

# COLORMATRIX™ AAZURE™

Acetaldehyde Scavenger Process  
Aid to Enhance rPET Processability





**ColorMatrix™ AAzure™** is a patent protected, liquid dispersion process aid with acetaldehyde scavenging capability. It is designed for converters to add to preforms to allow for higher levels of rPET, reducing risk from off-taste and improving the sustainability of PET bottles. It enables:

- Increased rPET content
- Reduced CO<sub>2</sub> emissions

When added to PET preforms and bottles, ColorMatrix AAzure helps to:

- Improve bottle quality
  - Reduced preform acetaldehyde by up to 80%
  - Improved mechanical strength
  - Lightweighting

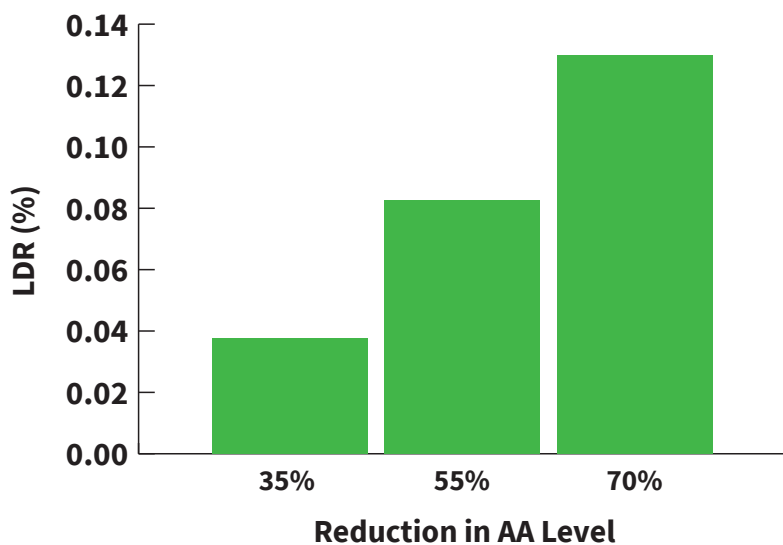
- Improve processability
  - Reduced bottle blowouts
  - Reduced scrap
  - Improved productivity
- Reduce energy consumption during bottle blowing process

ColorMatrix AAzure has a slight blue tint, which is useful for off-setting yellowing often associated with the use of rPET, and has minimal impact on final product color or aesthetics.

For applications requiring higher levels of toning, ColorMatrix AAzure can be combined with our range of recycle-friendly toners.

Note to converters: This product is compatible solely with transparent bottles produced in a two-stage injection stretch blow molding process.





### Reduced Preform Acetaldehyde Levels

Acetaldehyde generation in the preform can lead to issues with taste and odor for bottle contents. This issue can increase when higher levels of rPET are used. ColorMatrix AAzure can help to reduce the risk of off-taste by reducing preform AA levels by up to 80%.

