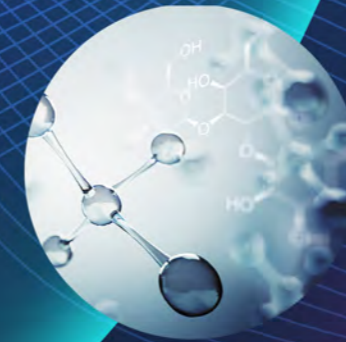




福保化學股份有限公司  
FU PAO CHEMICAL CO., LTD.



福保化學股份有限公司  
FU PAO CHEMICAL CO., LTD.

台灣桃園市觀音區新富路99號  
TEL: 886-3-4905625#9 FAX: 886-3-4904893



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## 專業漆包線絕緣塗料 製造與服務

Professional Magnet Wire Enamel  
Manufacture and Services

[www.fupao.com](http://www.fupao.com)

# 專業漆包線絕緣塗料製造與服務

## Your Solution Partner For Wire Enamel

福保化學多年來持續投入研發，提供先進製程和齊全的產品線，在各絕緣塗料產品系列中不斷進取向前，並協助客戶持續改善品質，成為漆包線廠商長期的解決方案夥伴。

For many years, Fu Pao Chemical Co., LTD. has been investing in R&D, providing advanced processes and complete product lines. We continue to improve our quality in various insulating coating products and assists our customers to continuously improve their qualities also. We have become a long-term solution partner for enameled wire manufacturers.

### 應用範圍



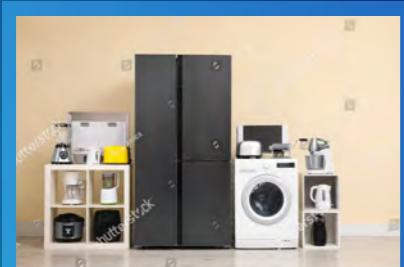
電機產品  
Electric products



電動車馬達  
Motors for Electric Automobile



變壓器換位導體  
Transposed Conductor for Transformer



家用電器  
Home appliance



一般電子元件  
Normal Electric Parts



車用電子元件  
Electric Parts for Automobile

### UL Certification

File no. (OBNT2).E173840  
PU Series : B, F, H Class  
PE Series : F Class  
AI Series : C Class  
EI Series : H Class

PE/AI Series  
EI/AI Series  
PU/Nylon Series

### Packing

55 Gallon UL Certified Drum  
IBC TANK  
ISO TANK

苏州东特绝缘科技有限公司  
**SUZHOU TOTOKU INSULATION TECHNOLOGY CO., LTD.**  
設立日：2001年8月

福保印度有限公司  
**FU PAO INDIA PRIVATE LIMITED**  
設立日：2019年3月

特保貿易（廣州）有限公司  
**TOKUFAO (GUANGZHOU) CO., LTD.**  
設立日：2021年

苏州东特绝缘科技有限公司东莞分公司  
**SUZHOU TOTOKU INSULATION TECHNOLOGY CO., LTD. DONGGUAN BRANCH**  
設立日：2008年  
东莞特保貿易有限公司  
**DONGGUAN TOKUPAO CO., LTD.**  
設立日：2015年

