



## PRODUCT DATA SHEET – INJECTION MOULDING

### MATRIX F1 – G (Performance Additive)

MATRIX F1 – G helps improve productivity and profitability by reducing the cycle time and producing more in the same timeframe from the same machine.

#### Description:

MATRIX F1 – G is a performance additive compounded specially into a pellet form using a polyolefin universal carrier resin.

MATRIX F1 – G has been successfully used by moulders with a very low loading of 1% to 2% let down ratio for end products of the following types:

- Using Filled or Unfilled resins like PP, PE, PA & PBT
- Products with high cooling times in moulding cycle.
- Products with high wall thickness
- Multi-cavity moulds
- Customers facing capacity constraints during normal or peak times of seasonal & urgent demand.

#### Typical Applications Areas:

MATRIX F1 – G is currently being used for:

- Housewares & Furniture (including for exports under globally known brands)
- Bathroom Fittings & Cistern
- Crates & Tote Boxes
- Paint Pails
- Caps & Closures
- Pen Barrel & Caps
- Drip Irrigation Components
- Automotive Components (For two wheelers & cars, including all Plastics Parts, E/E components & Battery Casing)

#### Features, Advantages & Benefits (FAB) of MATRIX F1 – G as Experienced by Customers:

Features (F)	Advantages (A)	Benefits (B)
<ul style="list-style-type: none"> <li>• Cycle Time Reduction of ~ 10% to 30%</li> <li>• Lowered Processing Temperature</li> <li>• Improves colour dispersion and gloss</li> <li>• Reduces or Eliminate Warpage in Flat Parts</li> <li>• Reduces Material Sticking to Metal</li> </ul>	<ul style="list-style-type: none"> <li>• Increased output of parts</li> <li>• Lowers energy consumption per part</li> <li>• Improves product looks and surface appearance</li> <li>• Lower part rejections</li> <li>• Supports faster mould opening &amp; ejection</li> <li>• Longer times between die maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Creates addition capacity with the same machine &amp; Increases profits without Capital Expenditure</li> <li>• Reduces energy cost by up to 10% per part</li> <li>• Better Customer Acceptance and Appeal</li> <li>• Increased production efficiency &amp; lowers production cost</li> <li>• Increased production efficiency &amp; lowers production cost</li> </ul>

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## TECHNICAL DATA SHEET – INJECTION MOULDING

### MATRIX F1 – G (Performance Additive)

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### General Product Properties:

Sr. No.	Name of Test	Test Method	Specified Value
1	Visual Appearance	Visual	Uniform Pellets
2	Specific Gravity	ASTM D792	1.185 ±10%
3	Moisture Content	ASTM D690D	< 0.20
4	Ash Content	ASTM D5630	40% ±2%
5	Pellet Dimension	-----	3mm * 2.5mm

### Processing Guidelines:

Sr. No.	Parameters	Expected Change	Remarks
1	Temperature Profile	Reduce up to 5% or 10 °C (Whichever is lower)	Sheer viscosity reduction reduces the energy & motor torque requirements while processing.
2	Refill Time	Overall reduction up to 15%	The material shall go through a natural shear viscosity drop.
		Reduce Back Pressure to 30% or more if required	Due to lowered shear viscosity less Back Pressure is needed to build the shot weight. Make sure to optimise the setting for melt homogeneity
		Can increase screw RPM, if required	Make sure to optimize and ensure melt homogeneity.
3	Injection Time	Reduce up to 15%	Melt flow rate is enhanced thus you can fill the mould easier
4	Pack and Hold	Reduce or Eliminate	The Pack and Hold function is generally helpful only till the gates are frozen
5	Cooling Time	Reduction of up to 60%	Works as a heat sink and thus reduces the amount of cooling required. In addition parts can be ejected hotter & even then the warpage is reduced or eliminated.

#### Overall Result\*:

Up to 30% Reduction in Cycle Time plus up to 10% Reduction in Energy Used Per Part Produced.

\*Results may vary with Material. Part Design, Mould Quality and Processing Equipment Design & Capabilities.

#### Packing:

Product Packing shall be in 25 KGS Plastic Woven Sack laminated with Printed BOPP Film (100% Recyclable) and shall have sufficient strength to withstand handling & transportation.

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