Joule advanced reheat agents and Optica toners for improved PET polymer processing, aesthetics and recyclability
Joule Technologies

Advanced Reheat Technologies for Energy Efficient PET Polymer Processing and Improved Visual Clarity through Multi-Trip Recycling

Technology Description
Fully polymer compatible reheat agent which reduces b* yellowing by up to five times compared to alternative technologies. This capability is maintained through long-term recycling.

Applications
Joule technologies have been engineered for PET resin grades used in beverage and food container production. It is added during the PET resin manufacturing process.

Usage Rates
Typically 4–6ppm, but can be as high as 10ppm dependent upon color and reheat requirement. Lower levels can be used for mineral water bottles where color considerations tend to dominate over energy savings.

Handling
Joule is supplied as a liquid dispersion.

Regulatory Information
Joule technologies are suitable for use under EU and FDA food contact legislation and also meet the rigorous specifications of the major brand owners. Full regulatory details for your region are available on request.
PET RESIN ENHANCEMENT TECHNOLOGIES

JOULE RHB

Cleaner resin for the recycling stream
Container recyclability is now a key driver in beverage and food packaging development. PET resin with Joule RHB offers more energy efficient polymer processing and enables visual clarity to be maintained through multi-trip recycling. Joule RHB provides a long-term sustainable solution for the PET packaging pipeline.

Advanced reheat capability
Utilizing the very latest generation of reheat technology, Joule RHB enables increased IR heat uptake and the potential for significant energy savings for the converter. ColorMatrix technicians can work with you to ensure reheat and clarity targets are met. Greater blowing consistency due to improved temperature distribution can also be experienced making difficult to blow thick wall or heavy weight preforms a realistic possibility.

Inherent toning capability
The inorganic nature of Joule RHB means that it can withstand high temperatures and is not susceptible to yellowing. The technology’s natural blue toning capability means that the requirement for additional blue toners can potentially be eliminated.

Long-term reheat and visual clarity
Joule RHB’s inherent properties achieve excellent clarity, brightness and haze-free aesthetics. Over repeated processing, the technology retains 100%+ of it’s reheat capability and continues to resist yellowing contributing to a much cleaner recycling stream.

Improves recyclability of blended resins
When blended with recycled polymer, Joule RHB retains its toning capability, masks yellowing and yields a higher quality recycled material. When added to inferior PET grades, polymer with Joule can also improve bottle blowing failure rates and prove valuable in applications where scrap is reprocessed.

JOULE RBK

CARBON BLACK REHEAT TECHNOLOGY

Joule RBK is a black body IR absorber which generates consistent and controlled reheat. This technology offers a cost-effective reheat solution with good clarity characteristics.
OPTICA

ORGANIC, HIGH PERFORMANCE PET RESIN TONER

Technology description
Optica toners are engineered to counteract yellowing during PET polymer processing. Formulated with organic dyes, they dissolve directly into the polymer giving improved color control and excellent clarity.

Applications
Recommended for PET resin grades used in beverage and food container production.

Usage rates
Supplied as a two part red and blue system, as a powder or preferably as a dispersion for precise color control. Loading levels are typically ten times lower than traditional technologies.

Handling
Optica toners are organic, non-chlorinated, classed as non-hazardous and require no special handling or storage procedures beyond normal PPE.

Regulatory information
Optica toners are suitable for use under all applicable EU and FDA food contact legislation, including the French positive list. They also meet the rigorous specifications of the major brand owners. Full regulatory details for your region are available on request.

A brighter, clearer aesthetic
Optica toners are fully polymer soluble resulting in a much brighter, clearer aesthetic to the finished part. A reduction in the rate of crystallization during conversion also contributes to a cleaner, haze free aesthetic.

Precise color control
Optica toners are supplied as a two part red and blue system, in powder or pre-milled liquid dispersions. ColorMatrix technicians can work with you to create a customized formulation for precise color control and optimized results for your particular processing requirements.

Highly cost-effective
Due to its high color strength and high level dosing accuracy, low loading rates are required to achieve the desired effect—typically ten times less than some alternative technologies. Lower toner addition also contributes to a brighter, clearer molded part.

Precise color and reheat control
ColorMatrix technicians utilize sophisticated modeling techniques to predict accurate loading requirements. Our team can work with you to formulate an effective reheat and toner package customized to your particular application’s requirements.

Improved processing
As Optica toners are fully polymer soluble, they process easily and can contribute to production efficiencies by extending filter life and reducing downtime required for filter changes compared to traditional toner packages.

COMBINED REHEAT AND TONER PACKAGE

Precise color and reheat control
ColorMatrix technicians utilize sophisticated modeling techniques to predict accurate loading requirements. Our team can work with you to formulate an effective reheat and toner package customized to your particular application’s requirements.