東特塗料（印尼）  
**PT.TOTOKU TORYO INDONESIA**  
設立日：2001年6月

東特塗料株式會社  
**TOTOKU TORYO CO., LTD.**  
設立日：1950年3月

福保化學股份有限公司  
**FU PAO CHEMICAL CO., LTD.**  
設立日：1976年1月



TOTOKU TORYO GROUP



營業據點

製造工廠

研發部門

合作夥伴

# Polyurethane Wire Enamel (PU)

## 聚氨酯漆包線漆

Product	Viscosity		Solid Content		Characteristics And Applications	Conductor Diameter	Film Thickness	Heat Shock		Cut Through	Breakdown Voltage	Flexibility		Solderability Temperature	Solderability Time	Tanδ	Thermal Index	UL File No. E173840
產品名稱	粘度		固體含量 (%)		特性及應用	裸線直徑	漆膜厚度	耐熱衝擊		軟化擊穿	擊穿電壓	柔韌性		焊錫溫度	焊錫時間	介質損耗	耐熱指數	UL 認證號碼 E173840
	Ford cup (#4)	Brookfield type	120°C ×3hr×1.2g	180°C ×1hr×1.0g		mm	μm	x d	°C	°C	kV	%	x d	°C	sec	°C	°C	
	sec 25°C	mPa·s 30°C				mm	μm	x d	°C	°C	kV	%	x d	°C	sec	°C	°C	
TPU F2 30NC	20±5	36±10	30.0±1.0	25.0±1.5	作業性、經時針孔、直焊性佳 Excellent workability and solderability, pinhole free.	0.30	35	6	175	245	9.2	20	1	360	2	150	130	v
TPU F2 35NC	28±5	60±10	35.0±1.0	29.0±1.5		0.50	43	6	175	245	10.0	20	1	360	2	150	130	
TPU F2 40NC	55±10	120±30	40.0±1.0	33.0±1.5	細線或絞線使用，作業性、直焊性佳、低焊渣 For fine wire or litz wire, excellent workability and solderability with less solder slag.	0.15	34	3	175	237	8.7	20	1	360	1	150	155	v
FPU 28L	17±5	25±5	28.0±1.0	24.0±1.5		細線或絞線使用，作業性、直焊性佳、低焊渣；可高速化作業 For fine wire or litz wire, excellent workability and solderability with less solder slag. Also use for high speed machine.	0.15	33	3	175	229	8.1	20	1	360	1	150	155
FPU 30L	19±5	30±10	30.0±1.0	26.0±1.5	細線或絞線使用，作業性、直焊性佳、低焊渣、水中針孔佳 For fine wire or litz wire, excellent workability and solderability with less solder slag. pinhole in water has fine performance.		0.15	32	3	175	235	8.3	20	1	360	1	160	155
FPU 35L	28±5	60±10	35.0±1.0	30.0±1.5		綠色產品 (低臭味)、作業性、直焊性 Environmental friendly product (low odor), excellent workability and solderability.	0.30	38	6	175	243	7.6	20	1	360	1	150	130
FPU 30LV	19±5	28±7	30.0±1.0	26.0±1.5	大線使用，密著性、耐熱佳；環型線圈應用 Use for medium to large wire, excellent adherence and thermal resistance. Can be applied to toroidal coil.		1.20	62	3	175	275	10.4	20	1	400	1	170	155
FPU 35LV	28±5	50±10	35.0±1.0	30.0±1.5		極細線專用、低溫直焊性佳 For super fine wire application, excellent low soldering temperature.	0.15	28	3	175	220	9.0	20	1	300	1.5	170	155
FPU 30EN	20±5	36±10	30.0±1.0	25.0±1.5	細線專用、低溫直焊性佳 For fine wire, excellent low soldering temperature.		0.15	21	2	175	227	6.7	20	1	320	1.5	170	155
FPU 40EN	55±10	120±30	40.0±1.0	33.0±1.5		耐熱衝擊、密著性、直焊性佳；耗漆量少、低臭味環保品 Excellent heat shock, excellent workability and solderability. Less consumption of coating, low odor, environmentally friendly.	0.30	28	3	175	248	7.4	20	1	360	1.2	170	155
FPU 38V	30±5	70±15	38.0±1.0	33.0±1.5	高濃度低黏度，密著性、耐熱佳；環型線圈應用 High solid content with low viscosity, excellent adherence and thermal resistance. Can be applied to toroidal coil.		0.50	42	3	175	255	10.8	20	1	380	1	170	155
FPU 55V	N/A	2000±400	55.0±1.0	47.0±1.5		絞線用、水中針孔、水中耐電壓、直焊性佳 For litz wire, excellent solderability, pinhole and BDV test in water has fine performance.	0.15	25	3	175	253	8.9	20	1	340	2	170	155
FPU AK 28S	19±5	30±10	28.0±1.0	23.0±1.5	耐熱性、作業性、針孔性、直焊性佳 Excellent thermal resistance, workability, solderability and pinhole free.		0.15	25	3	175	255	9.2	20	1	360	2	170	155
FPU AK 32	19±5	40±10	32.0±1.0	26.0±1.5		耐熱衝擊、耐軟化、直焊性佳 Excellent heat shock, solderability and high cut-through temperature.	0.30	35	3	175	260	8.7	20	1	360	2	170	155
FPU 35VN	24±5	50±10	35.0±1.0	30.0±1.5	無酚系環保 PU、低煙道損失、多股絞線應用、低溫焊錫 E nvironmental Phenol-Free Enamel, less cleaning frequency on machine, Stranded wire application, low solderble temperture.		0.15	35	3	175	235	8.8	20	1	360	1	150	155
FPU 38VN	31±5	75±15	38.0±1.0	32.0±1.5		高耐軟化溫度、高介質損耗、耐熱壽命佳，回流焊應用 High cut-through temperature, Tanδ, and excellent thermal endurance. Can be applied to reflow soldering process.	0.30	30	2	200	285	8.2	15	1	390	2	224	180
FPU 40VN	38±6	100±20	40.0±1.0	34.0±1.5	高耐軟化溫度、耐熱衝擊佳 High cut-through temperature, and excellent heat shock.		0.30	30	2	200	270	7.9	15	1	390	1	195	180
FPU 50VK	150±20	400±100	50.0±1.0	43.0±1.5		作業性、耐熱性、可撓性、耐熱衝擊性 Excellent workability, thermal resistance, flexibility, and heat shock.	0.30	32	2	200	260	7.5	20	1	390	1	194	180
FPU A1 30E	19±5	30±10	30.0±1.0	25.0±1.5	扁平線專用、作業性佳 For rectangular wire, excellent workability.		0.30	32	2	200	270	7.7	15	1	390	1	196	180
FPU A1 35E	28±5	60±10	35.0±1.0	29.0±1.5		高耐軟化溫度、高介質損耗、直焊性佳 High cut-through temperature, Tanδ, and excellent solderability.	0.30	30	3	200	275	8.0	20	3	370	1	227	180
FPU A1 30	19±5	30±10	30.0±1.0	26.0±1.5	低焊渣、直焊性佳 Less solder slag, and excellent solderability.		0.15	30	3	200	260	7.2	20	3	370	1	185	180
FPU A1 35	28±5	60±10	35.0±1.0	30.0±1.5		FIW 應用、高耐軟化溫度、高介質損耗、直焊性佳 FIW Application, High cut-through temperaturer and TanD, excellent solderability.	0.30	30	3	200	280	8.0	20	3	380	2	220	180
FPU A1 40	55±10	120±20	40.0±1.0	34.0±1.5	高耐軟化溫度、高 TAN D High cut-through temperaturer and high TanD,		0.30	45	3	200	295	7.5	20	3	420	1	210	180
FPU A1 45	105±15	300±50	45.0±1.0	39.0±1.5		高耐軟化溫度、高介質損耗，電感應用 High cut-through temperature, high Tanδ. Can be applied to inductor.	0.10	20	3	220	285	8.9	20	3	420	2	255	200
FPU A5 30	20±5	36±10	30.0±1.0	26.0±1.5	低焊渣、高耐軟化溫度、耐熱衝擊佳 Less solder slag, High cut-through temperature, and great heat shock.		0.30	30	2	200	255	7.9	15	1	370	1	185	180
FPU A5 35	28±5	60±10	35.0±1.0	30.0±1.5		耐熱性、耐濕熱性、高 TAN D、FIW 應用 Excellent thermal resistance, Humidity and heat resistance, high TadD. For FIW Application.	0.50	45	3	200	263	9.4	15	1	380	1.5	213	180
FPU A5 50	200±20	800±150	50.0±1.0	43.0±1.5														

