

Fuzhou Topda New Material Co., Ltd



PFPE Vacuum Pump Oils

PFPE Oil For Vapor Phase Soldering

PFPE Base Oil For Grease

PFPE Polymer Additive PFPE High Temp Lubricating Oil

PFPE Oil For Cosmetics

PFPE Intermediates

### PFPE VACUUM PUMP OILS

### PFPE Vacuum Pump Oils TOPDA K-L Grades

PFPE Vacuum Pump Oils TOPDA K-L Grades are perfluorinated polyether inert fluids with only carbon (C), fluorine(F), and oxygen(O) atoms on the molecular chain. They are ideal for use in vacuum pumps as sealing & lubricating fluid and working fluids especially in the systems which are exposed to strongly oxidative substances like oxygen, ozone or nitric oxides as well as highly reactive substances like halogens and hydrogen halides. Because of their high stability and safety, especially the high reliability of working under particularly harsh conditions, no working medium can be comparable to perfluoropolyether oil in such harsh environment.



<b>Product Code</b>	Average	Viscosity at	Viscosity	Vapor	Vapor	Pour	Ultimate total	Surface
	Molecular Weight,	20°C, cSt	Index	Pressure	Pressure	Point, ℃	pressure, torr	Tension at
	a.m.u.			at 25°C, , torr	at 100°C, , torr			20°C, dyne/cm
K-L 606	1,800	64	71	8×10 <sup>-7</sup>	3×10 <sup>-3</sup>	-50	1.7×10 <sup>-3</sup>	19
K-L 1406	2,500	148	97	1×10 <sup>-7</sup>	2×10 <sup>-4</sup>	-45	1.4×10 <sup>-3</sup>	19
K-L 1606	2,700	168	110	2×10 <sup>-6</sup>	2×10 <sup>-4</sup>	-45	1.3×10 <sup>-3</sup>	19
K-L 2506	3,300	276	113	6×10 <sup>-8</sup>	6×10 <sup>-5</sup>	-35	1.1×10 <sup>-3</sup>	19

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### PFPE Vacuum Pump Oils TOPDA K-H Grades

PFPE Vacuum Pump Oil TOPDA K-H Grades are suggested for applications requiring the highest quality vacuum such as in scanning electron and transmission microscopes, mass spectrometers, particle accelerators, ion implantation, plasma and vapor deposition processes. In addition, it is suggested for pumps handling reactive gases such as UF6, F2, oxygen, ozone and tritium, as the fluid can be used in direct contact with these gases without reaction and fluid degradation.



<b>Product Code</b>	Average	Viscosity at	Viscosity	Vapor	Pour	Refractive	Specific	Working
	Molecular Weight,	20°C, cSt	Index	Pressure	Point,℃	Index, (nD <sup>20</sup> )	Heat at 20°C	Temperature, °C
	a.m.u.			at 25°C, , torr				
K-H 1808	2,800	185	120	8×10 <sup>-7</sup>	-45	1.300	0.24	-45~190
K-H 2509	3,400	285	126	1×10 <sup>-7</sup>	-41	1.301	0.24	-40~195
K-H 4009	4,400	474	129	2×10 <sup>-6</sup>	-38	1.304	0.24	-38~200
KH-14013	7,600	1400	140	6×10 <sup>-8</sup>	-30	1.304	0.24	-30~280

## PFPE BASE OIL FOR GREASE

PFPE Base Oil For Grease B Grades not only maintain the excellent properties of perfluoropolyether fluids, but also has many unique properties, such as excellent high temperature stability, good low temperature properties, low evaporative loss and high viscosity index. They are widely used as base oil to formulate PFPE greases for specific appliations to meet the most challenging demands.



Product Code	Viscosity at 20°C, cSt	Viscosity at 40°C, cSt	Viscosity at 100°C, cSt	Viscosity Index	Pour Point,℃	Surface tension, 20°C dyne/cm	Evaporation weight loss at 120 °C, 22 hr, %	Evaporation weight loss at 204 °C, 22 hr, %
B-40	38	15	3	29	-63	20	35	-
B-150	142	48	7	100	-60	21	10	-
B-260	260	83	11	116	-42	22	3	-
B-520	522	160	18	124	-36	22	1	7
B-800	822	243	25	134	-36	23	1	3
B-1200	1,200	345	33	136	-33	24	-	1
B-1500	1,535	450	42	145	-30	24	-	1
B-1800	1,820	510	46	148	-20	24	-	0.8
B-2600	2,600	750	65	157	-15	24	-	0.6
B-3500	3,500	1,000	88	171	-5	24	-	0.5

## PFPE HIGH TEMP & HIGH VACUUM LUBRICATING OILS

PFPE High Temperature & Ultra-high Vacuum Lubricating Oils S Grades are perfluorinated polyether inert fluids. They are especially developed for use in high temperature and ultra-high vacuum environments as lubricating Oils.

- Excellent resistance to high temperature and ultra-high vacuum
- High viscosity index
- Extreamly low evaporative loss
- Excellent chemical & solvent resistance
- Good lubricity
- Excellent compatibility with metals, plastics, elastomers



Product Code	Viscosity at 20°C, cSt	Viscosity at 40°C, cSt	Viscosity at 100°C, cSt	Viscosity Index	Evaporation weight loss at 204 °C, 22 hr, %		Working Temperature, °C
S-2500	2,500	740	64	158	< 0.75	-24	-24~305
S-3000	3,000	860	70	161	<0.10	-21	-21~315
S-3500	3,500	995	84	166	<0.10	-18	-18~325

## PFPE POLYMER ADDITIVE

Topda P Grades are fully fluorinated oils especially developed for use as polymer additives and can be compounded with thermoplastic and elastomeric materials to enhance the final properties of the host materials without changing their mechanical properties, color, etc.

