



## PiraForm®-R A9-K B(POM Black Recycle without GF)

### High-flow injection moulding grade

**PiraForm®-R A9-K B(POM Black Recycle without GF)** is a high-flow injection moulding grade with mechanical properties which classify it as an engineering thermoplastic.

This grade exhibits very good processability, good impact resistance, high resilience and good creep performance.

**PiraForm®-R A9-K B(POM Black Recycle without GF)** can also withstand short-term exposure to elevated temperatures.

Moreover This polymer exhibits high resistance to hydrocarbons, solvents, salt solutions, weak acids and weak bases.

**PiraForm®-R A9-K B(POM Black Recycle without GF)** is a high-flow, low-viscosity polymer that should be considered for mouldings with long flow paths or thin walls. This grade is very easy to process on standard injection moulding equipment.

Cycle times are generally short. Parts show good mould definition with glossy mar-resistant surfaces. PiraForm's low moisture sensitivity means that no conditioning of parts before assembly or use is necessary.

Applications for **PiraForm®-R A9-K B(POM Black Recycle without GF)** maybe found in the automotive, electrical, electronics, industrial and consumer appliance markets.

TABLE 1 : TYPICAL MECHANICAL PROPERTIES OF PiraForm®-R A9-K B(POM Black Recycle without GF) – Measured at 23°C				
	Test Method & Conditions		ASTM Values	ISO Values
	ASTM	ISO	SI	SI
Tensile strength at yield	D638	527-1	60 Mpa	<b>60 Mpa</b>
Tensile modulus	D638	527-1	1,600 Mpa	<b>1,500 Mpa</b>
Tensile elongation at yield	D638	527-1	21%	<b>21%</b>
Tensile elongation at break	D638	527-1	300%	<b>300%</b>
Flexural strength	D790	178	57 MPa	<b>57 MPa</b>
Flexural modulus	D790	178	1,500 Mpa	<b>1,400 Mpa</b>
Unnotched Charpy impact strength	-	179/1eU	-	<b>N.B.</b>
Notched Charpy impact strength 23°C -10°C -30°C	-	179/1eA	-	<b>8 kJ/m<sup>2</sup> 4 kJ/m<sup>2</sup> 2 kJ/m<sup>2</sup></b>
Unnotched Izod impact strength	D256	180/U	N.B.	<b>N.B.</b>
Notched Izod impact strength 23°C -10°C -30°C	D256	180/A	95 J/m 60 J/m 40 J/m	<b>7 kJ/m<sup>2</sup> 4 kJ/m<sup>2</sup> 3 kJ/m<sup>2</sup></b>
Falling dart impact strength at 23°C	-	6603-2	-	<b>50 J</b>

TABLE 2: TYPICAL PHYSICAL PROPERTIES OF PiraForm®-R A9-K B(POM Black Recycle without GF) – Measured at 23°C				
	Test Method & Conditions		ASTM Values	ISO Values
	ASTM	ISO	SI	SI
Specific gravity	D792	1183	1.24g/cm <sup>3</sup>	1.24g/cm <sup>3</sup>
Shore D hardness	D2240	868	-	77
Hardness Rockwell	D785	-	110	-
Water absorption equilibrium at 50% RH	D570	62	0.5%	0.5%
Water absorption at saturation	D570	62	2.1%	2.1%

TABLE 3: TYPICAL PHYSICAL PROPERTIES OF PiraForm®-R A9-K B(POM Black Recycle without GF) – Measured at 23°C				
	Test Method & Conditions		ASTM Values	ISO Values
	ASTM	ISO	SI	SI
Melting temperature	D3418	11357	222°C	222°C
Coefficient of linear thermal Expansion, 25°C to 55°C	E831	-	9.7*10 <sup>-5</sup>	-
Vicat softening point	D1525 5 kg	306/B50 50 N	195°C	190°C
Heat deflection temperature	D648 66psi 264psi	75 0.45 MPA 1.8 MPA	200°C 105°C	190°C 92°C

\*Note: The material is made by Bada AG in Germany and **only used once** in injection mould machine.

Thank you for your Attention!