※ 聚氨酯系列可製成自潤滑產品  
※ The PU series can be produced to self-lubricating products

※ 耐熱衝擊符合 NEMA 標準  
※ The heat shock test conform to the standard of NEMA

## Polyester Wire Enamel (PE)

### 聚酯漆包線漆

Product 產品名稱	Viscosity 粘度		Solid Content 固體含量 (%)		Characteristics And Applications 特性及應用	Conductor Diameter 裸線直徑	Film Thickness 漆膜厚度	Heat Shock 耐熱衝擊		Cut Through 軟化擊穿	Breakdown Voltage 擊穿電壓	Flexibility 柔韌性		Tanδ 介質損耗	Thermal Index 耐熱指數	UL File No. E173840 UL 認證號碼 E173840
	Ford cup (#4) sec 25°C	Brookfield type mPa·s 30°C	200°C ×2hr×1.5g	180°C ×1hr×1.0g				x d	°C			%	x d			
TPE 3000-30	30±5	70±20	30.0±1.0	31.0±1.0	作業性、可撓性、針孔性佳 Excellent workability, flexibility and pinhole free.	0.30	39	5	175	310	8.6	20	1	135	155	V
TPE 3000-35	75±10	170±40	35.0±1.0	36.0±1.0												
TPE 3000-35L	70±10	150±40	35.0±1.0	36.0±1.0	作業性、可撓性佳、可高速化作業 Excellent workability, flexibility. Also use for high speed machine.	0.30	33	5	175	311	8.7	20	1	136	155	V
TPE 3000-35LGD	70±10	150±40	35.0±1.0	36.0±1.0	作業性、特殊色相需求 Excellent workability and special color requirement.	0.50	42	3	175	292	9.5	20	1	127	155	V
LITON 3330J	45±10	100±20	30.0±1.0	31.0±1.0	毛氈作業範圍廣、針孔性佳；剝漆性佳 Excellent workability for felt application, pinhole free. Coating stripped by agent easily.	0.30	40	3	175	311	10.6	20	1	141	155	V
LITON 3335SQ	185±30	550±140	35.0±1.0	36.0±1.0	可撓性、作業範圍廣、針孔性與耐熱衝擊佳；剝漆性佳 Excellent flexibility, pinhole and heat shock, wide range of workability. Coating stripped by agent easily.	0.30	40	2	175	325	10.5	20	1	145	155	V
LITON 3337SQ	200±20	700±150	37.0±1.0	38.0±1.0												
LITON 3340SQ	N/A	1500±200	40.0±1.0	41.0±1.0												
LITON 3342S	N/A	2500±300	42.0±1.0	43.0±1.0	橫爐、立爐作業性佳、高濃度化；剝漆性佳 High solid content with excellent workability on both horizontal as well as vertical machines. Coating stripped by agent easily.	0.30	45	3	175	319	11.9	20	1	145	155	V
FPE 9040H	375±35	1000±250	40.0±1.0	41.0±1.5	THEIC PE, 高耐軟化溫度、作業性佳 THEIC PE, high cut-through temperature, excellent workability.	0.80	35	3	200	383	13.1	20	1	170	180	V
FPE 9045H	N/A	2000±500	45.0±1.0	46.0±1.5		1.20	40	3	200	380	14.4	20	1	175	180	V
PAO PEF 35J	NA	300±50	35.0±1.0	36.0±1.0	扁平線毛氈作業應用、作業性、高濃度低黏度可降低生產成本 For rectangular wire use, felt application, excellent workability, high solid content with low viscosity, can reduce production cost.	0.30	45	3	175	318	9.6	15	1	138	155	V

