

TM

POKETONE

HYOSUNG POLYKETONE

Non Toxic High Efficiency



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

Global Warming Potential

* PA6	6.70
* PA66	6.40
* PBT	4.88
* PC	3.40
* POM	3.20
** PK	3.08 (kg CO ₂ eq)

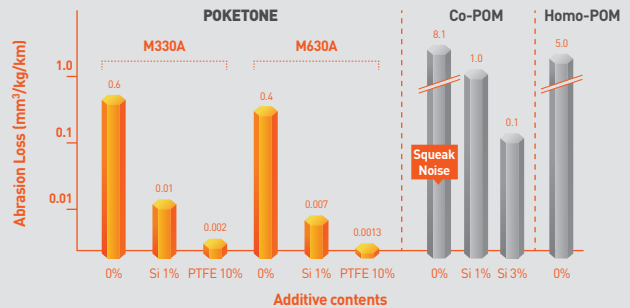
* Other ETP data is based upon the Eco-profiles data from www.plasticseurope.org

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

A new thermoplastic polymer HYOSUNG POKETONE is a family of semi-crystalline aliphatic polyketone, made of carbon monoxide(CO) and olefins. POKETONE Terpolymer of CO, ethylene and propylene are used as engineering plastics in a broad range of applications with eco-friendly and non-toxic characteristics, such as low TVOCs(Total volatile organic compounds), free of formaldehyde and acrylonitrile, making it perfect not only for automotive parts but also toys, cosmetic cases and food contact applications.

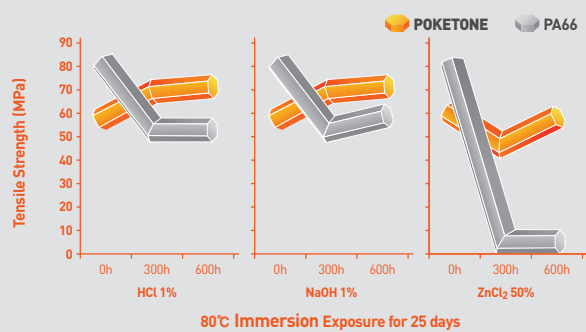
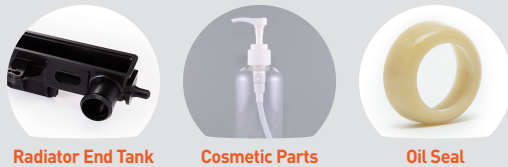
Abrasion/ Wear Resistance

14 times higher wear properties than POM, reducing noise issues in variable wear applications



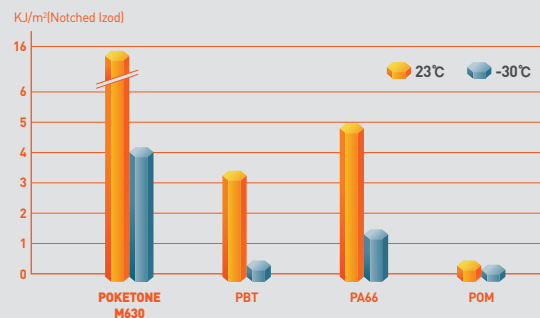
Chemical Resistance

Highly resistant to automotive fluids, hydrocarbon solvents, salts and weak acids/bases



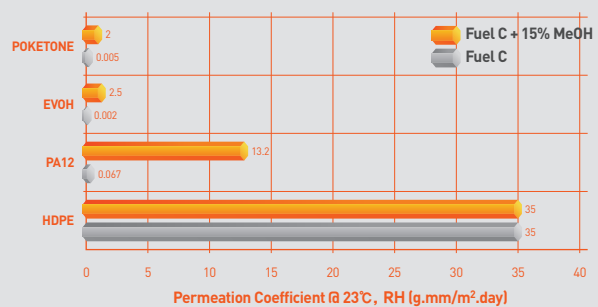
Impact Strength

More than 2.3 times higher impact strength compared to Nylon, PBT



Barrier Properties

Excellent barrier properties against hydrocarbon, fuel and acid gas for industrial uses



Hydrolysis Resistance

Stable property retention to moisture, moisture absorption is approximately 1/4, compared to PA