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**TABLE 4: TYPICAL PROCESS RELATED PROPERTIES OF PiraForm®-R A9-K B(POM Black Recycle without GF)**

	Test Method & Conditions		ASTM Values	ISO Values
	ASTM	ISO	SI	SI
Melt flow index 240°C /2.16kg	D1238	1133	60 g/10 min	56ml/ 10min
Mould shrinkage	D955 MD, 3 mm TD, 3 mm MD, 2 mm TD, 2 mm	-	2.0% 2.0% 1.6% 1.5%	-

**TABLE 6: TYPICAL FLAMMABILITY PROPERTIES OF PiraForm®-R A9-K B(POM Black Recycle without GF)**

	Test Method & Conditions	Values
Flame resistance	UL94	HB (0.8mm)
Glow wire flammability index	IEC 60695-2-12	700°C (0.8mm)
Glow wire ignition temperature	EC 60695-2-12	725°C (0.8mm)

**TABLE 5: TYPICAL ELECTRICAL PROPERTIES OF PiraForm®-R A9-K B(POM Black Recycle without GF)**

	Test Method & Conditions		ASTM Values	ISO Values
	ASTM	ISO	SI	SI
Dielectric strength, Short term	D149 3 mm 2 mm	-	15 kV/mm 19 kV/mm	-
Volume resistivity	D257	-	10 <sup>14</sup> ohm cm	-
Surface resistivity	D257	-	10 <sup>17</sup> ohm/sq	-
Arc resistance	D495	-	130 sec	-
CTI	UL 746A	112	-	600V
Dielectric constant at 60Hz	D150	250	6.2	5
Dissipation factor at 60Hz	D150	251	0.008	0.013

**TABLE 7: UL-746A SHORT TERM PERFORMANCE CATEGORIES FOR PiraForm®-R A9-K B(POM Black Recycle without GF)**

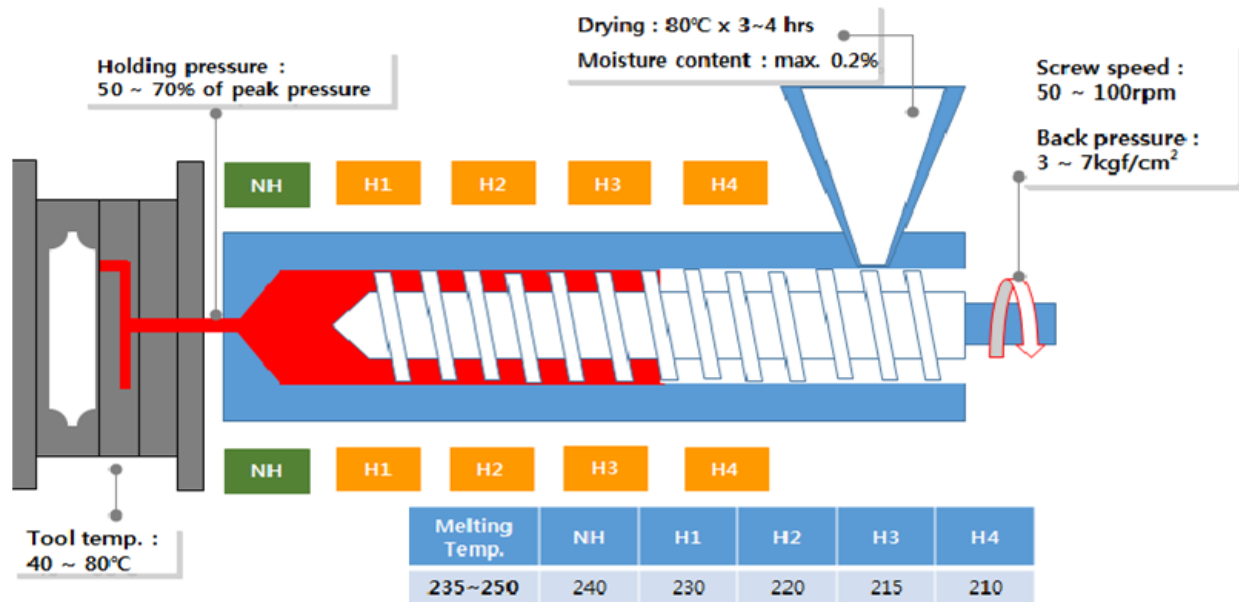
	Minimum Thickness (mm)		
	0.8	1.5	3.0
HWI	4	3	2
HAI	0	0	0
HVTR	0	-	-
D495	4	-	-
CTI	0	-	-

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### Setting Temperature

- **Recommended melting temperature:** 235-250°C (460-490°F)
- Do not exceed 265°C (509°F). Long residence times at high end of the temperature range can cause thermal degradation & loss of physical properties.
- **Mold Temperature:** regarding PiraForm base grade, recommended setting temperature is at 60-80°C. In case of PiraForm glass-fiber reinforced grades, the temperature should be higher at least over 120°C for better surface quality.

### Cleaning Guide

- Please immediately clean barrels thoroughly after producing PiraForm products. Recommend high viscosity HDPE, PCTG and PP. Other commercial purging compounds are also available.

### Drying

- Recommend drying PiraForm pellet at 80°C for about 3~4 hours. PiraForm 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

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