



MAGIQ™

**FIBER COLORANT &
ADDITIVE TECHNOLOGY**

INTRODUCING MAGIQ FIBER COLORANT AND ADDITIVE TECHNOLOGY FOR THE MASS DYEING AND FUNCTIONAL MODIFICATION OF SYNTHETIC FIBERS, OF WHICH AVIENT IS A LEADING MANUFACTURER.

Our specialty fiber solutions are commercialized under our MagiQ™ brand of fiber colorants and additives, which incorporate Magenta Master Fibers, IQAP, OnColor™, OnCap™ and ColorMatrix™ Fiber Colorant Solutions.

Color is everywhere. From the clothes we wear to the upholstery in the cars we drive, color plays a major role in driving consumer appeal. However, the way we add color to our products can have a big impact on our business success, and the textile industry is also under pressure to become more agile and also more sustainable.

With global manufacturing facilities, Avient is positioned to supply the textile industry with the highest quality fiber colorant and additive solutions. Our wide range of MagiQ products can be delivered as a solid masterbatch or liquid concentrate.

	MAGIQ COLORANTS	MAGIQ ADDITIVES
PET	Solid/Liquid	Solid/Liquid
PA	Solid	Solid
PP	Solid	Solid

TYPICAL APPLICATIONS

- **Clothing:** apparel, hosiery, pile, sportswear, socks, stockings, shoes
- **Home:** upholstery, carpet, furniture, curtains
- **Outdoor:** awnings, umbrellas, automobile/boat covers
- **Automotive:** seat covering, floor systems, carpeting, headliners, side panels, tyre records
- **Technical:** ropes, belts, luggage, monofilament fishing yarn
- **Non-woven:** geo-textiles, padding, flooring, diapers





MAGIQ FIBER COLORANTS - MASTERBATCH

Commercialized under our global brand MagiQ Fiber Colorants & Additives, which includes Magenta Master Fibers, IQAP, OnColor and OnCap, our Masterbatch fiber colorants include black, white, single pigment dispersion and custom colors, as well as additives and special products. The product portfolio covers an extensive selection of quality Masterbatches, either in PET, PBT, or PA, specially formulated to meet various demands.

EXCELLENT QUALITY/CONSISTENCY

- Long and stable spinning time
- Easy production management
- Reduced spinning filter part replacement
- Higher production output
- Lower production cost vs. conventional dyeing

EXCELLENT COLOR CONSISTENCY OF YARNS

- Controlled limits of color deviation
- Greater customer satisfaction
- Strictly selected and controlled raw materials

EXCELLENT COLOR FASTNESS (LIGHT, WASHING, DRY HEAT, ETC.)

- Attractive appearance to final product
- Long lasting color

ENVIRONMENTAL ADVANTAGES

- Environmental advantages
- Less production costs
- Lower carbon footprint
- Lower chemical usage
- Waste reduction



MAGIQ FIBER COLORANTS - MASTERBATCH PORTFOLIO

BLACK

- Standard and special products with high pigment concentrations and excellent tinting strength
- MBs at lower concentrations designed to meet specific customer needs
- Black MB tailored for special requirements, with particular physical/rheological properties

Product characteristics

- Optimal melt flow properties allow a good mixture with the polymer matrix yielding the best possible spinnability.
- Full pigment dispersion ensures maximum CPF/ Spinning pack life.
- Carriers: PET, PBT, PA 6, PA 66, others

Applications

- Continuous filament spinning, including fine denier (POY, FDY, HOY, bi-component yarns)
- Long and short spinning staple fiber
- Spunbond

WHITE

- TiO₂ white with excellent opacifying or tinting strength
- Optical white MBs that improve the surface whiteness and/or brightness of end products

Product characteristics

- Optimal melt flow properties allow a good mixture with the polymer matrix yielding the best possible spinnability
- Full pigment dispersion ensures maximum CPF/ Spinning pack life.
- Carrier: PET, PBT, PA 6

Applications

- Continuous filament, including fine deniers (POY, FDY, HOY)
- Long and short spinning staple fiber
- Spunbond





SINGLE PIGMENT DISPERSIONS (SPDS)

We have extensive experience in using advanced technologies and special raw materials, which make these products suitable for sensitive applications.

Product range

- A comprehensive selection of colors and color indices
- SPDs are produced at various concentrations to meet customer requirements

Product characteristics

- Good spinnability
- Full dispersion
- Excellent tinting strength
- Maximum fastness properties
- Lot-to-lot consistency
- Carriers: PET, PBT, PA 6, PP

Applications

- Continuous filaments (POY, FDY, HOY, BCF)
- Long and short spinning staple fiber

CUSTOM COLORS

Our pilot spinning plants are capable of producing a full range of yarn counts, to match custom colors and offer bespoke color options. All information relevant to the first batch of colorant is archived and stored for the life of the color. Every subsequent lot is internally tested in comparison with the standard and is accompanied by a Quality Control Report. Masterbatches at lower concentrations designed to meet specific customer needs.

