silane Krytox KS 1220 (effective compound)
PFPE Diol		Solvay Fluorolink E10-H / E10 / E / D10-H / D10 / D / Z DOL

PFPE Derivatives Formulated Products

	Our Type	Equivalent Alternative
PFPE Silane	AFD-809	DAIKIN OPTOOL UD 509
PFPE Acrylate	HCPA-620	DAIKIN OPTOOL DAC-HP / SHIN-ETSU SUBELYN KY-1203
	HCPA-S50	Solvay Fomblin MD40
	PCBC-725/7210	DAIKIN OPTOACE WP-140 / 3M Novec EGC 2708

PFPE Greases Oils

We have all grades of PFPE greases oils famous brand Gemini®, they are top notch lubricants for various extreme conditions.

Our Type	Equivalent Alternative
WC-20/24/32/37/41/50/64/69/73	Solvay Fomblin Y04/Y06/Y15/Y25/Y45/YU700/YR/YPL1500/YR1800
Our Type	Equivalent Alternative
MC-100/101/102/103/104/105/106/107	Dupont Krytox GPL-100/101/102/103/104/105/106/107
MC-200/201/202/203/204/205/206/207	Dupont Krytox GPL-200/201/202/203/204/205/206/207
MC-210/211/212/213/214/215/216/217	Dupont Krytox GPL-210/211/212/213/214/215/216/217
MC-220/221/222/223/224/225/226/227	Dupont Krytox GPL-220/221/222/223/224/225/226/227
MC-2C0/2C1/2C2/2C3/2C4/2C5/2C6/2C7	Dupont Krytox GPL-2E0/2E1/2E2/2E3/2E4/2E5/2E6/2E7
MC-2P4/2P5/2P6/2P7	Dupont Krytox GPL-294/295/296/297
SA-1S0/1S1/1S2/1S3/1S4/1S5/1S6/1S7	Dupont Krytox XP-1A0/1A1/1A2/1A3/1A4/1A5/1A6/1A7
SA-2S0/2S1/2S2/2S3/2S4/2S5/2S6/2S7	Dupont Krytox XP-2A0/2A1/2A2/2A3/2A4/2A5/2A6/2A7
SA-2P4/2P5/2P6/2P7	Dupont Krytox XP-2C5
UHT-500/750/1000	Dupont Krytox XHT-500/750/1000
UHT-AC/ACX	Dupont Krytox XHT-AC/ACX
UHT-ACC/ACXC	Dupont Krytox XHT-RUF/RUFX
UHT-ACP/ACXP/ACZP	Dupont Krytox GPL-577/XHT-EP298/EP299
UHT-BDX/BDZ/BDXP	Dupont Krytox XHT-BDX/BDZ/NMX
UHT-SBS/SC	Dupont Krytox TM7S/TM100
RG-11S	Dupont Krytox NRT-8805
RG-4/9/25/25S/7P/47	Dupont Krytox NRT-8900/8904/8906/8906A/8908/8950
EHV-F1/E5/T7	Dupont Krytox EG-2000/EG-3000/Krytox LVP
VEK-1018/1031/1052	Dupont Krytox AUT-1045
VEK-2018/2031/2052	Dupont Krytox AUT-2045
VEK-2218/2231/2252	Dupont Krytox AUT-2245
VEK-2C18/2C31/2C52	Dupont Krytox AUT-2E45
VEK-2S18/2S31/2S52	Dupont Krytox AUT-2A45

PFPE Vacuum Pump Oils

Our PFPE vacuum pump oils are K type full shielding structure, they have the best chemically inert properties in all types of PFPE like K, Y, Z.

VPO-13X series are for ultra high vacuum applications.

Our Type	Equivalent Alternative
VPO-1201/1202/1203/1204/1205	Dupont Krytox Vacuum Pump Fluids 1506/1514/1525/1531/1618
VPO-1305/1326/1335	Dupont Krytox Vacuum Pump Fluids 1645/16256/16350

PFPE Compressor Oils KC / YC Series

KC/YC Series are Perfluoropolyether fluids for compressor and vacuum pump in harsh conditions facing oxygen and reactive chemicals like halogen, sulfuric anhydride etc. They are stable in ultra low temperature, nontoxic, nonflammable, biologically inert, compatible with metals, plastics and elastomers, unaffected by common solvent and water, low viscosity, low surface tension, resistance to chemicals, high safety in operation.

Our Type	Equivalent Alternative
KC-08/55/80/200/250	Solvay Fomblin Y LC 08/55/80/200/250
YC-100/120	Solvay Fomblin Y LOX 100/120

PFPE Vacuum Pump Oils

VPO-14X are Perfluoropolyether fluids, they are nontoxic, nonflammable, biologically inert, compatible with metals, plastics and elastomers, unaffected by common solvent and water, high density, low surface tension, resistance to chemicals.