※耐熱衝擊符合 NEMA 標準  
※ The heat shock test conform to the standard of NEMA

## PRIMER

### 打底用漆包線漆

Product 產品名稱	Viscosity 粘度		Solid Content 固體含量 (%)			Characteristics And Applications 特性及應用	Conductor Diameter 裸線直徑	Film Thickness 漆膜厚度	Flexibility 拉斷露銅		Flexibility 柔韌性		
	Ford cup (#4) sec 25°C	Brookfield type mPa·s 30°C	120°C ×3hr×1.2g	200°C ×2hr×1.5g	180°C ×1hr×1.0g				mm	µm	mm	%	x d
FPM A 30	N/A	1200±300	30.0±1.0	-----	26.0±1.0	密著性佳，鋁線或銅線打底用，芳香族尼龍（NMP 系），適用耐熱等級 220°C 級以下底漆。 Excellent adherence as primer for aluminum or copper (thermal index less than 220°C), aromatic Nylon (NMP type).	1.20 (Over coat : FEI 9838HMA)	60	< 1	15	1		
FPM A 30B	N/A	1200±300	30.0±1.0	-----	26.0±1.0	剝離扭絞與密著性更佳，鋁線或銅線打底用，芳香族尼龍（NMP 系），適用耐熱等級 220 °C 級以下底漆。 Greater peel test and adhesion, primer for aluminum or copper thermal index lower than 220 °C), aromatic Nylon (NMP type).	1.20 (Over coat : NH 8642B)	60	< 1	15	1		
FPM B 27	N/A	1500±400	-----	27.0±1.0	28.0±1.5	密著性佳，鋁線或銅線打底用，聚醯胺醯亞胺（NMP 系），適用耐熱等級 200°C 級以上底漆。 Excellent adherence as primer for aluminum or copper (thermal index higher than 200°C), polyamide-imide (NMP type).	1.20 (Over coat : FEI 9838HMA)	60	< 2	15	1		
FPM B 30WZ	N/A	1600±400	-----	30.0±1.0	31.0±1.5	密著柔韌性佳，鋁線或銅線打底用，聚醯胺醯亞胺（NMP 系），適用耐熱等級 200 °C 級以上底漆。 Excellent adherence (Flexibility) as primer for aluminum or copper(thermal index higher than 200 °C), polyamide-imide (NMP type).	1.20 (Over coat : NH AI 32P)	55	< 2	25	1		

## Polyesterimide Wire Enamel (PEI)

聚酯亞胺漆包線漆

Product	Viscosity		Solid Content		Characteristics And Applications	Conductor Diameter	Film Thickness	Heat Shock		Cut Through	Breakdown Voltage	Flexibility		Solderability Temperature	Solderability Time	Peel Test	Tanδ	Thermal Index	UL File No. E173840	
產品名稱	粘度		固體含量 (%)			特性及應用	裸線直徑	漆膜厚度	耐熱衝擊		軟化擊穿	擊穿電壓	柔韌性		焊錫溫度	焊錫時間	剝離測試	介質損耗	耐熱指數	UL 認證號碼 E173840
	Ford cup (#4)	Brookfield type	200°C × 2hr × 1.5g	180°C × 1hr × 1.0g			mm	μm	x d	°C	°C	kV	%	x d	°C	sec	turn	°C	°C	
FEI 0530	28±5	60±20	30.0±1.0	31.0±1.5	作業性佳，高速爐使用、高介質損耗 Excellent workability for high speed machine, high Tanδ.	0.30	40	3	200	395	10.9	20	1	-----	-----	85	191	200	V	
FEI 0535	55±10	120±30	35.0±1.0	36.0±1.5		0.30	40	3	200	399	10.7	20	1	-----	-----	87	201	200	V	
FEI 0538	100±15	250±50	38.0±1.0	39.0±1.5		0.30	40	3	200	398	11.0	20	1	-----	-----	91	196	200	V	
FEI 0540	170±30	400±50	40.0±1.0	41.0±1.5		0.50	40	3	200	401	12.1	20	1	-----	-----	90	198	200	V	
FEI 0540HX	170±30	400±100	40.0±1.5	41.0±1.5	作業性、密著性、耐熱衝擊、耐冷媒性 Excellent workability, adhesion, heat shock and freon resistance.	0.80 (OVER COAT: NH AI 32P)	76	1	240	403	11.2	25	1	-----	-----	99	199	180 (EI)	V	
FEI 0545HX	NA	2000±400	45.0±1.5	46.0±1.5																
FSEI 126	25 ± 5	55±10	26.0±1.0	27.0±1.5	耐熱衝擊、焊錫性佳、高耐熱可直焊 EI Good performance on heat shock, excellent solderability.	0.30	45	3	220	320	9.2	20	1	450	1.5	-----	195	180	V	
FSEI 135	115 ± 15	300±100	35.0±1.0	36.0±1.5										450	1.7					
FEI 9838HMA	170±30	450±100	38.0±1.0	39.0±1.5	耐熱衝擊、捲繞性佳，傳統爐及高速爐使用 Good heat shock, excellent flexibility, can be used for both traditional and high speed machine.	0.80	70	3	220	385	13.0	20	1	-----	-----	130	203	200	V	
FEI 9845HMT-2	N/A	2500±500	45.0±1.0	46.0±1.5	可撓性、拉斷露銅佳，色相深，適合立爐 Excellent adherence and flexibility. Dark color. Use for vertical machine.	1.60	90	3	220	410	17.5	20	1	-----	-----	130	206	200	V	
NH 8635A	180±30	500±150	35.0±1.0	36.0±1.5	作業性、耐冷媒性佳，高耐軟化 Excellent workability and freon resistance. High cut through.	0.50	40	3	200	410	13.2	20	1	-----	-----	-----	205	200	V	
NH 8642B	N/A	2000±500	42.0±1.0	43.0±1.5	作業性、耐冷媒性佳 Excellent workability and freon resistance.	1.20	70	3	200	400	11.4	20	1	-----	-----	115	205	200	V	
PAO EI 41M	N/A	4000±1000	41.0±1.0	42.0±1.0	扁平線、大圓線使用 It is suitable for rectangular wire. It can also be used for large round wire.	1.60	85	3	220	410	12.4	30	2	-----	-----	100	220	200	V	
PAO EI 38MQ	NA	1500±300	38.0±1.0	39.0±1.0	扁平線作業、密著性 For rectangular wire application, excellent adhesion.	1.60	83	3	220	403	10.7	30	2	-----	-----	105	185	200	V	

