Weiss Bonya

Gemini ® PFPE Vacuum Pump Oils VPO-12X

Introduction：

VPO-12X are K type PFPE fluids based on HFPO, 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 Lewis acids. VPO-12X chemically inert properties are the best in all types of PFPE like K、Y、Z.

Typical Properties：

	Method	Conditions	Units	VPO-1201	VPO-1202	VPO-1203	VPO-1204	VPO-1205
Average Molecular Weight	NMR			2400	3500	4600	4900	4300
Vapor Pressure	Knudsen	20℃	torr	4×10^{-7}	2×10^{-7}	1×10^{-7}	1×10^{-7}	5×10^{-9}
		50℃		1×10^{-5}	3×10^{-6}	1×10^{-6}	1×10^{-6}	2×10^{-7}
		100℃		1×10^{-3}	1×10^{-4}	3×10^{-5}	3×10^{-5}	2×10^{-5}
		200℃		5×10^{-1}	1×10^{-2}	2×10^{-3}	2×10^{-3}	1×10^{-2}
Kinematic Viscosity	ASTM D445	20℃	mm^2/s (cSt)	62	142	261	310	175
		50℃		16	32	53	63	37
		100℃		4.4	7.2	11	12.5	8
		200℃		1.2	1.7	2.2	2.5	1.8
Pour Point	ASTM D97		℃	-60	-54	-48	-41	-40
Heat of Vaporization	Knudsen	150-250℃	cal/g	9	7	6	6	7
Volatility at 22 hr	ASTM D2595	149℃	%	6	1	0.5	0.5	0.1
		204℃		35	3	Nil	Nil	8.9
Distillation range at 0.4 torr	ASTM D1160	10%	℃	160	200	200	200	210
		90%		220	280	300	300	280
Surface Tension		25℃	dyne/cm	17	18	19	19	18
Density		20℃	g/ml	1.88	1.89	1.9	1.9	1.89
		50℃		1.82	1.83	1.84	1.84	1.83
		100℃		1.73	1.74	1.75	1.75	1.74
		200℃		1.54	1.55	1.55	1.56	1.55

K-Y Structure and Features Comparison：

K type PFPE is fully shielding structured that has no -O-CF2-O- links, this enables superior chemical inertness. K type PFPE vacuum pump oils deliver outstanding performance in the presence of Lewis Acids and outperform Y type PFPE that has -O-CF2-O- links in extreme environments. So, in semiconductor manufacturing Lewis Acids infliction, and in all sorts of chemical gases and liquids environments, K type PFPE vacuum pump oils are the perfect choice.

The table on the left below indicates K type fully shielding structure with no -O-CF2-O- links and Y type no shielding structure that has -O-CF2-O- links. Without shielding protection, PFPE structure will be easily attacked by chemicals and depolymerize.

The Table on the right below indicates Relative Weight Loss of K type and Y type PFPE Fluids in presence of Lewis Acids.（15% wt AlCl3, 120℃）

PFPE-K

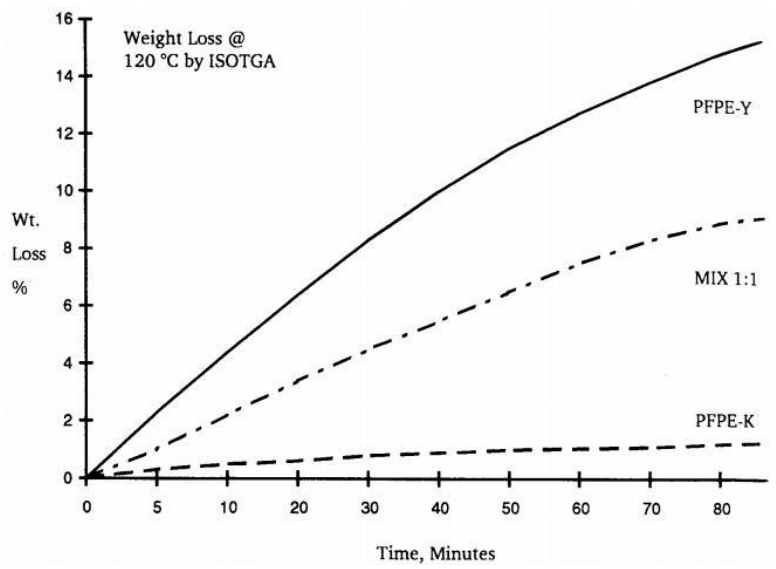
$$F(CFCF_2O)_nCF_2CF_3$$
$$|$$
$$CF_3$$

CF3 Group acts like a fully shield

PFPE-Y

$$F_3CO(CFCF_2O)_m(CF_2O)_nCF_3$$
$$|$$
$$CF_3$$

No CF3 Group shield



VPO-12X Applications：

VPO-12X vacuum pump oils serve in many industries applications

Chemical industry、electrical industry、scientific instruments、precision mechanics、utility goods and commodities

Incandescent lamp and electron tube production、refrigeration industry、plastic industry

Medical research、metallurgical industry、food processing、optical industry、pharmaceutical industry

Toy and jewelry industry、textile industry、nuclear engineering、automobile industry、research and development

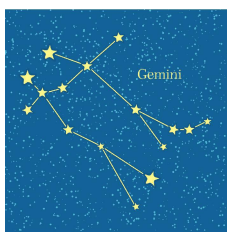
Attentions：

. Do not mix oils of different types. Thoroughly remove old oils before applying. We suggest use our PFS-190 as PFPE oils cleaning agent.

. During processing, wear protection clothes, be careful of eye、skin contact.

. Keep the container sealed and store in cool、well ventilated locations.

Packaging/Transport： 5Kg,20Kg,50Kg plastic container. Not classified as dangerous in the meaning of transport regulations.



www.weissbonya.com

Hunan Weiss Bonya Co., Ltd

Email：Weissbonya@gmail.com