High Level PFPE VPO-15X series are ultra high vacuum pump oils, they are high level vacuum pump oils for high demanding vacuum systems.

Our Type	Equivalent Alternative
VPO-1418/1425/1427/1433	Solvay Fomblin Y LVAC 06/6, 14/6, 16/6, 25/6
VPO-1528/1534/1541/1566	Solvay Fomblin Y HVAC 18/8, 25/9, 40/11, 140/13

Fluoro Surfactants

We have a diversified Fluoro Surfactant family. They are C6、 C8 Fluorocarbon.

Our Type	Equivalent Alternative
BH-10W	Dupont Zonyl FSO-100
BH-12W	Dupont Zonyl FSN-100
BH-13W	Dupont Capstone FS3100
BH-16W	Dupont Capstone FS60
BH-81C	Dupont Capstone FS81
BH-83C	Dupont Capstone FS83
BH-15W	Anti-cratering flow leveling wetting agent
BH-75S	Daikin FTONE GMW-605
BH-32S	Daikin FTONE GM-105
BH-31L	Daikin UNIDYNE TG-6501
BH-72T	Daikin UNIDYNE TG-9011
BH-71P	Daikin UNIDYNE TG-8111

Our Type	Equivalent Alternative
PCBD-520	3M Novec EGC 1700 / Daikin OPTOACE WP-140

PFPE Melt Compounding Polymer Additives

Our polymer additives POA are colorless、odorless、chemically inert、nonflammable fluids. They have excellent color、UV、thermal stability. Added to plastics and elastomers, they improve processing of polymers. POA also improve flow properties、throughput、uniform mixing/dispersion、gloss、surface lubricity and reduce squeak/noise. POA improve properties of thermoplastic and thermoset polymers by increasing tensile properties and wear、flex fatigue resistance、eliminating marring and scratching, making parts last longer. POA provide many advantages over other type process aids.

Our Type	Equivalent Alternative
POA-13/48/49	Dupont Fluoroguard PRO/PCA/SG

PFPE Dry Film Lubricant

Our dry film lub is a nonflammable silicone free solvent dispersion contains PFPE, it can form a dry translucent thin film, it has low coefficient of friction, chemical inertness and a wide functional temperature range, it has applications like different substrates lubrications between metal,plastic,ceramic etc, release agents in rubber & plastic industry, machinery parts, permanent lubrication in electronic devices, electrical switches and connectors, wire & cable uses, metal processing, high level home hardware & furniture, cutting blades & drill bits, garden equipment, conveyors, fasteners etc.

Our Type	Equivalent Alternative
DF-68M	Dupont Vydux 5675

Fluoro Solvents / Fluorinated Engineered Fluid

PFS Fluorinated Engineered Fluid are clear, colorless, low odor, nonflammable, zero ozone depletion potential fluids. They are low toxic, high density, high boiling point, low surface tension, non electrical conductive, high chemical and thermal stability. They are insoluble in water and compatible with most metals, plastics and elastomers. PFS-19X is hydrofluorocarbon (HFC), PFS-23X is hydrofluoroether (HFE), PFS-26X is perfluoro ketone (PFK). PFS is ideal for use in vapor degreasing applications as a pure, azeotropic component or co-solvent cleaner. Its outstanding properties make it useful for many applications like lubricant carrier, resin deposition carrier, water drying agent, diluting solvent for paints and coatings, aerosol formulation solvent, dielectric testing media, specialty solvent, dispersion media, reaction media, heat transfer media, air tight testing media etc. PFS can replace CFC, HCFC, PFC.

Our Type	Equivalent Alternative
PFS-190/191/193/195	HFC, PFC, Dupont Specialty Fluid Vertrel XF, 3M Novec 7100~7500, Asahiklin AE 3000
PFS-230	3M Novec Engineered Fluid HFE-7000
PFS-264	3M Novec Engineered Fluid 649
PFS-231	3M Novec Engineered Fluid HFE-7100
PFS-267	3M Novec Engineered Fluid 774
PFS-232	3M Novec Engineered Fluid HFE-7200
PFS-233	3M Novec Engineered Fluid HFE-7300
PFS-235	3M Novec Engineered Fluid HFE-7500
PFS-237	3M Novec Engineered Fluid HFE-7700

Perfluorinated Electronic Fluids

FLE/FL Perfluorinated Electronic Fluids are clear, colorless, odorless, nonflammable, zero ozone depletion potential fluids. They are non-toxic, non-corrosive, high density, wide range boiling point, low surface tension, high dielectric strength, high chemical and thermal stability. They are insoluble in water and compatible with most metals, plastics and elastomers. FLE/FL series are perfluorocarbon (PFC). Its outstanding properties make it useful for many applications like lubricant carrier, resin deposition carrier, vapor phase soldering, thermal management, inert reaction media, dielectric testing media, specialty solvent, electronic cooling, heat transfer media, thermal shock testing media, dielectric medium in power electronics and high voltage transformer etc. FLE/FL can replace CFC, HCFC.