\* 耐熱衝擊符合 NEMA 標準  
\* The heat shock test conform to the standard of NEMA

## Polyvinyl Formal Wire Enamel (PVF)

聚乙烯醇縮甲醛漆包線漆

Product	Viscosity		Solid Content		Characteristics And Applications	Conductor Diameter	Film Thickness	Heat Shock		Cut Through	Breakdown Voltage	Flexibility		Tanδ	Thermal Index	UL File No. E173840	
產品名稱	粘度		固體含量 (%)			特性及應用	裸線直徑	漆膜厚度	耐熱衝擊		軟化擊穿	擊穿電壓	拉斷露銅	皮膜鼓起	介質損耗	耐熱指數	UL 認證號碼 E173840
	Ford cup (#4)	Brookfield type	170°C × 2hr × 1.5g	180°C × 1hr × 1.0g			mm	μm	x d	°C	°C	kV	mm	mm	°C	°C	
PVF SU 28A	N/A	2800±700	28.0±1.0	27.0±1.5	耐油性、作業性、密著性佳 Excellent resistance of transformer oil, workability and adherence.	1.20	70	3	175	285	9.0	< 1	< 3	130	120	-----	
PVF SU 30A	N/A	4500±1000	30.0±1.0	29.0±1.5													
PVF SU 24GD	330±35	1000±250	24.0±1.0	23.0±1.5	耐油性、作業性、密著性佳、金黃色系 Excellent resistance of transformer oil, workability and adherence, the wire color is golden yellow.	1.20	70	3	175	275	10.0	< 1	< 3	128	120	-----	
PVF SU 28GD	N/A	2800±700	28.0±1.0	27.0±1.5													

