POKETONE™
HYOSUNG POLYKETONE

Food&drug extrusion grade

POKETONE Polymer M710F

POKETONE Thermoplastic Polymers are aliphatic polyketones, a revolutionary new class of semi-crystalline thermoplastics. Hyosung developed new catalyst to produce this unique polymer in 2013 and constructed commercial plant in 2015, in Ulsan, Korea.

POKETONE Polymer M710F is extrusion grade with mechanical properties that classify it as an engieering thermoplastic. This grade combines high melt strength and viscosity with high chemical resistance and barrier performance. Moreover, this material exhibits a high impact resistance, both at room temperature and at lower temperatures, and good creep performance. POKETONE Polymer M710F can also withstand short-term exposure to elevated temperatures.

POKETONE Polymer M710F has been designed for demanding extrusion procceses. This grade should be considered for liners, pipes and blown films

Applications for POKETONE Polymer M710F may be found in the food, drug, industrial and consumer appliance markets.

TABLE 1 : TYPICAL MECHANICAL PROPERTIES OF POKETONE POLYMER M710F – Measured at 23℃

	Test Method & Conditions		ASTM Values	ISO Values
	ASTM	ISO	SI	SI
Tensile strength at yield	D638	527-1	43 MPa	43 MPa
Tensile modulus	D638	527-1	950 MPa	900 MPa
Tensile elongation at yield	D638	527-1	19%	19%
Tensile elongation at break	D638	527-1	300%	300%
Flexural strength	D790	178	40 MPa	40 MPa
Flexural modulus	D790	178	900 MPa	850 MPa
Unnotched Charpy impact strength	-	179/1eU	-	N.B.
Notched Charpy impact strength	-	179/1eA	-	14 kJ/m^2
Unnotched Izod impact strength	D256	180/U	N.B.	N.B.
Notched Izod impact strength	D256	180/A	120 J/m	9 kJ/m^2

TABLE 2: TYPICAL PHYSICAL PROPERTIES OF POKETONE POLYMER M710F – Measured at 23℃

	Test Method & Conditions		ASTM Values	ISO Values
	ASTM	ISO	SI	SI
Specific gravity	D792	1183	1.22 g/cm^3	1.22 g/cm^3
Shore D hardness	D2240	868	-	75
Hardness Rockwell	D785	-	105	-
Water absorption equilibrium at 50% RH	D570	62	0.5%	0.5%
Water absorption at saturation	D570	62	2.2%	2.2%

