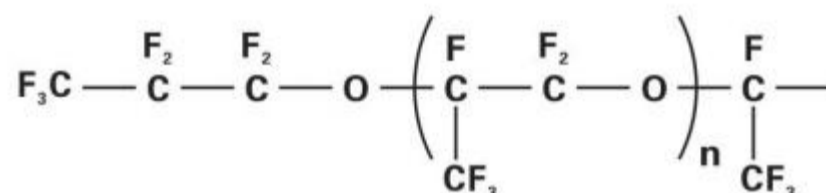


Gemini® ALL Products Catalog

HFPO Type PFPE Functional Intermediates

Gemini® PFPE Functional Fluids are derived from Hexafluoropropylene Oxide (HFPO), they are mono-functional Hexfluoropropylene 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.



Reaction Precursors & Effective Ingredients Raw materials

	Structure	Type	Molecular Weight
PFPE Alcohol	HFPO-OH	OH-7000	500<MW<1000
		OH-7100	1000<MW<2000
		OH-7200	2000<MW<3000
		OH-7300	3000<MW<4000
		OH-7700	7000<MW
PFPE Carboxyl	HFPO-COOH	CA	800<MW<8100
PFPE Methyl Ester	HFPO-COOCH ₃	ME	800<MW<8100
PFPE Amide	HFPO-CONH ₂	AM	800<MW<8100
PFPE Allyl Ether	HFPO-CH ₂ -O-CH ₂ -CH=CH ₂	ZAE-10	1000<MW<2000
		ZAE-20	2000<MW<3000
		ZAE-30	3000<MW<4000
		ZAE-70	7000<MW
PFPE Amide Ether Alcohol	HFPO-CONH-(CH ₂) ₂ -OH	AEA	800<MW<8100
PFPE Amide (Meth)Acrylate	HFPO-CONH-X-(CH ₂) ₂ -OC(O)C(CH ₃)=CH ₂	AMA	860<MW<8200
PFPE (Meth)Acrylate	HFPO-X-CH ₂ -OC(O)C(CH ₃)=CH ₂	MA	860<MW<8200
PFPE Silane	HFPO-X-Si(OR) ₃	SIL	860<MW<4000
PFPE Diol		DIA	870<MW<8200

PFPE Silane & Acrylate & Phosphate & Ammonium salt & Epoxy Acrylate Formulated Products

	Our Type	Remarks
PFPE Silane	ADF-809	PFPE Anti Fingerprint Fluid
PFPE Acrylate	HCPA-620	PFPE UV Curable PU Resin Coating Additive
	HCPA-S50	PFPE Functional Main Component of UV Formulation Resin
	PCBC-725/7210	PFPE PCB Conformal Coating
PFPE Epoxy Acrylate	PCA	PFPE Melt Compounding Polymer Additive
PFPE Phosphate Ester	PHP	PFPE Surface Treatment PFPE soluble antiwear additive
PFPE Carboxylic Acid Ammonium Salt	CBA	PFPE Anionic Surfactant Water Solution

PFPE Greases Oils

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

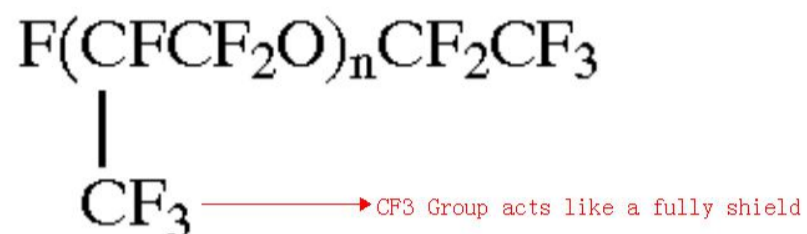
Product Series	Our Type	Remarks	
WC Series	WC-20/24/32/37/41/50/64/69/73	PFPE Oil	
MC Series	MC-100/101/102/103/104/105/106/107	PFPE Oil	Promotion MC-227
Multi Purpose Oils and Greases	MC-200/201/202/203/204/205/206/207	PFPE Grease	
	MC-210/211/212/213/214/215/216/217	PFPE Grease	
	MC-220/221/222/223/224/225/226/227	PFPE Grease	
MC Series	MC-2C0/2C1/2C2/2C3/2C4/2C5/2C6/2C7	PFPE Grease	
Extreme Pressure and Organic Recipe Greases	MC-2P4/2P5/2P6/2P7	PFPE Grease	
SA Series	SA-1S0/1S1/1S2/1S3/1S4/1S5/1S6/1S7	PFPE Oil	Promotion
Soluble Recipe and Extreme Pressure Oils and Greases	SA-2S0/2S1/2S2/2S3/2S4/2S5/2S6/2S7	PFPE Grease	
	SA-2P4/2P5/2P6/2P7	PFPE Grease	
UHT Series	UHT-500/750/1000	PFPE Oil	Promotion UHT-AC
Ultra High Temp Oils and Greases	UHT-AC/ACX	PFPE Grease	
	UHT-ACC/ACXC/SC	PFPE Grease	
	UHT-ACP/ACXP/ACZP	PFPE Grease	
	UHT-BDX/BDZ	PFPE Grease	
	UHT-BDXP	PFPE Grease	
	UHT-SBS	PFPE Grease	
RG Series	RG-11S	PFPE Oil	
Chemical Industry Reactive Gas Oils and Greases	RG-4/9/25	PFPE Grease	
	RG-25S	PFPE Grease	
	RG-7P	PFPE Grease	
	RG-47	PFPE Grease	
EHV Series	EHV-F1/E5/T7	PFPE Grease	
Vacuum Greases, Electronic Grade Greases			
VEK Series	VEK-1018/1031/1052	PFPE Oil	
Automotive Industry Oils and Greases	VEK-2018/2031/2052	PFPE Grease	
	VEK-2218/2231/2252	PFPE Grease	
	VEK-2C18/2C31/2C52	PFPE Grease	
	VEK-2S18/2S31/2S52	PFPE Grease	