Our Type	Equivalent Alternative
FLE-50	3M Fluorinert Electronic Fluids FC-3284
FLE-56	3M Fluorinert Electronic Fluids FC-72
FLE-95	3M Fluorinert Electronic Fluids FC-770
FLE-128	3M Fluorinert Electronic Fluids FC-3283
FLE-165	3M Fluorinert Electronic Fluids FC-40
FLE-175	3M Fluorinert Electronic Fluids FC-43
FLE-215	3M Fluorinert Electronic Fluids FC-70
FL-52	3M Performance Fluids PF-5052
FL-56	3M Performance Fluids PF-5056
FL-58	3M Performance Fluids PF-5058
FL-60	3M Performance Fluids PF-5060
FL-76	3M Performance Fluids PF-7600

Film Capacitor Vacuum Metallization PFPE Shielding Oils

Our PFPE metallization shielding oils are colorless, nonflammable, chemical inert, stable to oxidation fluids. They have outstanding evaporation properties allowing metallization processes to run at lower and more constant evaporation temperatures. The minimum residue upon evaporation enables best cost efficiency.

Our Type	Equivalent Alternative	
PBS-701	Dupont Krytox Metallization Fluid	CBF 100B
PBS-702	Dupont Krytox Metallization Fluid	CBF 100A
PBS-703	Dupont Krytox Metallization Fluid	CBF 103B

High/Low Boiler PFPE Heat Transfer Fluid

Our HB/LB series are the highest/low boiling points heat transfer fluids for various high-tech applications in the Electrical & Electronics and Semiconductors. They have low vapor pressure and evaporation tendency, high thermal stability and wide operating temperature range, good compatibility with metals, plastics and elastomers, excellent dielectric properties and chemical inertness with no fire hazard and flash point.

Our Type	Equivalent Alternative	
HB-096	Solvay Galden PFPE High Boiler	HT 270
HB-095	Solvay Galden PFPE High Boiler	HT 230
HB-094	Solvay Galden PFPE High Boiler	HT 200
HB-093	Solvay Galden PFPE High Boiler	HT 170
LB-092	Solvay Galden PFPE Low Boiler	HT 135
LB-091	Solvay Galden PFPE Low Boiler	HT 110
LB-090	Solvay Galden PFPE Low Boiler	HT 80
LB-089	Solvay Galden PFPE Low Boiler	HT 70
LB-088	Solvay Galden PFPE Low Boiler	HT 55

PFPE Electronic Testing Fluids

TH series PFPE Electronic Testing Fluids are clear, colorless, odorless, nonflammable, zero ozone depletion potential fluids. They are non-toxic, non-corrosive, high density, wide range boiling point, low surface tension, high dielectric strength, high chemical and thermal stability. They are insoluble in water and compatible with most metals, plastics and elastomers. Its outstanding properties make it useful for many applications like thermal management, dielectric testing media, thermal shock testing media, hermetic seal testing fluid etc.

Our Type	Equivalent Alternative
TH-41	Solvay PFPE Testing Electronic Fluids Galden DET
TH-43	Solvay PFPE Testing Electronic Fluids Galden D02TS
TH-45	Solvay PFPE Testing Electronic Fluids Galden D02
TH-47	Solvay PFPE Testing Electronic Fluids Galden D03
TH-49	Solvay PFPE Testing Electronic Fluids Galden D05

PFPE Cleaning Fluids

NB series are 55°C~135°C boiling points cleaning fluids for various high-tech applications in the Electrical & Electronics and Optical & Semiconductors. They have low vapor pressure and evaporation tendency, high thermal stability and wide operating temperature range, good compatibility with metals, plastics and elastomers, excellent dielectric properties and chemical inertness with no fire hazard and flash point.

