

POKETONE Caster



CHEMICAL
RESISTANT



MAX. LOAD



FOOD SAFE



Non Toxic
High Efficiency

EARTH



FRIENDLY

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.



Further Information
www.poketone.com

POKETONE HYOSUNG POLYKETONE

POKETONE™ in Caster

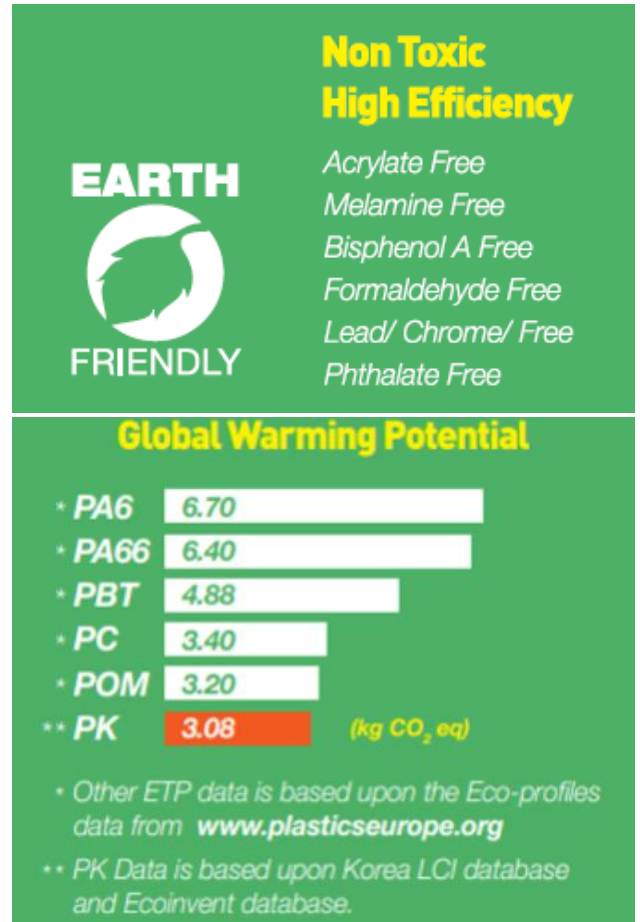
POKETONE™ is Hyosung's trade name for a family of Semi-crystalline aliphatic Polyketone and is employed in many applications demanding a high performance rotation property such as caster and roller.



Thank to balanced properties of POKETONE™ can cover a great number of casters in heavy load, less noise, chemical contact and food and drinking water contact area. POKETONE™ can be a great solution for broad caster industry.

Eco-friendly material

POKETONE™ is eco-friendly (LCA, Lifetime Cycle Assessment is lower than PA6, POM) and non-toxic characteristics, such as no VOCs (Volatile Organic Compounds), free of formaldehyde, heavy metal and acrylonitrile, making it perfect for baby toys, food contact and medical applications. All F grades of POKETONE™ are satisfied with ISO 10993, USP Class VI and FDA.



Certification



European Commission
Food Contact



NSF International



Properties

Properties	Unit	PK M330	PK M630	PK M730	PK M640	PK M330+GF30%	PA6	POM
Density	-	1.24	1.24	1.24	1.24	1.46	1.13	1.41
Melting Temperature	°C	222	222	222	235	222	220	165
Tensile Strength	Mpa	60	58	56	67	140	80	65
Elongation at Break	%	> 200	> 200	> 200	> 200	< 4	< 20	< 50
Flexural Strength	MPa	57	53	50	54	185	115	88
Flexural Modulus	MPa	1,400	1,250	1,200	1,500	6,150	2,850	2,500
충격 강도	KJ/m ²	8	17	19	19	12	4.5	6

Excellent toughness and impact strength

Toughness



Elongation(Yield)

