



## ColorMatrix™ Lactra™ SX Light Blocking Additive

### High-performance, visible light blocking technology for extended shelf life, UHT dairy PET packaging

#### PRODUCT DESCRIPTION

ColorMatrix™ Lactra™ SX Light Blocking Additive is a solid masterbatch additive that, when added to PET to make monolayer bottles, provides high-performance light blocking technology and protection for liquid dairy contents. This additive helps PET packaging to protect longer shelf life products, especially ultra-high temperature (UHT) liquid dairy products, from visible-light induced oxidation due to ambient storage conditions.

#### VALUE SOLUTION

**Traditionally light blocking was achieved with use of multilayer HDPE and PET packaging. Lactra SX enables light blocking in single PET layer bottles, and offers the added advantage of design freedom.**

The long shelf life of UHT dairy products makes them more susceptible to light induced oxidation, so they require special consideration for packaging to ensure long shelf life.

Light induced oxidation causes degradation reactions in dairy products and a decrease in nutritional quality. Vitamins A, B2 (riboflavin), D and amino acids become lost, lipids (milk fats)

oxidize, and off-flavors can develop due to the resulting decomposition products.

Traditionally, UHT liquid dairy products have been packaged in laminated paperboard cartons, pouches, or multilayer high density polyethylene (HDPE) and polyethylene terephthalate (PET) bottles. Some of these packaging options have several disadvantages due to their shape and material which do not make them user friendly, such as handling, storage, opening, pouring and resealing. Both paperboard and multilayer polymers restrict design freedom, so that the packaging is often less than ergonomic.

To increase the user friendly aspects of UHT dairy packaging, ColorMatrix™ Lactra™ SX Light Blocking Additive expands design freedom by allowing designers to use a single PET layer bottle to create the same visible light blocking as paperboard and multilayer HDPE and PET packaging. As a result, light induced oxidation is minimized and properties and taste are preserved, even at the lengthy ambient shelf life common with UHT liquid dairy products.

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Superior to capital-intensive multilayer preforms, the light blocking additive can easily be added to PET using a single-stage process for monolayer bottles, resulting in lower machinery costs and no loss in light blocking performance. The simplicity of the monolayer injection process can also lead to reduced production cost and has the potential to offer lighter-weight bottles due to fewer restrictions in bottle wall thickness for single layer constructions.

### KEY CHARACTERISTICS

- Design for shelf life, ergonomics and differentiation
- Lighter weight bottles
- Lower system cost vs. other rigid packaging

### TARGET MARKET AND APPLICATIONS

UHT Dairy Packaging

### TECHNOLOGY BENEFITS

- 100% visible light blocking for monolayer containers
- Recyclable with general PET waste stream, even though additive is also present
- Lower system cost
- Offers shape differentiation for containers
- Enables container designs that increase ease of pouring
- Useful for re-sealable containers
- Useful for containers that can be stored flat after opening
- Offers light-weighting for PET bottle without reducing light blocking performance

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