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	Remarks
VPO-1201/1202/1203/1204/1205	PFPE
VPO-1305/1326/1335	PFPE



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	Remarks
KC-08/55/80/200/250	PFPE
YC-100/120	PFPE

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	Remarks
VPO-1418/1425/1427/1433	PFPE
VPO-1528/1534/1541/1566	PFPE

Fluoro Surfactants

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

Our Type	Remarks
BH-10W	Sparingly water soluble ethoxylated nonionic 100% solid fluorosurfactant for organic polymer, adhesive, graphic arts, wax polish
BH-12W	Water soluble ethoxylated nonionic 100% solid fluorosurfactant for organic polymer, paint and coating, metal electronics
BH-13W	Nonionic 100% solid fluorosurfactant for organic polymer, paint and coating, enabling better wetting, leveling and spreading
BH-16W	Anionic water soluble phosphate containing 40% solid fluorosurfactant for floor finish, wax, polish and architectural coating
BH-15W	Nonionic water soluble 10% solid fluorosurfactant for paint, ink and adhesive enabling better anti-cratering flow leveling wetting
BH-81C	Water soluble 33% solid coating additive enabling oil/water repellency and cleanability to low sheen latex paints and waterborne coatings
BH-83C	Solvent based nonionic 35% solid paint additive enabling oil/water repellency, chemical resistance and better wetting, spreading, leveling
BH-75S	Water soluble 25% solid stone protector
BH-32S	Solvent based 30% solid stone protector
BH-31L	Solvent based 30% solid leather protector
BH-72T	Cationic water soluble 25% solid water and oil repellent agent for textile
BH-71P	Anionic water soluble 20% solid water and oil repellent agent for paper

Our Type	Remarks
PCBD-520	Solvent based 20% solid fluoro PCB conformal coating

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	Remarks
POA-13/48/49	PFPE

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	Remarks
DF-68M	PFPE Solvent Dispersion

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	Remarks
PFS-190	Hydrofluorocarbon (HFC)
PFS-191	Hydrofluorocarbon (HFC)
PFS-193	Hydrofluorocarbon (HFC)
PFS-195	Hydrofluorocarbon (HFC)
PFS-230	Hydrofluoroether (HFE)
PFS-264	Perfluoro ketone (PFK)
PFS-231	Hydrofluoroether (HFE)
PFS-267	Perfluoro ketone (PFK)
PFS-232	Hydrofluoroether (HFE)
PFS-233	Hydrofluoroether (HFE)
PFS-235	Hydrofluoroether (HFE)
PFS-237	Hydrofluoroether (HFE)

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	Remarks
FLE-50	Perfluorocarbon (PFC)
FLE-56	Perfluorocarbon (PFC)
FLE-95	Perfluorocarbon (PFC)
FLE-128	Perfluorocarbon (PFC)
FLE-165	Perfluorocarbon (PFC)
FLE-175	Perfluorocarbon (PFC)
FLE-215	Perfluorocarbon (PFC)
FL-52	Perfluorocarbon (PFC)
FL-56	Perfluorocarbon (PFC)
FL-58	Perfluorocarbon (PFC)
FL-60	Perfluorocarbon (PFC)
FL-69	Perfluorocarbon (PFC)
FL-76	Perfluorocarbon (PFC)