Product characteristics

- Good spinnability
- Full dispersion
- Excellent tinting strength
- Maximum fastness properties
- Lot-to-lot consistency
- Carriers: PET, PBT, PA 6, PP

Applications

- Continuous filaments (POY, FDY, HOY, BCF)
- Long and short spinning staple fiber



Special Products

Our portfolio includes color formulations for high-tenacity yarn applications.

MAGIQ FIBER COLORANTS - LIQUID

Part of our MagiQ Fiber Colorants & Additives brand, and manufactured under ColorMatrix™ Fiber Colorant Solutions, this breakthrough technology combines advanced liquid color formulations with state-of-the-art, high-pressure metering equipment to enable late-stage injection of liquid color for spun-dyed polyester melt.

It works by injecting liquid color at high pressure into the polyester melt-flow between the end of the extruder, or melt-pipe, and the spin head. The extruder is never contaminated with color which translates into faster, more efficient color changeovers that make low volume and custom color production a reality.

ColorMatrix Fiber Colorant Solutions can help achieve the color precision and color fastness of conventional spun-dyed masterbatch, while giving the production flexibility of traditional aqueous dyeing.

A broad spectrum palette of liquid colorants (40%–80% pigment or dye loading) is available for custom colors and a variety of pigment and dye preparations, including additives and color and additive blends, available on request.



LIQUID FIBER PRODUCT FEATURES

Multiple color production

- Depending on the manufacturing set-up, several injection points can be added to enable multiple color production at the same time on a single extruder

Batch size flexibility

- Fiber producers can manufacture anything from a few kilograms to hundreds of tons using the same simple process

Rapid color changes

- No extruder contamination and easy color-on, color-off operation increases color change speed

Waste reduction

- Rapid color changes, precise metering and the ability to adjust color in-line reduces waste during color changeovers

Continuous metering & long spin pack life

- High pigment and dye concentrations mean fewer pack changes are required

- Where color is running low for larger volume runs, low level metering sensors alert operators and packs can be changed without disrupting production

In-line IV adjustment

- Specialist additives are available to adjust Intrinsic Viscosity (IV) in-line for rPET applications
- These additives are available as single products, or can be combined with color to create a multi-functional formulation

Color design service

- ColorMatrix offers a dedicated color design service to help shorten product development cycles and enhance market agility

Liquid color processing

- Formulations are stable at temperatures up to 60°C and retain good flow properties at temperatures as low as 10°C
- These formulations can help lower yarn friction and abrasion, and there is no fuming or evaporation during production



COLORMATRIX FLEXCART LIQUID DOSING SYSTEMS

Designed to optimize the benefits of liquid colorant and additive technologies, each ColorMatrix™ FlexCart™ model is highly flexible, and offers high-level dosing accuracy and controllability for all injection molding and extrusion applications. Simply choose the system that is best suited to your process and throughput; the state-of-the-art controller units on each model feature simple and intuitive operation panels—so you can begin working with your FlexCart system right away.



With a FlexCart system, it is possible to achieve continuous, consistent and accurate dosing—even at very low addition rates. The reliable low liquid level detection system alerts operators when product is running low; adding additional product does not require stopping the machine, so continuous production is possible without any loss of part color.

FIBER SOLUTION SERVICES

LABORATORY PERFORMANCE BASED ON STATE-OF-THE-ART TECHNOLOGY

To ensure the highest quality products, our customers rely on high-performance raw materials which guarantee that the final products meet the required specifications for heat resistance, household washing, weathering and lightfastness.

Our technical laboratories and production processes are completely integrated and equipped with state of the art technology focused on minimizing waste products. All installations are computerized and are constantly monitored. Our laboratories are equipped with quality instrumentation to test all necessary parameters to ensure the highest quality product suitable for the application and to fulfill customer requirements.

COMMITMENT TO RECORD RETENTION

Formulations and yarn samples of every lot of production are archived and retained for 2 to 5 years to ensure traceability. Our library contains thousands of bobbins from all ranges of the color spectrum.

TECHNICAL ANALYSES

- DSC: Thermal analyses to characterize polymers, additives and colorants
- TGA: Thermogravimetric analysis to evaluate thermal stability, plus inorganic pigment, and carbon black content in the Masterbatch
- FT-IR: Infrared spectroscopy for the analysis of raw materials
- Incineration oven to determine inorganic content
- Melt Flow Tester to measure the Melt Flow Rate of MBs and Polymers
- Filter test to measure the dispersion quality and aggregate content of materials contained in the polymer matrix
- Intrinsic/Relative Viscosity of Masterbatches and polymers
- Moisture content in the liquid colorants, MBs and polymers
- UV-Visible spectrometry: instrumental evaluation of the color on yarn to perform quality control, color matchings and recipes adjustments
- Yarn testing to evaluate mechanical properties, abrasion, dry heat, rubbing and other characteristics
- Our pilot spinning lines have state-of-the-art take-up winders that spin up to 4,500 meters/minute. This allows replication of customers' industrial plant conditions

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