\* 耐熱衝擊符合 NEMA 標準  
\* The heat shock test conform to the standard of NEMA

# Selfbonding Wire Enamel (SB)

## 自粘性漆包線漆

Product	Viscosity		Solid Content		Characteristics And Applications	Conductor Diameter	Film Thickness	Bonding Temperature	Bonding Time	Bonding Strength	Resoftening Temperature
產品名稱	粘度		固體含量 (%)		特性及應用	裸線直徑	漆膜厚度	粘結溫度	粘結時間	粘結強度	再軟化溫度
	Ford cup (#4)	Brookfield type	120°C × 3hr × 1.2g	180°C × 1hr × 1.0g		mm	μm	°C	min	N	°C
	sec 25°C	mPa·s 30°C									
FBL 7P	25±5	50±5	7.0±1.5	7.0±1.5	縮丁醛系，酒精 / 熱風加工，空心線圈與音圈等應用 PVB type, bonding by alcohol or hot air, can be applied to air coil and voice coil.	0.30	15	130~150	30	1.0	110~130
TCV UF 8M	30±5	65±5	8.0±1.0	8.0±1.0	尼龍系，通電 / 熱風加工，小型馬達、智能卡、無線充電等應用 Nylon type, bonding by hot air/electricity, can be applied to small electric motor, smart card, and wireless charging.	0.30	15	140~160	30	1.8	120~140
TCV UF 12M	170±20	400±100	12.0±1.0	12.0±1.0							
TCV UF 8	30±5	65±5	8.0±1.0	8.0±1.0	尼龍系，酒精 / 熱風加工，小型音圈、中大型馬達應用，也可取代含浸漆 Nylon type, bonding by alcohol or hot air, can be applied to small voice coil, large or medium motor. It can replace dipping varnish.	0.30	15	160~190	30	2.0	140~160
TCV UF 12	170±20	400±100	12.0±1.0	12.0±1.0							
TCV UF 16EN	170±20	400±100	16.0±1.0	16.0±1.0	綠色產品 (低臭味)，尼龍系，酒精 / 熱風加工，音圈、馬達應用 Environmental friendly product (low odor), nylon type, bonding by alcohol/hot air, for voice coil, motor application.	0.30	12	170~190	30	2.0	150~170
FSB BT 16	130±20	280±100	16.0±1.0	16.0±1.0	尼龍 - 環氧系，酒精 / 熱風加工，耐熱性，音圈、馬達應用 Nylon-epoxy type, bonding by alcohol/hot air processing, excellent thermal resistance. For voice coil, motor application.	0.30	13	170~190	30	2	185~190
FCV DP 25	N/A	2500±500	25.0±1.0	25.0±1.0	環氧系，通電 / 熱風加工，適用於電機馬達 Epoxy type, bonding by hot air/electricity, can be applied to hermetic application and electric motor.	0.30	15	160~180	30	1.5	150~170
FCV DP 25AA-1	200±20	800±200	25.0±1.0	25.0±1.0		環氧系，通電 / 熱風加工，無甲酚低臭味自粘漆；適用於電機馬達 Epoxy type, bonding by hot air/electricity, cresol free and low odor SB enamel, can be applied to electric motor.					
FSB DF 12SL	60±10	120±30	12.0±1.0	12.0±1.0	尼龍系，通電 / 熱風加工，震動馬達、手錶線圈，無線充電應用 Nylon type, bonding by hot air with low bonding temperature/electricity, can be applied to vibration motor, watch coil, and wireless charging.	0.30	15	120~140	30	2.0	100~120
FSB DF 20SL	N/A	1200±300	20.0±1.0	20.0±1.0							
FSB YF 10LA	40±5	80±20	9.0±1.0	9.0±1.0	尼龍系，通電 / 熱風加工，風扇馬達、小型馬達應用 Nylon type, bonding by hot air/electricity, can be applied to fan motor and small motor.	0.30	15	140~170	30	2.0	120~140
FSB YF 15LA	190±20	600±150	15.0±1.0	15.0±1.0							
FSB FZ 17LA	N/A	1200±300	17.0±1.0	17.0±1.0	尼龍系，通電 / 熱風加工，小型馬達、震動馬達應用 Nylon type, bonding by hot air/electricity, can be applied to small motor, vibration motor.	0.30	15	160~180	30	2.0	140~160
FSB JY 10LA	57±10	100±20	10.0±1.0	10.0±1.0	尼龍系，通電 / 熱風加工，小型馬達、震動馬達應用 Nylon type, bonding by hot air/electricity, can be applied to small motor, vibration motor.	0.30	15	170~190	30	2.0	150~170
FSB JY 19LA	N/A	1200±300	19.0±1.0	19.0±1.0							
FSB PH 9A	33±5	65±10	9.0±1.0	8.0±1.0	尼龍系，通電 / 熱風加工，部分熱硬化高溫自粘漆，應用於風扇馬達、耐熱馬達 Nylon type, bonding by hot air/electricity, partial thermo-setting SB enamel, can be applied to fan motor and thermoresistant motor.	0.30	15	180~210	30	1.5	180~190
FSB PH 24A	N/A	1500±400	24.0±1.0	23.0±1.0							
FSB AN 30	N/A	1200±300	30.0±1.0	26.0±1.0	芳香族尼龍系，高濃度化，通電 / 熱風加工，無甲酚低臭味，適用於耐熱電機、壓縮機；可與底漆同溫同爐作業 Aromatic nylon type, high solid content, bonding by hot air/electricity, cresol free and low odor SB. Can be applied to thermoresistant electric motor, compressor. It can be worked under same oven same temperture as base coating.	0.30	20~25	210~240	30	1.5	210~220
FSB AN 30B	N/A	1200±300	30.0±1.0	26.0±1.0	芳香族尼龍系，高粘著力、高濃度化，通電 / 熱風加工，無甲酚低臭味，適用於耐熱電機、壓縮機；可與底漆同溫同爐作業。熔着溫度低 Aromatic nylon type, great adhesion and solid content, bonding by hot air/electricity, cresol free and low odor SB. Can be applied to thermoresistant electric motor, compressor. It can be worked under same oven same temperture as base coating. low bonding temperture.	0.30	20~25	190~220	30	2.0	190~210
FSB ECO 110L	N/A	45±15	10.0±1.0	10.0±1.5	無酚系環保 SB，尼龍系，通電 / 熱風加工，低溫融著加工，震動馬達、手錶線圈，無線充電應用 Environmentally friendly Enamel (free cresol/phenol/xlylenol), Nylon type, bonding by hot air/electricity, low bonding temperture, Vibration motor, watch coil, wireless charging application.	0.30	15~20	120~140	30	2.0	80~100
FSB ECO 212LA	N/A	240±60	12.0±1.0	12.0±1.5	無酚系環保 SB，尼龍系，通電 / 熱風加工，震動馬達、手錶線圈，無線充電應用 Environmentally friendly Enamel (free cresol/phenol/xlylenol), Nylon type, bonding by hot air/electricity, Vibration motor, watch coil, wireless charging application.	0.30	15~20	150~180	30	2.0	120~140

※ 再軟化溫度：依據黏結力測試 JIS C3003  
※ Resoftening temperature is according to bonding test JIS C3003

