

MATRIX SX-514

Beta-Nucleating Additive



Overview:

MATRIX SX-514 is a powerful **Beta-Nucleating Additive** developed under technical collaboration with our China operations to transform standard **PP homopolymer** into a material with superior overall performance.

Key Features & Benefits

- **Outstanding Toughness** : Achieve enhanced impact strength & elongation at break without sacrificing homopolymer stiffness.
- **Improved Dimensional Stability**: More uniform crystallization means less warpage, better part consistency, and fewer rejects.
- **Faster Processing** : Accelerated crystallization reduces cycle times in injection molding and thermoforming.
- **Easy to Use**: Supplied as pellets; simply blend with your PP resin at recommended dosages (see guidelines below).
- **Lower Material Costs** : Save money by upgrading standard PP instead of buying expensive copolymers.

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Details	Value	Unit	Test Method
Form	Pellets	-	Visual
Colour	White	-	Visual
Melt Flow Index (190°C, 2.16 kg)	18	gm/10min	ASTM D1238
Density	0.91	gm/cc	ASTM D792
Melting Point	160	°C	-

Packing: 25 Kg bags • Suggested dosage of 0.3% to 1.2%.

Compliance: (Reports available upon request)

Tested to be compliant with US FDA, RoHS 10E and REACH



Performance & Suggested Usage:

Below are a few examples of top application areas where MATRIX SX-514 delivers clear advantages:

- 1. Compounders** : Neat PP homopolymer compounds
 - **Benefit:** Create impact-enhanced grades while preserving stiffness and heat resistance.
- 2. Masterbatch Producers (Color & Additives)** : Color masterbatches, multi-functional additive blends
 - **Benefit:** Offer a single-step solution to customers;
 - Color & Additives Masterbatch with high impact and enhanced properties in one formulation.
 - Calcium Carbonate Filler Masterbatch to enhance its properties.
- 3. Processors (Injection Molders, Thermoforming, Film & Extrusion, Blow Molding)** : Caps & Closures, Writing Instruments, Stationary, Toys, Consumer Goods, Packaging Trays, BOPP, Raffia.
 - **Benefit:** Enhanced impact performance for everyday applications.

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General Use Guidelines:

To ensure **first-time-right** results and maximize performance, please follow these **simple recommendations**:

1. Dosage

- **Typical Addition:** 0.3 - 1.2% SX-514 by weight of formulation.
- **Adjust** within this range for desired impact vs. cost trade-off. Start high and adjust downwards.

2. Compatibility

- **Best with PP Homopolymer** or **non-alpha-nucleating fillers** (avoid talc loadings or known alpha-nucleators). Compatible with Calcium Carbonate filler.
- **Avoid** blending high ethylene copolymers or Polyolefin Elastomer (POE).
- **Standard color pigments** such as White (TiO₂) color are generally compatible.
- **Check with us** if using unusual additives.

3. Processing

- **Melt Temperature:** 200–230 °C for most PP systems. Avoid prolonged residence times above 250 °C.
- **Mold Temperature:** Standard conditions are fine; moderate mold temps (40 - 50 °C) may further optimize beta-phase formation for higher impact properties.

4. Storage & Handling

- Store in a cool, dry place; no special pre-drying needed under normal conditions.
- Mix thoroughly with base PP for uniform dispersion.

5. Do's and Don'ts

- **Do:** Test in small batches first to confirm your target properties.
- **Do:** Use recommended processing conditions for optimal crystallization.
- **Don't:** Combine with strong alpha-nucleators or highly acidic / basic additives—they may neutralize the beta-nucleator. Check if not sure.
- **Don't:** Overheat or dwell too long in the extruder. Excessive thermal history can degrade additive performance.
- **Don't:** Use for multifilament or monofilament yarn application.



- ★ **Headquarters :** Singapore
- **Subsidiaries & Branch Offices :** India, Canada
- **Product Research & Development Center :** Singapore
- **Production Facilities (JV & Contract) :** Singapore, Malaysia, China, India
- **Sales & Distribution :** Singapore, Malaysia, China, India, Vietnam, Dubai, Turkey, South Africa

PLEASE NOTE: As each customer's use of our product may be different, information we provide, including without limitation, recommendations, test results, samples, care/labeling/processing instructions or marketing advice, is provided in good faith but without warranty and without accepting any responsibility/liability. Each customer must test, be responsible for its own specific use, further processing, labeling, marketing, etc.

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