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	Remarks
PBS-701	PFPE
PBS-702	PFPE
PBS-703	PFPE

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	Remarks
HB-096	PFPE
HB-095	PFPE
HB-094	PFPE
HB-093	PFPE
LB-092	PFPE
LB-091	PFPE
LB-090	PFPE
LB-089	PFPE
LB-088	PFPE

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	Remarks
TH-41	PFPE
TH-43	PFPE
TH-45	PFPE
TH-47	PFPE
TH-49	PFPE

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	Remarks
NB-088	PFPE
NB-089	PFPE
NB-090	PFPE
NB-091	PFPE
NB-092	PFPE

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	Remarks
OB-71	PFPE
OB-73	PFPE
OB-75	PFPE
OB-77	PFPE
OB-79	PFPE

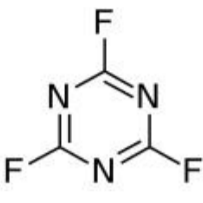

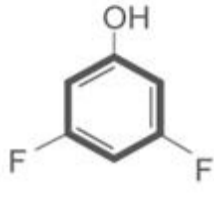

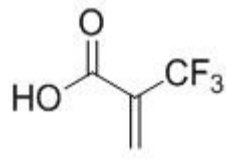
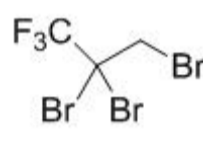
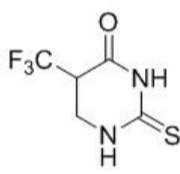
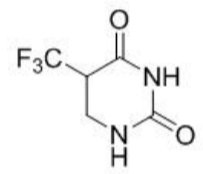
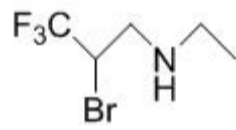
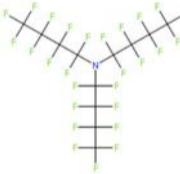
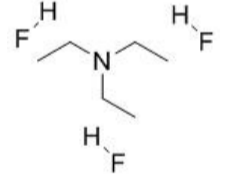
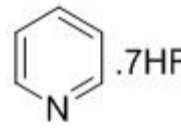
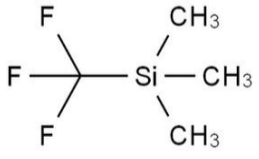
Superhydrophobic / Superoleophobic / Superhydrophilic

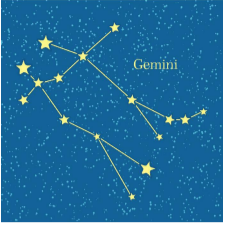
We have a series of surface modification treatment agents applicable for various substrates on the market. The treated substrates indicate surface properties such as superhydrophobic, superoleophobic and superhydrophilic. These properties enable a wide range of applications, such as anti-fouling and easy to clean, anti-fog, anti icing and snow adhesion/ accumulation, reduce signal wave rain fade, waterproof, anti-corrosion etc. The modified substrates may sustain in various extreme harsh environments. The applied products exhibit excellent qualities, and their physical and chemical performances can reach to the extreme challenges.

Product Series	Our Type	Metal	Paint	Textile	FRP	Rubber	Gel coat	Plastic	Foam	Ceramic	Glass	Cement	Stone	Wood	PCB	Film	Mesh	Membrane
Superhydrophilic	AnS-110										●					●		
	AnS-111		●					●		●	●	●	●					
	AnO-165	●								●								
Superhydrophilic Anti fog	AnF-113										●							
	AnF-115										●							
	AnF-117							●										
Water Barrier	AnB-133											●	●	●				
Anti Adhesion	AnO-160	●	●			●	●	●		●	●	●	●	●				
Hydrophobic	AnB-135									●		●	●	●				
Hydrophobic Oleophobic	AnO-161			●								●	●			●	●	●
	AnO-164	●	●					●		●		●	●	●				
	AnO-166							●										
	AnO-167	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	AnO-168	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	AnO-169										●	●						
Superhydrophobic	AnT-180			●														
	FluoroThane TS	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Superhydrophobic Superoleophobic	AnG-151	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	AnG-153			●												●	●	●
	AnG-157	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	AnT-183			●														
Product Series	Our Type	Metal	Paint	Textile	FRP	Rubber	Gel coat	Plastic	Foam	Ceramic	Glass	Cement	Stone	Wood	PCB	Film	Mesh	Membrane

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	Hydouracil,5-(trifluoromethyl)-(7CI,8CI);5-(Trifluoromethyl)-5,6-dihydouracil	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		



www.weissbonya.com

Hunan Weiss Bonya Co., Ltd

Email: Weissbonya@gmail.com