- Excellent thermal stability and chemical resistance
- Non-flammable in any circumstances
- Outstanding radiation resistance and weather resistance
- Good Water/oil and stain repellency
- Good compatibility with plastics and rubbers
- Reduce the coefficient of friction
- Improve wear and abrasion resistance
- Improve the surface smoothness and gloss
- Extend the working life of the polymers



Product Code	Viscosity at 48℃, cSt	Volatility at 121 °C, 22 hr, %	Refractive Index, (nD <sup>25</sup> )	Pour Point, ℃	Surface tension, 20°C dyne/cm
P-10	8	-	1.300	<-70	18
P-100	106	-	1.300	<-36	18
P-110	112	<1	1.300	<-36	18

### PFPE OIL FOR VAPOR PHASE SOLDERING

PFPE Oil For Vapor Phase Soldering V Grades are perfluoropolyether Oils which are especially developed to be used as vapor phase soldering fluids, mainly used duiring the process of VPS, they can use latent heat of codensation of PFPE Vapor to melt solder.

- Low viscosity
- Excellent thermal stability
- Unmatched chemical and solvent resistance
- Non-flammable
- Good viscosity index
- Low pour point
- Wide working temperature
- Non-toxic, zero ozone depletion
- Non-corrosive to metal materials, soldering with no residue



Product Code	Average molecular weight, a.m.u	Viscosity at 20°C, cSt	Density at 25°C, g/cm <sup>3</sup>	Surface tension, at 20°C, dyne/cm	Boiling Point, °C
V-01	800-1000	1-5	1.78-1.82	19.0-20.5	195-235
V-02	1000-1300	5-10	1.82-1.84	19.5-20.5	235-265

## PFPE OIL FOR COSMETICS

CAS No: 69991-67-9

INCI Name: Polyperfluoromethylisopropyl Ether

PFPE Oil TOPDA C Grades are fluorinated fluids which are especially developed to be used as additives in high-end cosmetics and skin care products, it has features of good waterproof performance, no damage to the skin and no pores clog.

- Good Waterproof performance
- Low surface tension
- Good lubricity
- No damage to the skin
- Not clog pores
- Non-toxic
- **Environmental friendly**



Product Code	Average Molecular Weight,	Viscosity at 20°C,	Refractive	Surface tension, at	Interfacial tension at 20°C,
	a.m.u.	cSt	Index, (nD <sup>25</sup> )	20°C, dyne/cm	dyne/cm
C-40	1,800	40	1.293	22	55
C-250	2,500	250	1.299	22	55
C-1250	6,500	1250	1.302	22	55

### PFPE Intermediates

Perfluoropolyether acyl fluoride (PFPE-COF) prepared by the polymerization of hexafluoropropylene oxide (HFPO) can be converted into different types of derivatives, such as alcohols, acids, esters and amides, which can be used in the synthesis of polymers, surfactants and a variety of special fluorine-containing products.

TOPDA perfluoropolyether(PFPE) intermediates include perfluoropolyether (methyl) acrylate, perfluoropolyether alcohol, perfluoropolyether carboxylic acid, perfluoropolyether methyl ester, etc. The products can be used in the synthesis of fingerprint-resistant coatings, paper oil-proof agents, fabric finishing agents, coatings, polyurethane, etc.

At the same time, we also provide customized synthesis services for perfluoropolyether intermediates for customers with different needs.

Product	CAS No	Chemical Structure	Purity	Features
Perfluoropolyether Acyl Fluoride	65208-35-7	$F_{3}C - C - C - C - C - C - C - C - C - C -$	≥98%	Can be converted into alcohol, acid, ester, amide and other derivatives
Perfluoropolyether Acrylate		$ \begin{array}{c} O \\   \\   \\ F \leftarrow C_3F_6O \xrightarrow{n} RCH_2OCCH = CH_2 \end{array} $	≥98%	Contains arylic terminal groups which can provide polymerization reactivity
Perfluoropolyether Alcohol	90317-77-4	$F_{3}C - \begin{matrix} F & F & F \\ C - C - C & C - C \\ F & F & CF_{3} & F \end{matrix} \xrightarrow{F} \begin{matrix} F & F & F \\ C - C - C \\ C - C - C - C \\ CF_{3} & F \end{matrix} \xrightarrow{F} \begin{matrix} F & F \\ C - C - C \\ C - C - C \\ C - C - C - C$	≥98%	Contains active hydroxyl groups that can react with groups such as epoxy, isocyanate or anhydride

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Perfluoropolyether Carboxylic Acid	51798-33-5	$F_{3}C - \begin{matrix} F & F & F & F & O \\ I & I & I & I \\ I & I & I & I \\ I & I &$	≥98%	Contains active carboxyl group that can react with hydroxyl, amino and other groups
Perfluoropolyether Methyl Ester		$F_{3}C - \begin{matrix} F & F & F & F & O \\ I & I & I & I \\ I & I & I & I \\ I & I &$	≥98%	Contains active ester group that can react with hydroxyl, amino and other groups