

POKETONE for E&E Connector

Global Warming Potential

* PA6	6.70	
* PA66	6.40	
* PC	3.40	
* POM	3.20	
* ABS	3.10	
** PK	3.08	(kg CO ₂ eq)

* Other ETP data is based upon the Eco-profiles data from www.plasticseurope.org

** PK Data is based upon Korea LCI database and Ecoinvent database.



Non Toxic High Efficiency

Acrylate Free
Melamine Free
Bisphenol A Free
Formaldehyde Free
Lead/ Chrome/ Free
Phthalate Free

POKETONE
HYOSUNG POLYKETONE

POKETONE for E&E Connector

Excellent flame retardancy, flexibility and dimensional stability ensure that components made of POKETONE are suitable for electrical & electronics connectors.

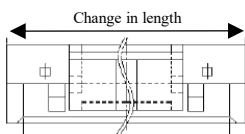


- Dimensional stability and Cycle time reduction
- Material specialized for connectors with excellent snapping characteristics.
- Flame retardant PA66 can be changed without mold modification.
- Eco-friendly and low global warming potential.

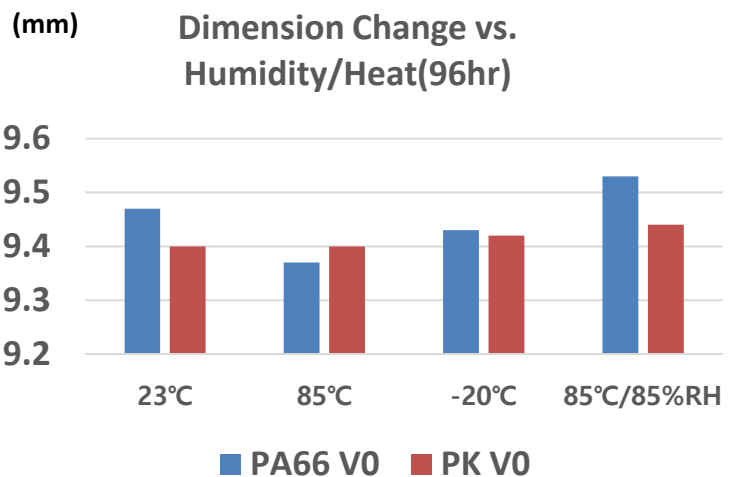
※ Test Method

Time : 96hr

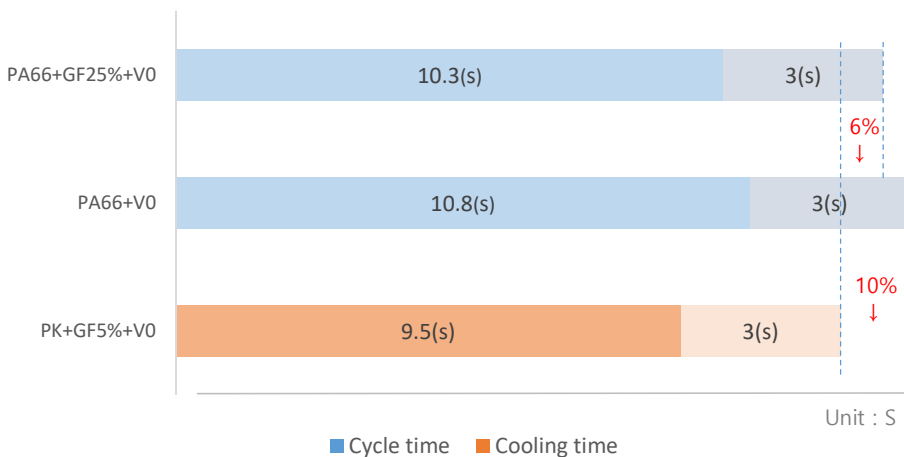
Temp. : 23°C, 85°C, -20°C, 85°C/85%RH




POKETONE has hydrolysis resistance and low moisture absorption so Better dimensional stability compared to PA66+V0 under high humidity and heat condition.



Fast crystallization and good flowability

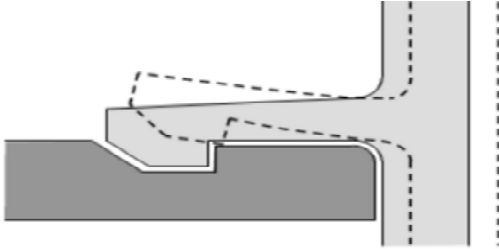


Be effective cycle time reduction as well as good flowability compare to PA66. Therefore, easy to mold thin wall parts.

Flow length	Unit	PK	PA66
	mm	780	640

POKETONE for E&E Connector

Excellent snap-fit properties



A snap-fit is an assembly method used to attach flexible parts, usually plastic connector, to form the final product by pushing the parts' interlocking components together.

High elongation and flexibility properties ensure that components made of POKETONE are suitable for E&E connector application better than another engineering plastics.

