

POKETONE™

For Cosmetics

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 Ecoinvent database according to ISO Standard 14040 and 14044

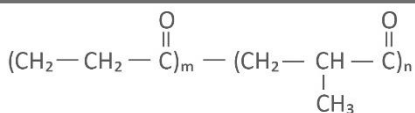
Non Toxic High Efficiency



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



POKETONE™ : New choice for cosmetic industry



A new thermoplastic polymer HYOSUNG POKETONE is a family of semi-crystalline polyketone, made of carbon monoxide(CO) and olefins.

POKETONE Polymers(PK) are a new class of engineering plastics- semi-crystalline aliphatic polyketone. The resulting molecular chains are linear, perfectly alternating carbon monoxide and alpha olefin structures that possess a unique balance of strength, chemical resistance and barrier properties, making POKETONE Polymers well-suited for a broad range of applications. PK has lowest extractable than other competing materials, and satisfy regulations for cosmetic industry. This Formaldehyde-Free polymer support customers to avoid any risk of safety. Thanks to its chemical resistance and balanced properties, PK can be a reliable choice for cosmetic parts.

Chemical Resistance

In addition to good mechanical properties, Engineering Thermo-plastics(ETPs) should have adequate resistance to a variety of chemicals for cosmetics applications.

Moulded POKETONE has a low polarity surface, which coupled with its high crystallinity and close packing in the crystalline phase, indicates potentially good chemical resistance and it has proved to be the case from many studies.

ETPs' chemical resistance in general could be summarized as below table. POKETONE exhibits resistance to a wide variety of reagents. Especially noteworthy is the resistance of POKETONE towards aqueous environments – salts, acids, bases relative to PA66 for example.

Chemicals	PK	PA66	POM	PBT	PPS	PVDF
Hydrocarbons						
Aliphatic	⊙	⊙	⊙	⊙	⊙	⊙
Aromatic	⊙	⊙	⊙	⊙	⊙	⊙
Halogenated	⊙	⊙	⊙		⊙	⊙
Ketones	⊙	⊙	⊙	⊙	⊙	
Esters/Ethers	⊙	⊙	⊙	⊙	⊙	⊙
Aldehydes	⊙	●	⊙	⊙	⊙	⊙
Aqueous						
Water	⊙	●	⊙	●	⊙	⊙
Weak Acids	⊙	●	●	●	⊙	⊙
Weak Bases	⊙	●	⊙	●	⊙	●
Strong Acids	●	●	●	●	●	⊙
Strong Bases	●	●	⊙	●	●	●

⊙: Resistant ●: Not Resistant



Non- toxic

For all the base grades, PK are filed with the FDA and used in the development of food contact and medical devices. They also safe with low to zero volatile organic compounds emission,.(VOCs)

PK are thoroughly studied and tested for toxicity and other risks. PK satisfies relevant regulations such as;



Resilience

PK demonstrates excellent resilience to deformations and resistance to repetitive loads. Leveraging these advantages, it is being sold as a substitute for metals in spring applications as below.

(주)연우

효성의 포케톤(POKETONE) 사용한 매달프리 펌프 출시



Barrier Performance

(Oxygen, Hydrocarbon, etc.)

POKETONE itself has good barrier property because of unique chemical structure with Ketone($-C=O$) radical. POKETONE itself can be used for a container of fuel and oils, because of excellent barrier property and low swell. The producer can upgrade products quality by selecting POKETONE.

Table 1. Poketone O2 Permeability _ Thickness Dependence

✓ Thickness effect

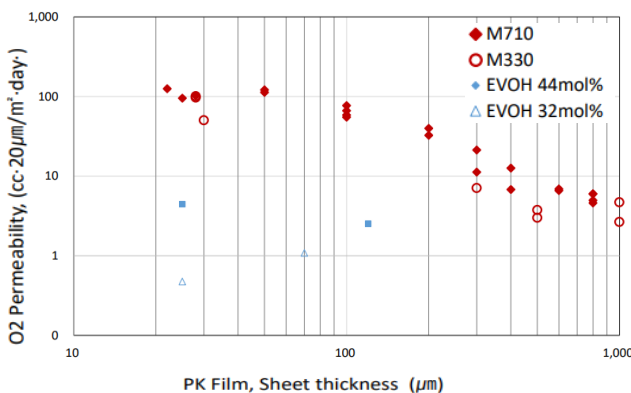


Fig. O2 Permeability (STD 20µm) by thickness of Polyketone

Table 2. O2 barrier property of Poketone

✓ O2 barrier property of Poketone