## INCREASED rPET CONTENT & IMPROVED QUALITY

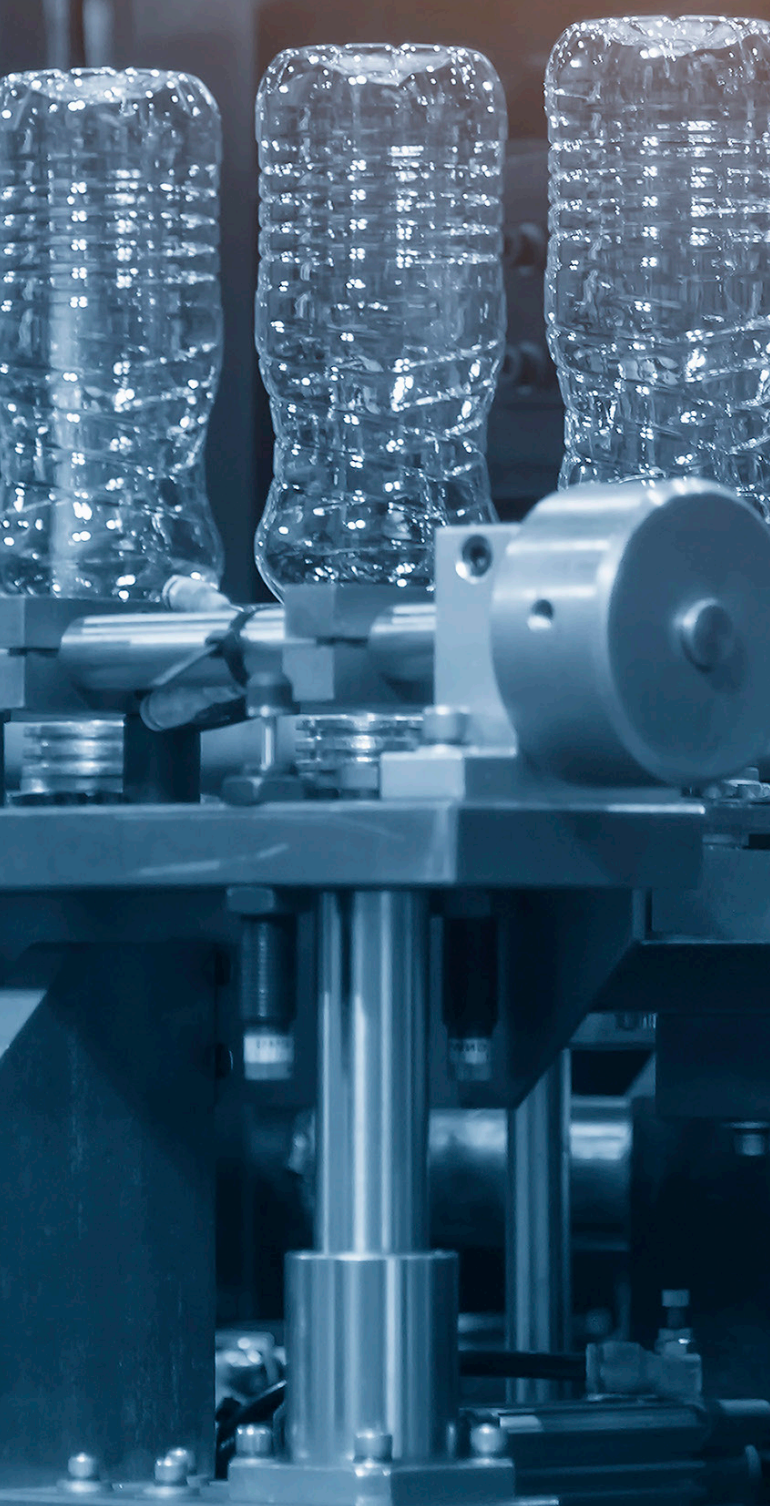
Standard acetaldehyde scavenging products can often contribute towards yellowing during recycling. ColorMatrix AAzure has shown to have a much improved impact on the recycling process, with reduced yellowing through multiple heat histories.



Impact of 5 Melt Heat Histories on Preform Color

## IMPROVED BOTTLE QUALITY

ColorMatrix AAzure allows for further optimization of the polymer weight distribution during the bottle blowing process, which improves mechanical strength and bottle quality. This improves processability at high levels of rPET, reducing blowouts, improving productivity, allowing for higher levels of rPET use, and also lightweighting.



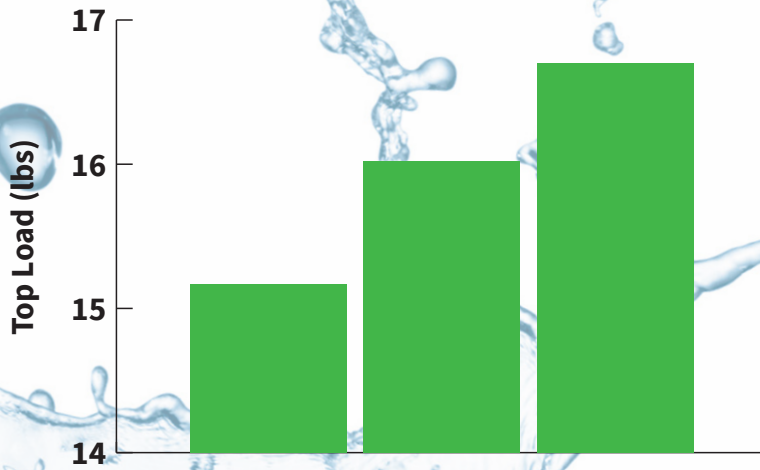
## Re-optimization of Polymer Weight Distribution to Improve Bottle Strength