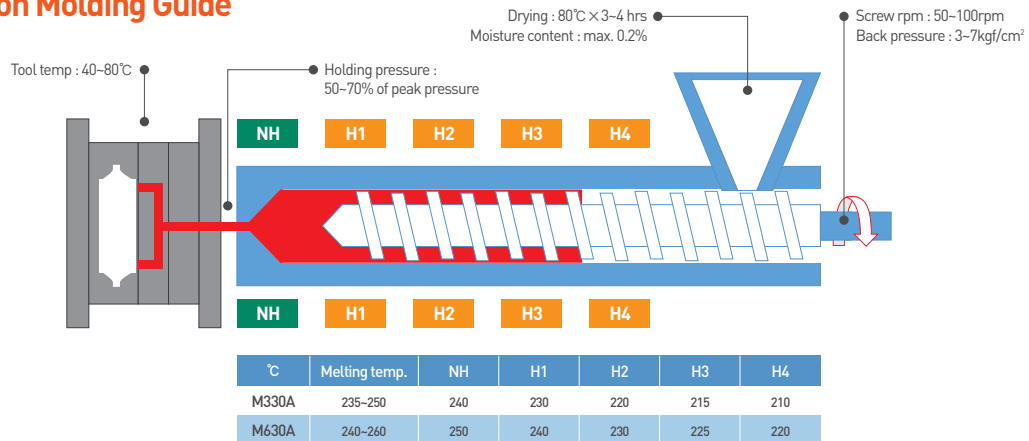
POKETONE Base & Conductive

Properties	Test Method	Unit	Base							Conductive			
			M930	M330	M630	M730	M410	M710	M640	M93FC1T	M93FC1G	M93FC1F	
Physical Property													
Density	ASTM D792	g/cm ³	1.24	1.24	1.24	1.24	1.22	1.22	1.24	1.37	1.34	1.34	
Mould Shrinkage (3mm thick.)	ASTM D955	%	1.8~2.0	1.8~2.0	1.8~2.0	1.8~2.0	1.6~1.8	1.6~1.8	1.8~2.0	1.1~4.2	0.3~0.8	0.2~0.7	
Thermal Property													
Melting Temperature	ASTM D3418	°C	222	222	222	222	197	197	235	222	222	222	
Melt Flow Index (240°C, 2.16kg) 220°C for M710 & M410, 255°C for M640	ASTM D1238	g/10min	200	60	6	3	35	3	6	5	5	5	
HDT (18.6 kgf/cm ²)	ASTM D648	°C	105	105	102	102	72	75	130	-	-	-	
HDT (4.6 kgf/cm ²)			200	200	195	190	155	155	215	-	-	-	
Mechanical Property													
Tensile Strength at Yield	23°C	ASTM D638	MPa	63	60	58	56	45	43	67	48	101	103
Elongation at Break			%	≥100	≥200	≥200	≥200	≥200	≥200	≥200	≥200	5.4	3.2
Flexural Strength	23°C	ASTM D790	MPa	61	57	53	50	45	40	54	70	147	147
Flexural Modulus			MPa	1,550	1,500	1,350	1,250	1,050	900	1,500	3,070	5,360	5,040
Notched Izod Impact Strength	23°C	ASTM D256	J/m	60	95	220	240	110	200	300	-	-	-
		ISO 180/1A	kJ/m ²	6	7	15	20	7	15	22	-	-	-
	-30°C	ASTM D256	J/m	30	40	52	52	40	50	70	-	-	-
		ISO 180/1A	kJ/m ²	2	3	4	4	3	4	6	-	-	-
Notched Charpy Impact Strength	23°C	ISO 179/1eA	kJ/m ²	6	8	17	19	7	14	19	2.9	8.5	10.2
	-30°C		kJ/m ²	2	2	3	4	3	3	4	-	-	-
Surface Resistivity	ASTM D257	Ω/m ²	-	-	-	-	-	-	-	10 ⁴⁻⁶	10 ⁴⁻⁶	10 ⁴⁻⁶	
Flammability	UL 94	Class	HB	HB	HB	HB	HB	HB	HB	-	-	-	

* Moisture Absorption (23°C, 50%RH) : 0.5% / Flammability : HB (0.8, 1.5, 3.0mm thick.)

* The data listed here is not for specification warranty, but typical value.

Injection Molding Guide



- Heated nozzles are recommended to prevent freeze-off issue at nozzle due to small sized nozzle orifice or rapid solidification of POK.
- Should be thoroughly purged at processing temperature with purging material such as PCTG, HDPE, GPPS or other commercially available purging compounds.