Deflection	PA	POM	PK
2 mm			
6 mm			
12 mm			
20 mm			

Excellent Impact Resistance

Properties	Method	Unit	PK M330	PBT
Elongation at Break	ASTM D638	%	>200	<100
Notched Charpy	ISO 179/1eA	kJ/m ²	9	4-8
Falling Dart Failure Mode at -40°C	-	Brittle /Ductile	Highly brittle	Highly brittle

Thanks to its inherent chemical structure, Poketone base resin shows much ductile and impact resistant characteristics than PBT..

Especially at low temperature, Poketone can maintain ductile fracture mode whereas PBT cannot stand and shows brittle one.

Connector makers can utilize this merit of Poketone to avoid unexpected fracture at winter season.

Falling Dart Impact	PK	PBT #1	PBT #2
@-40°C			

POKETONE for E&E Connector

IEC 60335-1 Standard Compliance

※ POKETONE

GWFI : 960°C, GWIT : 825°C, GWT : 750°C



※ Passed 750°C GWT on connectors

POKETONE complies with the safety standard for household and similar electrical appliances (IEC 60335-1).

Especially, POKETONE connectors have passed the Glow Wire Tests at 750°C (IEC 60695-2-11) on about 60 types of connectors; all the results are “No Ignition”.

Currently RTI is marked as 50°C, but is expected to be 80°C for the base resins and 110 °C for the glass-reinforced ones.

Properties	Unit	POKETONE(V0)	PA66(V0)
GWT @ 750°C (Glow Wire Test)	-	No ignition	Ignition
GWIT (Glow Wire Ignition Temperature)	°C	825	850

Flame resistance & Electrical properties

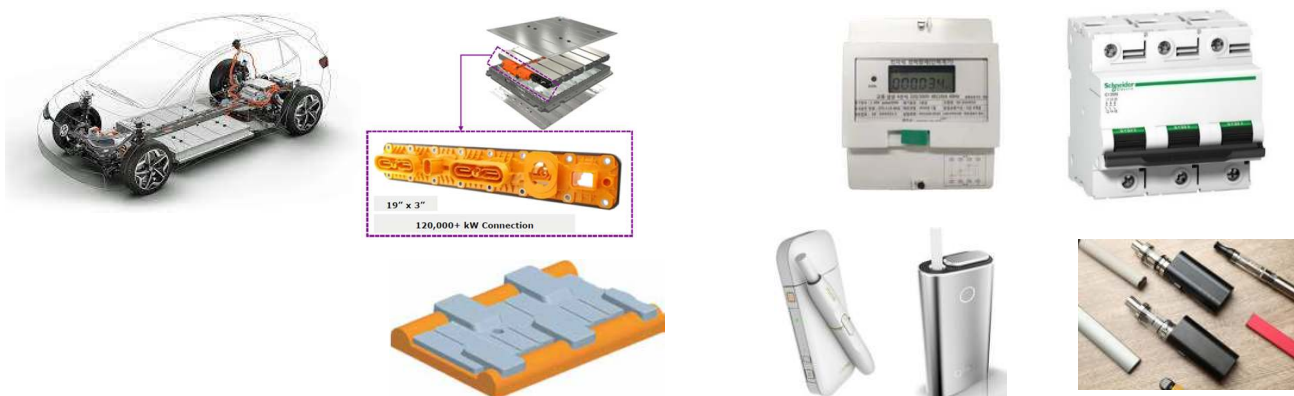
Properties	Unit	POKETONE V0 Grade	PA66 V0 Grade
Flammability - 0.8mm	UL94	V0	V0
HWI (Hot Wire Ignition) - 0.8mm (시편이 발화할 때까지 버티는 시간)	PLC* (Ignition Time)	1 (60~120 s)	3 (15~30 s)
HAI (High Current Arc Ignition) - 0.8mm (시편이 발화할 때까지 Arc 횟수)	PLC (The number of Arc)	0 (Over 120)	0 (Over 120)
CTI (Comparative Tracking Index) (전해액 50방울 낙하시 Short-cut 되는 전압)	PLC (Voltage)	0 (Over 600V)	0 (Over 600V)
Dielectrical Strength (고전압에 대한 절연파괴 강도)	kV/mm	29	22
HVTR (High Voltage Arc Tracking Rate) (고압, 저전류 환경에서 시편 탄화 속도)	PLC (mm/min)	2 (25.4~80mm/min)	2 (25.4~80mm/min)

※ PLC: Performance Level Category (UL)

POKETONE Flame Retardant Grade Portfolio

We support 8 flame retardant Poketone grades portfolio for electrical, electronics, and appliance markets.