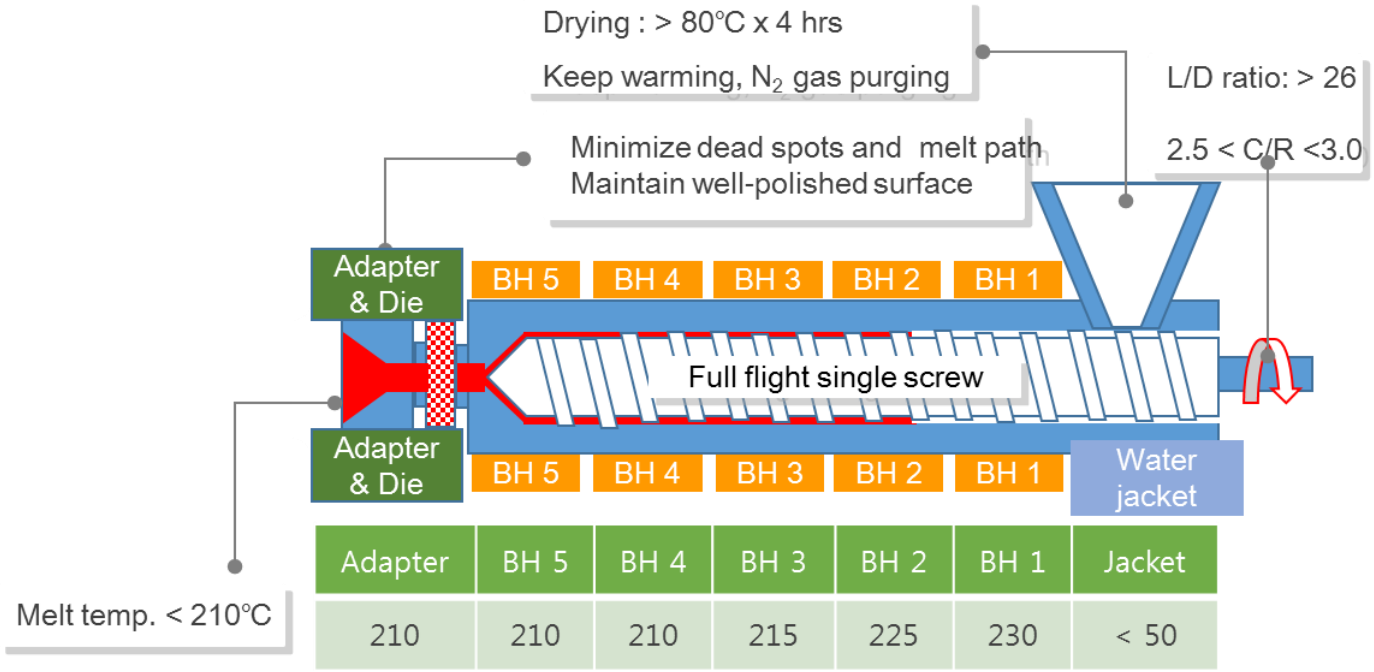
TABLE 3: TYPICAL THERMAL PROPERTIES OF POKETONE POLYMER M710F

	Test Method & Conditions		ASTM Values	ISO Values
	ASTM	ISO	SI	SI
Melting temperature	D3418	11357	197℃	197℃
Conefficient of linear thermal Expansion, 25℃ to 55℃	E831 TD MD	-	 $1.0*10^{-4}$ $1.0*10^{-4}$	-
Vicat softening point	D1525 5kg	306/B50 50N	155℃	152℃
Heat deflection temperature	D648 66psi 264psi	75 0.45 MPa 1.8 MPa	155℃ 75℃	140℃ 65℃

TABLE 4: TYPICAL PROCESS RELATED PROPERTIES OF POKETONE POLYMER M710F				
	Test Method & Conditions		ASTM Values	ISO Values
	ASTM	ISO	SI	SI
Melting temperature	D3418	11357	197℃	197℃
Melt flow rate 220℃ /2.16kg	D1238	1133	3 g/10 min	2.8㎖/10min
Mould shrinkage	D955 MD, 3mm TD, 3mm	-	 1.7% 1.7%	-

TABLE 5: TYPICAL ELECTRICAL PROPERTIES OF POKETONE POLYMER M710F		
	Test Method & Conditions	ASTM Values
	ASTM	SI
Dielectric sterngth, Short term	D149 3 mm 2 mm	 15 kV/mm 19 kV/mm
Volume resistivity	D257	10^{14} ohm cm
Surface resistivity	D257	10^{17} ohm/sq.
Dielectric constant at 60Hz	D150	6.4
Dissipation factor at 60Hz	D150	0.014

POKETONE Extrusion Processing Guide



Adapter	BH 5	BH 4	BH 3	BH 2	BH 1	Jacket
210	210	210	215	225	230	< 50

Setting Temperature

- Recommended melting temperature: 210-230℃ (410-446℉).
- Do not exceed 265℃ (509℉). Long residence times at high end of the temperature range can cause thermal degradation & loss of physical properties.
- Keep lower melt temperature in order to enhance the melt quality (<210℃).

Start-up and Cleaning Guide

- Start-up with purge polymers (LDPE, PP, HDPE, PETG) first and gradually change to POKETONE.
- If you shut down the machine for more than 0.5 hour, please purge out POKETONE using purge polymers.
- Please immediately clean barrels thoroughly after producing POKETONE products. Other commercial purging compounds are also available.

Drying

- Recommend drying POKETONE pellet at 80℃ for about 3~4 hours. POKETONE should be dried by an oven or hopper drier to prevent surface problem like silver streak, drooling or voids.
- If the drying temperature is too high or the drying time is too long, it would be able to bring about discoloration of pellets.

If you need any further technical information, please contact our sales or marketing team who will be happy to assist you with any questions you may have. Feel free to visit our website. www.poly-ketone.com