Our Type	Equivalent Alternative
NB-088	Solvay PFPE Solvent Fluids Galden SV55
NB-089	Solvay PFPE Solvent Fluids Galden SV70
NB-090	Solvay PFPE Solvent Fluids Galden SV80
NB-091	Solvay PFPE Solvent Fluids Galden SV110
NB-092	Solvay PFPE Solvent Fluids Galden SV135



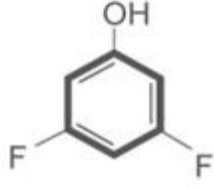
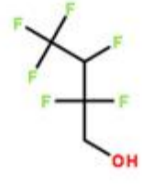
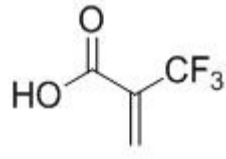
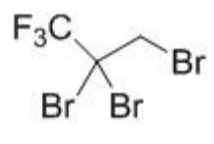
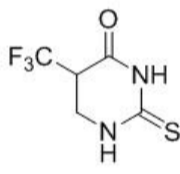
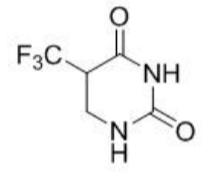
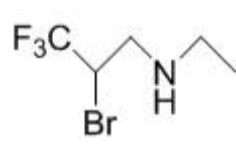
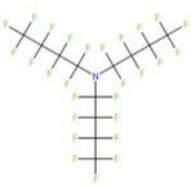
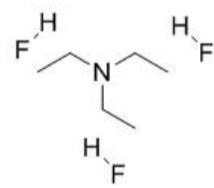
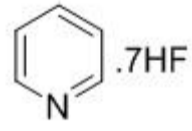
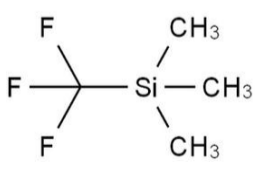
PFPE Vapor Phase Soldering Fluids

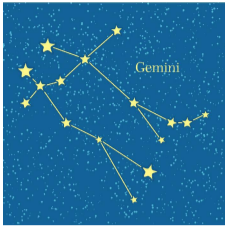
OB series are 200°C~260°C boiling points vapor phase soldering fluids for various high-tech applications in the Electrical & Electronics. They have low vapor pressure and evaporation tendency, high thermal stability and wide operating temperature range, good compatibility with metals, plastics and elastomers, excellent dielectric properties and chemical inertness with no fire hazard and flash point.

Our Type	Equivalent Alternative
OB-71	Solvay PFPE Vapor Phase Soldering Galden LS200
OB-73	Solvay PFPE Vapor Phase Soldering Galden LS215
OB-75	Solvay PFPE Vapor Phase Soldering Galden LS230
OB-77	Solvay PFPE Vapor Phase Soldering Galden HS240
OB-79	Solvay PFPE Vapor Phase Soldering Galden HS260

Fluorinated Building Blocks

We manufacture Rare Fluoro Intermediates for Pharmaceutical & Agrochemical, Liquid Crystal Display, Fluorotriazine Reactive Dye. Please contact us if you need us to cooperate R&D with customers to manufacture exclusive fluoride chemicals.

		
Cyanuric Fluoride	3,4,5-Trifluorophenol	3,5-Difluorophenol
CAS: 675-14-9	CAS: 99627-05-1	CAS: 2713-34-0
Reactive dye intermediate	TFT LCD intermediate、API、Pesticide	TFT LCD intermediate、API、Pesticide
		
2,2,3,4,4,4-Hexafluoro-1-butanol	2-(Trifluoromethyl)acrylic acid	1,2,2-Tribromo-3,3,3-Trifluoropropane
CAS: 382-31-0	CAS: 381-98-6	CAS: 421-90-9
Solvent、Hydrophobic、Dye、LED、API、Pesticide	API (Hepatitis、Cancer)、Pesticide	API、Pesticide
		
Tetrahydro-2-thioxo-5-(trifluoromethyl)-4(1H)-pyrimidinone	Hydrouracil,5-(trifluoromethyl)-(7CI,8CI);5-(Trifluoromethyl)-5,6-dihydrouracil	2-Bromo-N-ethyl-3,3,3-trifluoro-1-propanamine
CAS: 90715-79-0	CAS: 2145-56-4	CAS: 121217-44-5
API (Cancer)、Pesticide	API (Cancer)、Pesticide	API、Pesticide
		
Perfluoro-n-tributylamine	Triethylamine trihydrofluorid	Hydrogen fluoride-pyridine
CAS: 311-89-7	CAS: 73602-61-6	CAS: 32001-55-1
Semicon heat transfer、Liquid seal、Fire retardant	API (Hepatitis B)、Pesticide	API、Pesticide
		
(Trifluoromethyl)trimethylsilane		
CAS: 81290-20-2		
API (Antidepressant、Arthritis、Type II diabetes)、Pesticide		



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