

POKETONE Caster



CHEMICAL
RESISTANT



MAX. LOAD



FOOD SAFE



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.



POKETONE™ is eco-friendly (LCA, Lifetime Cycle Assessment is lower than PA66, 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 FDA, NSF 51,61, and USP Class VI.

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.

■ Certification



■ Eco-friendly material

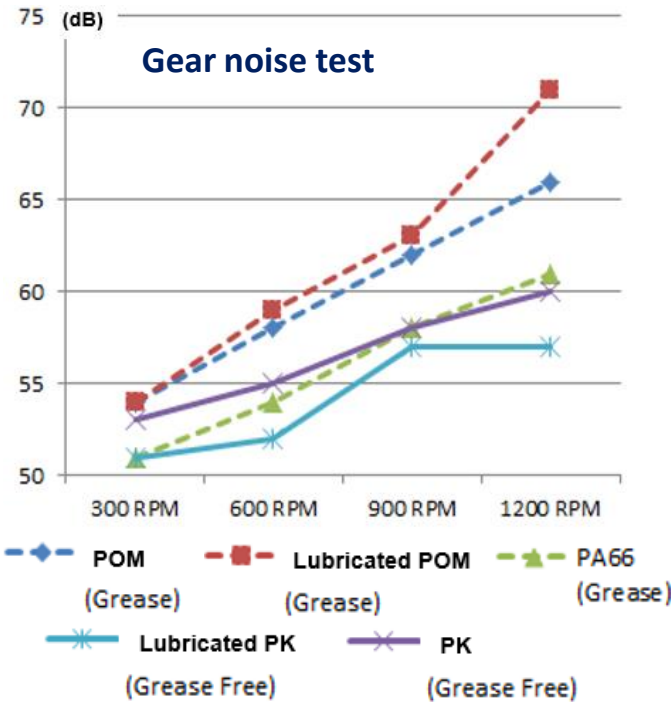
Global Warming Potential

* 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 datatbase.

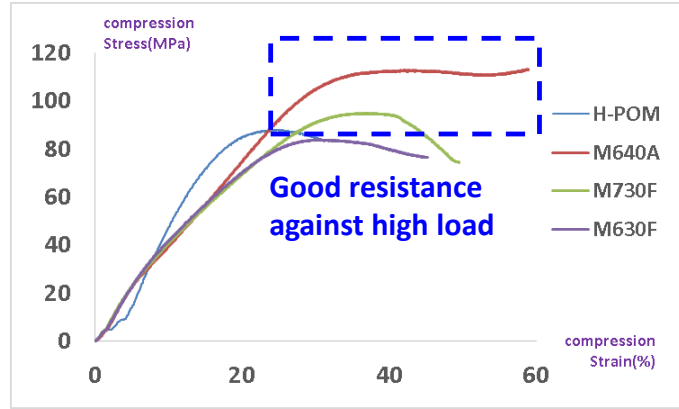
Less noise and vibration



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 compression strength like below charts. POKETONE caster can resist heavy load in various condition and area.



Tress-strain curve for ASTM D695 compression test (H-POM vs. PK M640, 630, 730)

Properties	unit	M630	M640	M730	H-POM
Density	g/cm ³	1.24	1.24	1.24	1.42
Tensile Str.	MPa	58	64	58	72
E. at break	%	>200	>200	>250	31
Flex Str.	MPa	57	58	48	90
Flex Mod.	GPa	1.3	1.5	1.2	2.8
N. Charpy	kJ/m ²	15.0	16.0	19.0	13.9
Comp. Str	MPa	84	114	96	89



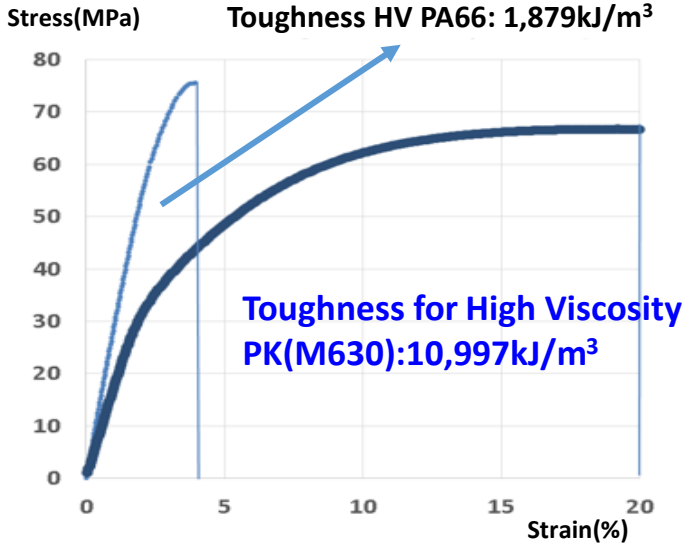
12.5mm
x 12.5mm
x 25.4mm

Compression Tester(ASTM D695)



▲ PK Caster 3.2MT Load test

■ Excellent toughness and impact strength



POKETONE™ is excellent tough material, it's elongation at break is over 200% and toughness of high viscosity POKETONE™ is higher than high viscosity PA66 around 5 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.