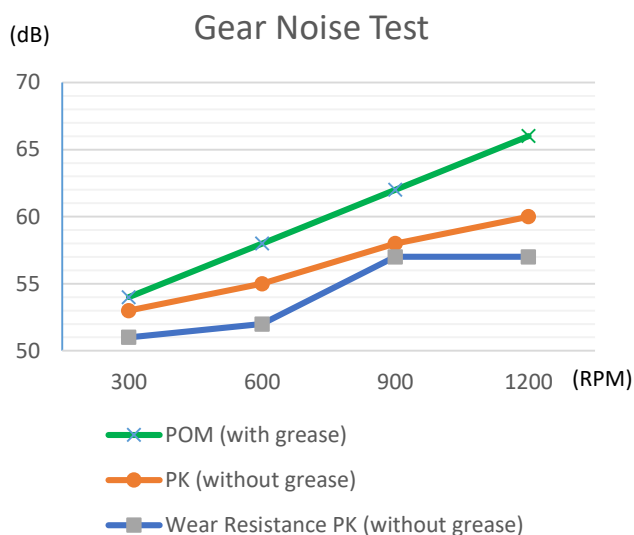


Flexibility



POKETONE™ is excellent tough material, it's elongation at break is over 200% and POKETONE™ M630 is higher than POM around 4 times. So it's impact strength also superior than other commodity engineering plastic. It means that POKETONE™ can be a good alternative option and expand caster line up by using it.

Less noise and vibration



▲ In-house test, simulating gear set in Inkjet Printer

POKETONE™ can absorb vibration and reduce noise, as well as it has almost safety to human health certificate like medical, food, drinking water contact. It's suitable for medical and food contact caster application.

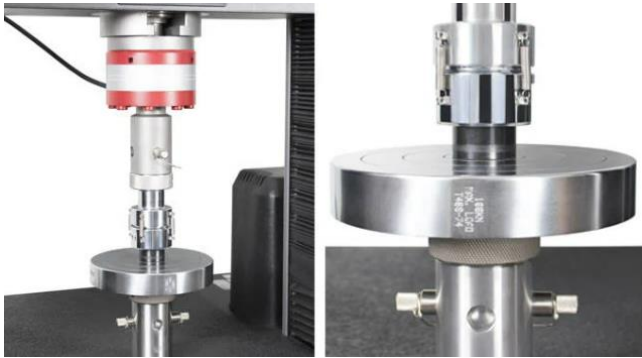
■ Compression resistance against heavy load

Thanks to good balanced properties of POKETONE™, It has good compressive strength like below chart. POKETONE™ caster can resist heavy load in various condition and area.

Sample	Compressive strength
PK M330	83 Mpa
PK M630	112 Mpa
PK M330+GF30%	138 Mpa
PA6	102 Mpa
POM	87 Mpa

▲ Compressive strength data from test result by a third-party

Test Method: ISO 604:2002
 Testing speed: 1mm/min
 Condition: 23±2°C, 50±5%RH



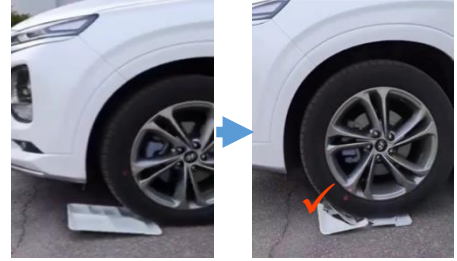
▲ ISO 604 Compressive strength tester
 (Test method is technically equivalent to ASTM D695)



▲ PK Caster 3.2MT load test



[POKETONE molded part of food tray
 No crack or brittle fracture after vehicle load]



[Melamine food tray
 Completely Cracked after vehicle load]

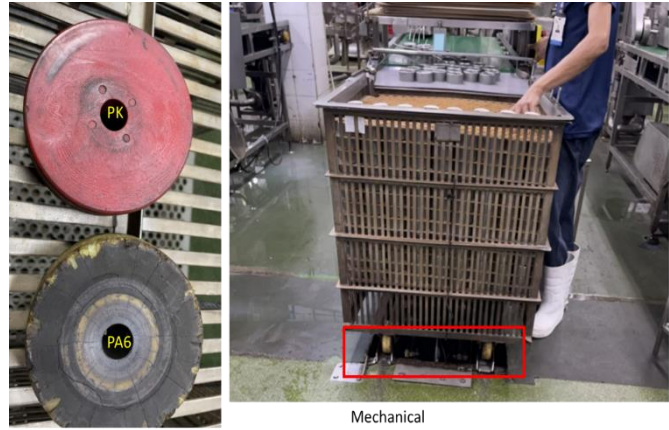
■ Chemical resistance

	PK	PA6	POM
Hydrocarbons			
Aliphatic	○	○	○
Aromatic	○	○	○
Halogenated	○	○	○
Ketones	○	○	○
Esters/Ethers	○	○	○
Aldehydes	○	●	○
Aqueous			
Water	○	●	○
Weak Acids	○	●	●
Weak Bases	○	●	○
Strong Acids	●	●	●
Strong Bases	●	●	○