- connectors with excellent snapping characteristics.
- complies with the safety standard *IEC 60335-1*
- *Glow Wire Tests at 750°C* (IEC 60695-2-11) on about 60 types of connectors



Grade Portfolio

Properties		Method	Unit	M33AF1Y	M33AF2Y	M33AG2Y	M33AD2Y	M33AA2Y	M93FA2Y	M93FB5Y	M93FA7Y
Flammability	t=0.4mm	UL 94	Class	V0							
	t=0.8mm			V0	V0	V0	V0	V0	V0	V0	
	t=1.6mm			V0	V0	V0	V0	V0	V0	V0	V0
Relative Thermal Index		UL 746b						105°C(elec)			
Weatherability		UL 746c					F1-F2				
Density		ASTM D792	g/cm ³	1.25	1.26	1.29		1.48	1.48	1.48	1.46
GF contents		-	%	-	-	5	15	30	30	30	30
Tensile Strength at Yield		ASTM D638	MPa	46	50	53	65	112	120	115	135
Elongation at Break		ASTM D638	%	35	40	18	6	4.3	3.5	3.5	3
Flexural Strength		ASTM D790	MPa	65	58	79	117	176	190	180	192
Flexural Modulus		ASTM D790	MPa	1,900	1,700	2,550	4,370	7,300	8,200	7,700	7,800
Notched Impact strength		ISO 79/1eA	kJ/m ²	4.5	8	6	8	10.3	9.3	9.5	12
Melting Temperature		ASTM D3418	°C	222	222	222	222	222	222	222	222
Melt Flow Index (240°C, 2.16kg)		ASTM D1238	g/10min	35	34	25	13	8	40	33	40

UL 746b/746c Listing on M33AD2Y , M33AA2Y

Poketone M33AD2Y has UL 746c F1 rating with 0.8tV0, and M33AA2Y complies with has UL 746b long term thermal index as 105°C(EIS Class A)

Component - Plastics E163907
Guide Information [View Certificate of Compliance](#)

Hyosung Chemical Corp
235, Banpo-daero, Seocho-gu, Seoul Seoul 06578 KR

M33AD2Y (f1)
Polyketone (PK) "POKETONE", furnished as pellets

Color	Min. Thk (mm)	Flame Class	HWI	HAI	RTI Elec (°C)	RTI Imp (°C)	RTI Str (°C)
WT, BK, RD	0.8	V-0	-	-	50	50	50
	3.0	V-0	-	-	50	50	50


Comparative Tracking Index (CTI): -
Dielectric Strength (kV/mm): -
High-Voltage Arc Tracking Rate (HVTR): -
Dimensional Change (%): -

Inclined Plane Tracking (IPT) kV: -
Volume Resistivity (10^x ohm-cm): -
Surface Resistivity (10^x ohms/square): -
High Volt, Low Current Arc Resis (D495): -

(f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

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ALSO CERTIFIED TO IEC REQUIREMENTS

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Component - Plastics E163907
Guide Information [View Certificate of Compliance](#)

Hyosung Chemical Corp
235, Banpo-daero, Seocho-gu, Seoul Seoul 06578 KR

M33AA2Y
Polyketone (PK), furnished as pellets


Color	Min. Thk (mm)	Flame Class	HWI	HAI	RTI Elec (°C)	RTI Imp (°C)	RTI Str (°C)
ALL	0.8	V-0	-	-	105	70	115
	1.6	V-0	-	-	105	70	115
	3.0	V-0	-	-	105	80	125

Comparative Tracking Index (CTI): -
Dielectric Strength (kV/mm): -
High-Voltage Arc Tracking Rate (HVTR): -
Dimensional Change (%): -

Inclined Plane Tracking (IPT) kV: -
Volume Resistivity (10^x ohm-cm): -
Surface Resistivity (10^x ohms/square): -
High Volt, Low Current Arc Resis (D495): -

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New Ecofriendly FR Poketone with Low Smoke Density

Poketone M93FE5Y is newly designed flame retardant Poketone with eco-friendliness, low smoke density and high flowability.

Properties	Unit (ISO)	M93FE5Y
MFR(240°C, 2.16kg)	g/10min	101
Tensile strength	MPa	37
Tensile elongation at break	%	17
Flexural modulus	MPa	2760
Flexural strength	MPa	58
Notched Charpy	kJ/m ²	5.3
Flammability	UL94	V0 at 1.6mm



Spiral flow length (2t, nozzle 240°C, mold 80°C)
- M93FE5Y: initial length is 900mm, and over 95% flow length retention after 30min dwelling

Smoke Density for Poketone M93FE5Y complies with EN45545 & Korean Railway Safety Law Regulation Spec for upholstery, headrest and armrest of train interior parts.

Smoke Density(Ds)		value	Test method	Regulation for Upholstery, headrest & armrest	
Ds max	Non-flaming mode	111	ASTM E662-21 (25kW/m ²)	EN 45545: Ds max < 200	
	Flaming mode	142			
Ds max – Dc	Non-flaming mode	108			Korean Railway Safety Law - Ds(1.5mm) < 100 - Ds(4.0mm) < 175
	Flaming mode	139			
Ds(1.5min)	Non-flaming mode	13			
	Flaming mode	44			
Ds(4.0min)	Non-flaming mode	69			
	Flaming mode	127			



· POKETONE commercial Plant in South Korea, Ul-san City, Production capacity : 50,000 MT/Year



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