Items	Unit	PK M630	HV PA66	HV POM
Density	g/cm ³	1.24	1.14	1.41
Melting Temperature	°C	222	260	160
Notched Charpy	KJ/m ²	17	7	14
Tensile Strength	MPa	60	80	65
Elongation At Break	%	>250	<100	<50
Flexural Modulus	MPa	1,550	2,900	2,500

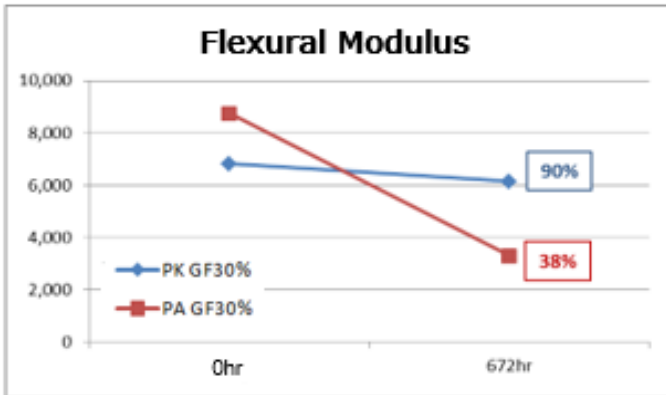
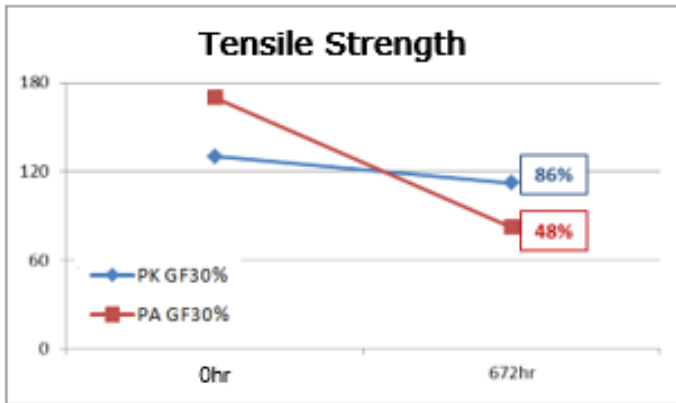
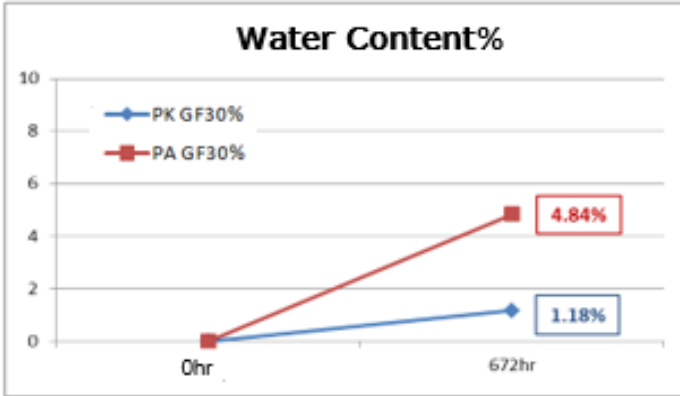
■ Chemical resistance

	PK	PA66	PA12	POM
Hydrocarbons				
Aliphatic	○	○	○	○
Aromatic	○	○	○	○
Halogenated	○	○		○
Ketones	○	○	○	○
Esters/Ethers	○	○	○	○
Aldehydes	○	●	●	○
Aqueous				
Water	○	●	○	○
Weak Acids	○	●	●	●
Weak Bases	○	●	●	○
Strong Acids	●	●	●	●
Strong Bases	●	●	●	○

POKETONE™ back bone 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.



* Properties Retention Rate after immersed in Water (23°C, 672hr)

- Tensile Strength: PK 86% vs PA 48%, Flexural Modulus: PK 90% vs PA 38%

Grade Recommendation for Roller Application

We recommend M330 for low axle & small size roller such as in the furniture door roller.

If you consider higher axle load, we recommend High viscosity PK M630/ M730(730 is higher in viscosity) and M640.

In case of glass fiber filling to get both stiffness and axle load resistance, we recommend M33AG6A & M43AG6A. A special grade M43AG6A is 30% glass filled grade designed for both high stiffness & high impact (N. charpy 16kJ/m²).

We also provide UV protected and lubricated grades.

Application	Grade
Furniture (Low axle load)	M330 M630
Industrial (medium & high axle load)	General M630 M730
	Hi Stiffness M640 M33AG6A
	High Stiffness & Impact M43AG6A M63AG2A
	UV added M630V M63VX0A
	Lubricated M33AT2E M63AS1B

New Wave of innovation in materials

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