8.5g 0.5L bottle, 60% rPET



Based on commercially produced water bottles, 51,000bph

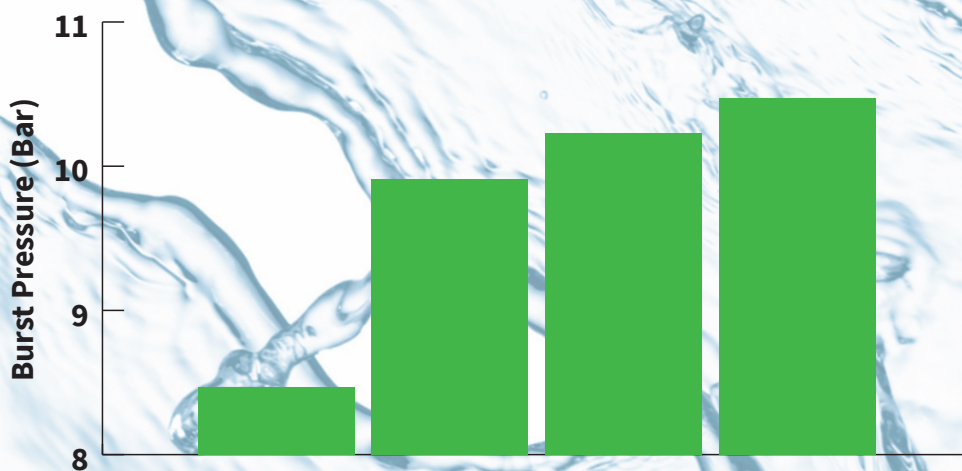
## Mechanical Strength



### Increasing ColorMatrix AAzure Concentration

*Based on PTI 14.4g 0.5L water bottles, Instron testing*

## Burst Pressure



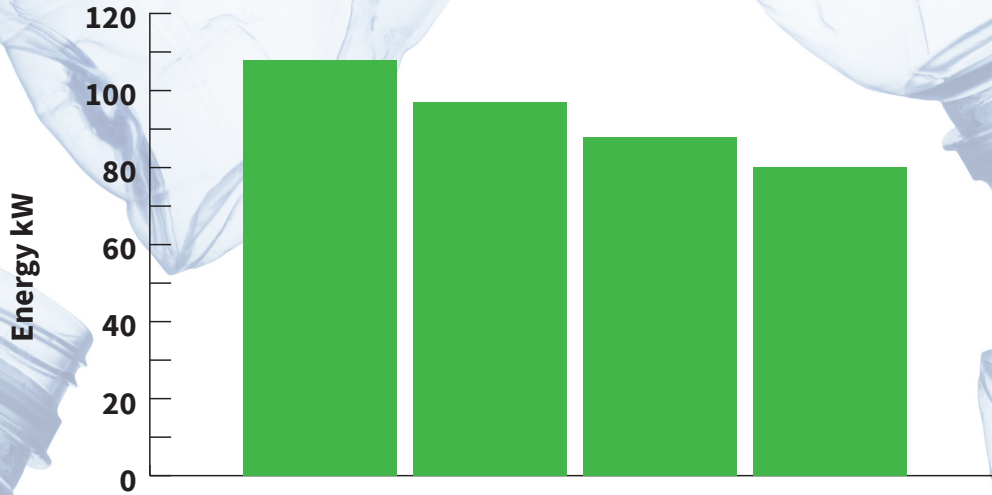
### Increasing ColorMatrix AAzure Concentration