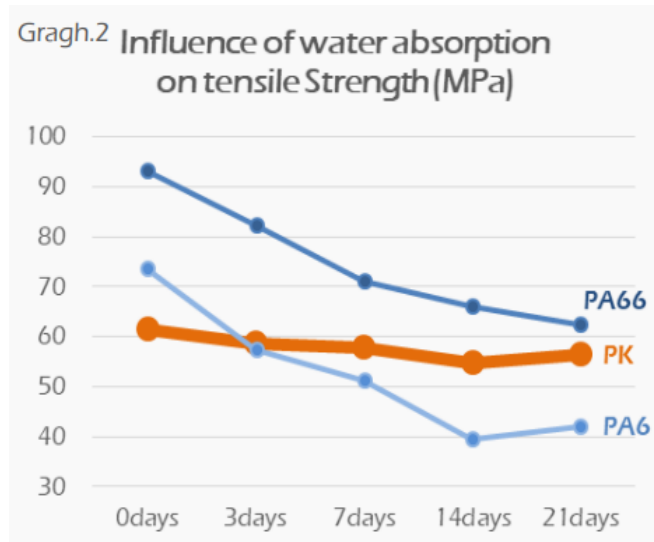
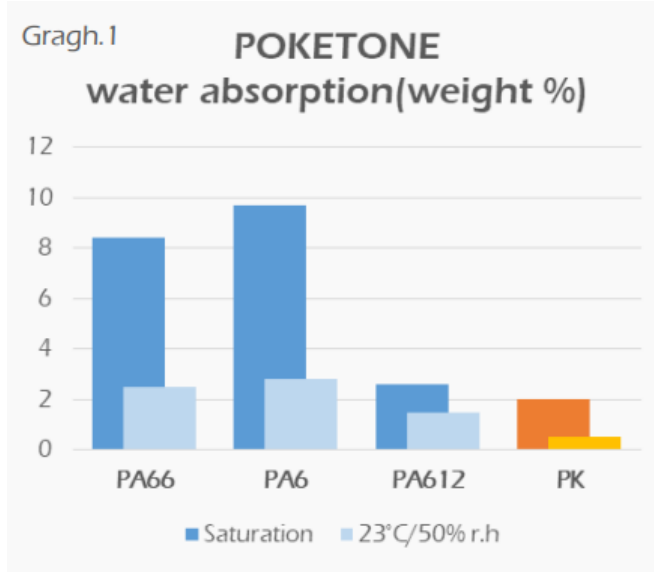
POKETONE™ backbone is composed with only carbon, it means that it has chemically stable structure, so it's possible to use various chemical condition. It's expected that it can expand customer's roller line-up.

Low water absorption & dimension stability

POKETONE™ is less sensitive comparing PA material, it can maintain it's own properties when using POKETONE™ roller in water contact or high humid condition.



Mechanical Contact under heat/humidity



Grade recommendation for roller application

We recommend M330 and M630 for general & small to medium size roller such as in the furniture door roller. If you consider higher impact strength, we recommend M640 and M730(730 is higher in viscosity). If the caster needs high stiffness, we recommend the glass fiber reinforced series, such as M33AG6A & M33FG6A. We also provide UV protected and wear resistance grades.

Application	Grade
General	M330 M630
High stiffness	M33AG6A M33FG6A
High impact	M640 M730
Outdoor (UV)	M630V
Wear resistance	M33AT2E



- Less noise and vibration
- Compression Resistance against Heavy Load
- Excellent chemical resistance

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Further Information
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POKETONETM
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