## Polyamide-imide Wire Enamel (PAI)

聚醯胺醯亞胺漆包線漆

Product	Viscosity		Solid Content		Characteristics And Applications	Conductor Diameter	Film Thickness	Heat Shock		Cut Through	Breakdown Voltage	Flexibility		Tan $\theta$ (Static Type)	Freon Resistance Extraction		Freon Resistance B.D.V. residue		Freon Resistance Blister		Tan $\delta$	Thermal Index	UL File No. E173840		
	粘度		固體含量 (%)					特性及應用										介質損耗	耐熱指數						
	Ford cup (#4)	Brookfield type	200°C ×2hr×1.5g	180°C ×1hr×1.0g				裸線直徑	漆膜厚度			耐熱衝擊	軟化擊穿		擊穿電壓	柔韌性	靜滑性係數			R-22				R-134a	R-22
sec 25°C	mPa·s 30°C			mm	μm	x d	°C	°C	kV	%	x d	%	%	%	°C * 10min	°C * 10min									
NH AI 20PA	25±5	60±10	20.0±1.0	21.0±1.5	細線毛氈作業、耐熱性佳 For fine wire with felt coating. Excellent heat shock and freon resistance.	0.10	20	1	240	420	8.0	20	1	-----	-----	-----	-----	-----	-----	290	220	V			
NH AI 32P	340±35	1000±250	32.0±1.0	33.0±1.5	作業性、耐熱性、耐冷媒性佳 Excellent heat shock and freon resistances. Good workability.	0.50	47	1	240	440	12.0	20	1	-----	0.05	0.03	98	98	160	160	285	220	V		
NH AI 27S	N/A	1500±300	27.0±1.0	28.0±1.5	大線單塗作業、拉斷露銅密著、可撓性佳 For large wires single coat application. Excellent adherence and flexibility.	1.60	70	1	240	430	14.5	15	1	-----	0.05	0.03	98	98	160	160	290	220	V		
NH AI 30S	N/A	2800±500	30.0±1.0	31.0±1.5																					
NH AI 30SCZ	N/A	2800±900	30.0±1.0	31.0±1.5	抗焊錫鼓泡、高耐軟化 Free blister for soldering process. High cut through.	1.60		1	240	460	14.0	15	1	-----	0.05	0.03	98	98	160	160	290	220	-----		
NH AI 30MSLK	220±20	700±150	30.0±1.0	31.0±1.5	自潤滑、滑性係數佳、往復式耐磨耗佳、外層批覆專用 Self-lubricating PAI enamel, excellent coefficient of static friction and abrasion resistance (reciprocative), use for top coat.	0.50 (Base coat: FEI 9838HMA)	55	2	220	365	14.5	20	1	0.04-0.06	0.11	0.07	96	98	140	140	200	-----	-----		
NH AI 30MLK	270±30	800±200	30.0±1.0	31.0±1.5	自潤滑、滑性係數佳、外層批覆專用 Self-lubricating PAI enamel, excellent coefficient of static friction, use for top coat.	0.50 (Base coat: FEI 9838HMA)	55	2	220	370	14.0	20	1	0.04-0.06	0.09	0.07	96	98	140	140	200	-----	-----		
NH AI 34HD	340±35	1000±250	34.0±1.0	35.5±1.5	高濃度低粘度、雙塗作業專用 High solid content with low viscosity, use for double coat.	0.50 (Base coat FEI 0540)	45	2	240	390	12.0	20	1	-----	0.05	0.03	98	98	140	140	280	220	V		
NH AI 37HD	N/A	2000±400	37.0±1.0	38.5±1.5																					
PAO AI 27S	N/A	1500±300	27.0±1.0	28.0±1.5	扁平線、大圓線使用 It is suitable for rectangular wire. It can also be used for large round wire.	1.60	70	1	240	435	14.0	15	1	-----	0.05	0.03	98	98	160	160	290	220	V		
PAO AI 30S	N/A	2800±500	30.0±1.0	31.0±1.5																					
PAO AI 30W(WZ)	NA	1600±400	30.0±1.0	31.0±1.5	扁平線作業、密著性佳 For rectangular wire application, excellent adhesion.	1.60	75	2	240	395	11.3	25	1	-----	-----	-----	-----	-----	-----	274	220	-----			
PAO AI 33AOW	NA	2000±500	33.0±1.0	34.0±1.5	AI 系塗料，耐油性佳，外層塗覆專用，傳統爐及高速爐作業性佳 AI series, excellent oil and water resistant, Top coat enamel, excellent working condition on tradition and fast machines.	1.20	45	2	240	390	12.0	20	1	-----	0.05	0.03	98	98	140	140	280	220	-----		

※耐熱衝擊符合 NEMA 標準

※ The heat shock test conform to the standard of NEMA

## Anti-Surge Polyesterimide Wire Enamel (SR)

高耐熱性抗電暈塗料

Product	Viscosity		Solid Content		Characteristics And Applications	Conductor Diameter	Film Thickness	Heat Shock		Cut Through	Breakdown Voltage	Flexibility		Tan $\delta$	Thermal Index	UL File No. E173840								
	粘度		固體含量 (%)					特性及應用										介質損耗	耐熱指數					
	Ford cup (#4)	Brookfield type	200°C ×2hr×1.5g	180°C ×1hr×1.0g				裸線直徑	漆膜厚度			耐熱衝擊	軟化擊穿				擊穿電壓			柔韌性	介質損耗	耐熱指數	UL 認證號碼 E173840	
sec 25°C	mPa·s 30°C			mm	μm	x d	°C	°C	kV	%	x d	°C	°C											
PAO EI 38ASA	N/A	1300±250	38.0±1.0	39.0±1.5	EI 系塗料，傳統爐及高速爐作業性佳、抗電暈特性佳 EI type enamel, suitable for high speed machine as well as traditional machine. Excellent workability and anti-surge time.	0.80	70	3	220	415	13.0	15	1	200	200	-----								
PAO AI 29ASD	N/A	2600±600	29.0 ± 1.0	30.0 ± 1.5	AI 系塗料，外層塗覆專用，傳統爐及高速爐作業性佳；底層使用 PE 或 PEI，外層使用本產品，可達到抗電暈特性 AI type enamel, use for top coating. Suitable for high speed machine as well as traditional machine. Great anti-surge time for coating PE or PEI in base-coat, and this series in top-coat.	1.20	90	2	240	440	15.0	20	3	275	220	-----								
PAO AI 29ASM	N/A	1800 ± 500	29.0 ± 1.0	30.0 ± 1.5	AI 系塗料，耐油性佳，外層塗覆專用，傳統爐及高速爐作業性佳；底層使用 PE 或 PEI，外層使用本產品，可達到抗電暈特性 AI type enamel, Excellent oil and water resistant, suitable for high speed machine as well as traditional machine. Great anti-surge time for coating PE or PEI in base-coat, and this series in top-coat.	1.20	90	2	240	440	15.0	20	3	275	220	-----								
FPI 525AS	NA	4000±1000	25.0±1.5	26.0±1.5	PI 系塗料，耐油性佳，外層塗覆專用，作業性佳；底層使用 AI 或 PI，外層使用本產品，可獲得抗電暈性 PI type enamel, Excellent oil and water resistant. Great anti-surge time for coating AI or PI in base-coat, and this series in top-coat.	0.80	79	1	280	512	9.1	10	1	300	240	-----								
PAO PI 21AS	NA	2500±500	21.0±1.5	22.0±1.5	PI 系塗料，外層塗覆專用，作業性佳；底層使用 AI 或 PI，外層使用本產品，可獲得抗電暈性 PI type enamel, special for outer layer coating, excellent workability, use PE or PEI for the base layer. Great anti-surge time.	0.80	45	1	280	550	8.5	20	1	267	240	-----								