*Based on 8.5g, 0.5L commercially produced water bottles*

# REDUCED CO<sub>2</sub> EMISSIONS

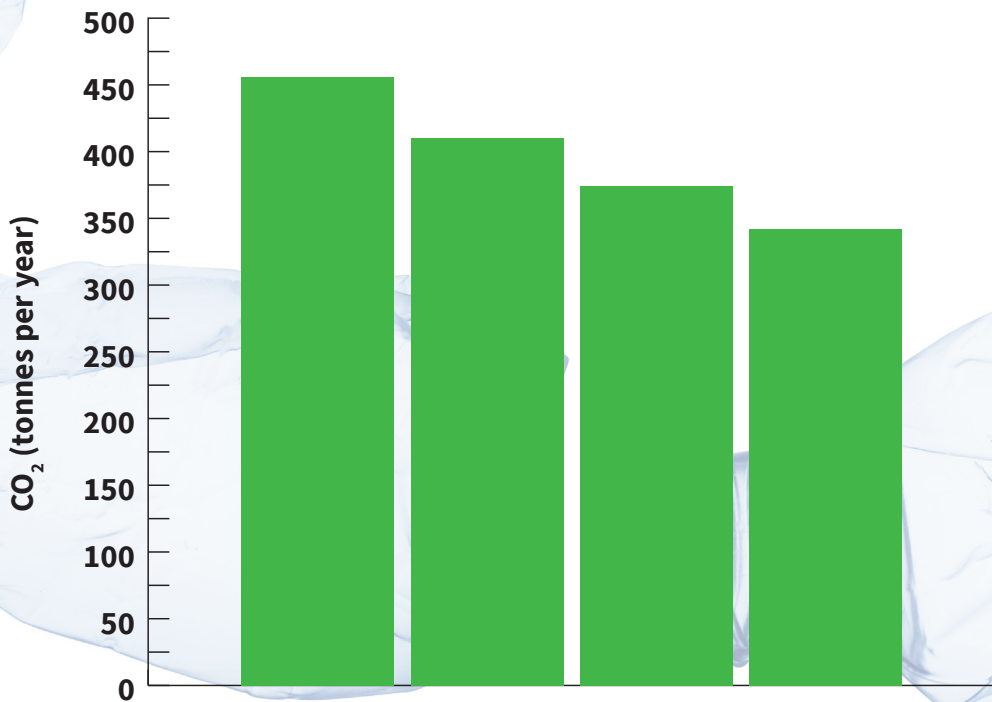
## Reduced Energy Consumption

ColorMatrix AAzure increases the heat-up rate for preforms, enabling energy reductions for the heating lamps used during the bottle blowing process. This effect contributes towards reducing CO<sub>2</sub> emissions.



## Increasing ColorMatrix AAzure Concentration

25% reduction in energy consumed during the bottle blowing process, based on a commercial process producing 8.5g 0.5L water bottles at 51,000 bph



## Increasing ColorMatrix AAzure Concentration

Translates to 25% CO<sub>2</sub> reduction based on 25% energy reduction in bottle blowing process

## PROCESSING AND HANDLING

ColorMatrix AAzure products are supplied in ColorMatrix approved packaging and are active as supplied. They are metered into the PET stream just above the feed throat of the injection molding machine or extruder, using a Avient supplied ColorMatrix liquid metering system. The product should not be used in combination with any other dosing systems.

Melt processing of ColorMatrix AAzure products is carried out at typical PET processing conditions at recommended dose rates, which range from 0.01% to 0.13%. Once incorporated into the preform, no further action is necessary. Care must be taken to optimize the bottle blowing process due to the increased heat-up rate of the preform, to take advantage of the many benefits offered by this product range.



## FOOD CONTACT

ColorMatrix AAzure has food contact approvals defined in the below table. For further information regarding food contact approvals, please get in touch with your local sales representative.

PRODUCT	EU	FDA	MERCOSUR	CHINA
ColorMatrix AAzure	•	•	•	2022





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