POKETONE Compound Properties

Properties	Test Method	Unit	GF reinforced					
			General			Food & Drinking Water		
			M93FG6A	M93FG9A	M43AG6A	M33FG6A	M33FG9A	M33FG6B
			GF 30%	GF 50%	GF 30%	GF 30%	GF 50%	GF 30%
Density	ASTM D792	g/cm ³	1.46	1.68	1.48	1.46	1.65	1.46
HDT(18.6kgf/cm ²)	ASTM D648	°C	210	210	210	210	210	210
HDT(4.6kgf/cm ²)	ASTM D648	°C	215	215	215	215	215	215
Melt Flow Index (240°C, 2.16kg)	ASTM D1238	g/10min	46	25	4.4	20	4	20
Tensile Strength at Yield	ASTM D638	MPa	145	165	130	140	170	140
Elongation at Break	ASTM D638	%	3	2	3	4	1.7	4
Flexural Strength	ASTM D790	MPa	190	214	191	190	235	190
Flexural Modulus	ASTM D790	MPa	7,100	11,800	6,800	6,600	11,100	6,600
Notched Charpy Impact Strength (23°C)	ISO 179/1eA	kJ/m ²	11	11	13	12	13	12

Melting Temperature: 222°C(ASTM D3418)

Properties	Test Method	Unit	Wear resistance					
			Mating Plastic / Low Load			Mating Steel/Low-Medium Load		
			+Rubber	+Si	+Si	+GF	+PTFE&Si	+MF
			M33R3A000	M33AS1A	M63AS1B	M33AG2T	M33AT2E	M63AM2A
Density	ASTM D792	g/cm ³	1.23	1.24	1.24	1.35	1.29	1.31
Melt Flow Index (240°C, 2.16kg)	ASTM D1238	g/10min	68	49	5.7	17	20	0.2
Tensile Strength at Yield	ASTM D638	MPa	48	60	58	68	50	59
Elongation at Break	ASTM D638	%	300	200	200	8	40	77
Flexural Strength	ASTM D790	MPa	45	57	55	102	52	71
Flexural Modulus	ASTM D790	MPa	1,250	1,500	1,300	3,150	1,530	2,400
Notched Charpy Impact Strength (23°C)	ISO 179/1eA	kJ/m ²	21	7	16	12	9	13

Melting Temperature: 222°C(ASTM D3418)

Properties	Test Method	Unit	Flame Retardant					
			M33AF1Y	M33AF2Y	M33AG2Y	M33AA2Y	M93FB5Y	M93FA7Y
			-	-	GF 5%	GF 30%	GF 30%	GF 30%
Flammability (t=0.8mm)	UL 94	Class	0.4T V-0	0.8T V-0	0.8T V-0	0.8T V-0	1.6T V-0	1.6T V-1
Density	ASTM D792	g/cm ³	1.25	1.26	1.29	1.48	1.48	1.46
HDT(18.6kgf/cm ²)	ASTM D648	°C	90	90	150	215	215	215
HDT(4.6kgf/cm ²)	ASTM D648	°C	185	185	207	220	220	220
Melt Flow Index (240°C, 2.16kg)	ASTM D1238	g/10min	35	34	25	8	33	40
Tensile Strength at Yield	ASTM D638	MPa	46	50	53	112	115	135
Elongation at Break	ASTM D638	%	35	40	18	4.3	3.5	3.0
Flexural Strength	ASTM D790	MPa	65	58	79	176	180	192
Flexural Modulus	ASTM D790	MPa	1,900	1,700	2,550	7,300	7,700	7,800
Charpy Notched Impact strength	ISO 179/1eA	kJ/m ²	4.5	8.0	6.0	10.3	9.5	12
Arc Resistance (AR)	ASTM D495	PLC	PLC 5	PLC 5	PLC 5	PLC 5	PLC 5	PLC 5
Hot Wire Ignition (HWI)	ASTM D3874	PLC	PLC 1	PLC 1	PLC 1	PLC 1	PLC 1	PLC 1
Comparative Tracking Index (CTI)	ASTM D3638	PLC	PLC 0	PLC 0	PLC 0	PLC 0	PLC 0	PLC 0

Melting Temperature: 222°C(ASTM D3418)



Automotive

Radiator End Tank /
Fuel Tube / Fuel Tank /
Wheel Cover / Connector
/ Fuel Filler Door




Electronics

Connector /
Gear(OA, Machine) /
Housing



General Purpose

Water Related Parts / Railway
Fastening System /
Cosmetic Parts /
Packaging



Industrial Parts

Pipe & Tube /
Oil Seal / Conveyor Parts /
Cable Tie

Certification



New Wave of Innovation in Materials

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This eco-friendly paper contains 30% regenerated pulp made from recycled paper.



This eco-friendly paper is made from pulp bleached by chlorinated compounds like ClO₂ rather than elemental chlorine, so less dioxin is generated to reduce environmental impact.