※耐熱衝擊符合 NEMA 標準

※ The heat shock test conform to the standard of NEMA

## Polyimide Wire Enamel (PI)

聚醯亞胺漆包線漆

Product	Viscosity		Solid Content		Characteristics And Applications	Conductor Diameter	Film Thickness	Heat Shock		Cut Through	Breakdown Voltage	Flexibility		Tanδ	Thermal Index	UL File No. E173840	
產品名稱	粘度		固體含量 (%)			特性及應用	裸線直徑	漆膜厚度	耐熱衝擊		軟化擊穿	擊穿電壓	柔韌性		介質損耗	耐熱指數	UL 認證號碼 E173840
	Ford cup (#4) sec 25°C	Brookfield type mPa·s 30°C	200°C × 2hr × 1.5g	180°C × 1hr × 1.0g			mm	μm	x d	°C	°C	kV	%	x d	°C	°C	
FPI 321	NA	2500±500	21.0±1.5	22.0±1.5	高耐熱性、可撓性、耐熱衝擊、抗焊錫起泡 Excellent thermal resistance, flexibility, heat shock and free blister for soldering process.	0.50	30	1	280	516	9.4	30	1	275	240	---	
FPI 324A	NA	4000±1000	24.0±1.5	25.0±1.5	附著性佳、高耐熱性、可撓性、耐熱衝擊、抗焊錫起泡 Excellent adhesion, Excellent thermal resistance, flexibility, heat shock and free blister for soldering process.	0.50	30	1	280	502	9.4	30	1	270	240	---	
FPI 525	NA	4000±1000	25.0±1.5	26.0±1.5	耐油性佳、高耐熱性、可撓性、耐熱衝擊、抗焊錫起泡 Excellent oil and water resistant, Excellent thermal resistance, flexibility, heat shock and free blister for soldering process.	0.50	30	1	280	516	9.4	30	1	300	240	---	

※ 耐熱衝擊符合 NEMA 標準  
※ The heat shock test conform to the standard of NEMA

## Over Coating

外層批覆漆

Product	Viscosity		Solid Content		Characteristics And Applications	Tanθ (Dynamic type)	Tanθ (Static type)	
產品名稱	粘度		固體含量 (%)			特性及應用	動滑性係數	靜滑性係數
	Ford cup (#4) sec 25°C	Brookfield type mPa·s 30°C	120°C × 3hr × 1.2g	180°C × 1hr × 1.0g				
FOV S 8	57±10	100±30	8.0±1.0	8.0±1.0	尼龍 -6,6 型，具優良的滑性及耐磨性（毛氈作業，眼模作業），可與 PE/EI/PU 同溫同爐作業。	0.08~0.10	0.03~0.05	
FOV S 16	N/A	1800±300	16.0±1.0	16.0±1.0	Nylon-6,6 type varnish with self-lubricating, excellent coefficient of friction and abrasion resistance. Suitable for working under same oven temperature with PE/EI/PU.			
FOV Z 8LA	65±10	200±50	8.0±1.0	8.0±1.0	尼龍 -6,6 型，具優良的滑性及耐磨性（毛氈作業，眼模作業），可與 PU 同溫同爐作業。	0.10~0.12	0.05~0.07	
FOV Z 15LA	N/A	2000±500	15.0±1.0	15.0±1.0	Nylon-6,6 type varnish with self-lubricating, excellent coefficient of friction and abrasion resistance. Suitable for working under same oven temperature with PU.			

## Lubricant

外部滑劑

Product	Viscosity	Solid Content	Characteristics And Applications	Tanθ (Dynamic type)	Tanθ (Static type)	
產品名稱	粘度	固體含量 (%)		特性及應用	動滑性係數	靜滑性係數
	Brookfield type mPa·s 30°C	120°C × 3hr × 1.2g				
FLK 332A	3±2	1.2±0.5	中細線用外部潤滑，滑性係數佳 Exterior lubricant for medium wire, excellent performance on the coefficient of friction.	0.05~0.08	0.04~0.07	
FLK 550A	N/A	50.0±1.5	大線用固態滑劑，稀釋後使用 Solid-state lubricant for large wire, use after dilution.			
FLK 332K	3±2	1.0±0.5	外部潤滑，滑性係數、析出性佳 Exterior lubricant, excellent performance on the coefficient of friction.	0.07~0.10	0.06~0.09	