

# DuPont™ Biomax® Thermal 300

THERMAL ENHANCEMENT MODIFIER FOR PLA

## Improving thermal stability of PLA packaging...



Formed PLA Tray with 2% Biomax® Thermal 300 – heated to and kept at 70°C for 1 hour



Formed PLA Tray without additive – heated to and kept at 70°C for 1 hour

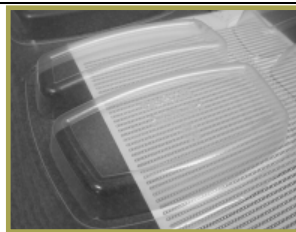
Look no further for a solution to prevent PLA\* articles from deforming at elevated temperatures [higher than 55°C (130°F)]! With the addition of DuPont™ Biomax® Thermal 300 modifier and processing in a two-stage forming process, thermoformed PLA articles can now withstand exposure to a higher temperature range. This enables a broader field of applications using polylactic acid (PLA), a biobased and compostable material offering, that was formerly limited due to PLA's low glass transition temperature.

### Add Biomax® Thermal 300 modifier to your PLA composition...

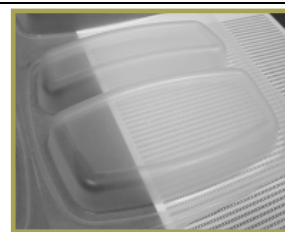
and open up new options to renewable packaging – even in applications with potentially high heat exposure during shipping, storage, and use.

### Biomax® Thermal 300 Benefits

- Raises end-use temperature threshold of PLA articles (demonstrated to be dimensionally stable up to 95°C)
- Reduces shrinkage at temperatures greater than PLA's natural glass transition temperature
- Offers some toughening benefits
- Only minimally affects haze
- Renewably sourced modifier (50% RS content)
- U.S. and EU compliant for food contact



Haze at 2% addition of Biomax® Thermal



Haze at 4% addition of Biomax® Thermal

\* Biomax® Thermal 300 modifier addition is valid for PLA manufactured and marketed by Natureworks LLC. Please consult your DuPont sales representative before using Biomax® Thermal in applications using PLA supplied by other manufacturers.



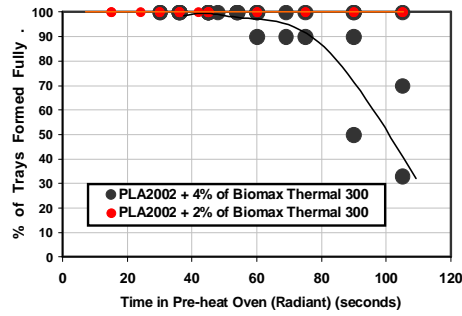
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**DuPont™ Biomax® Thermal 300 Improves PLA dimensional stability at elevated temperatures\* when processed in two-stage thermoforming processes\*\*.**

\* demonstrated up to 95 °C.

\*\* During heat setting step... PLA does not stick to the mold and releases without warping



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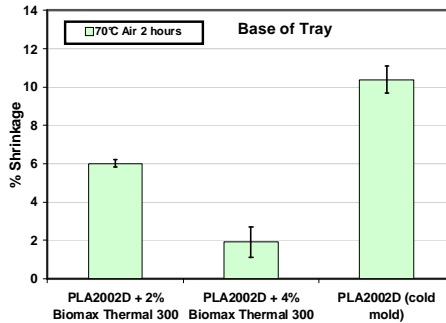
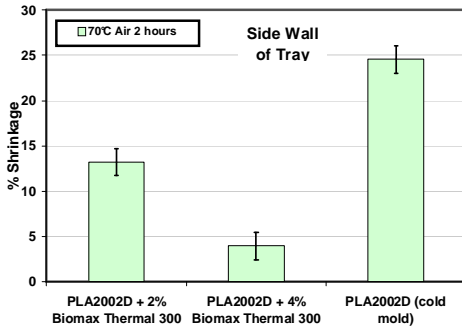
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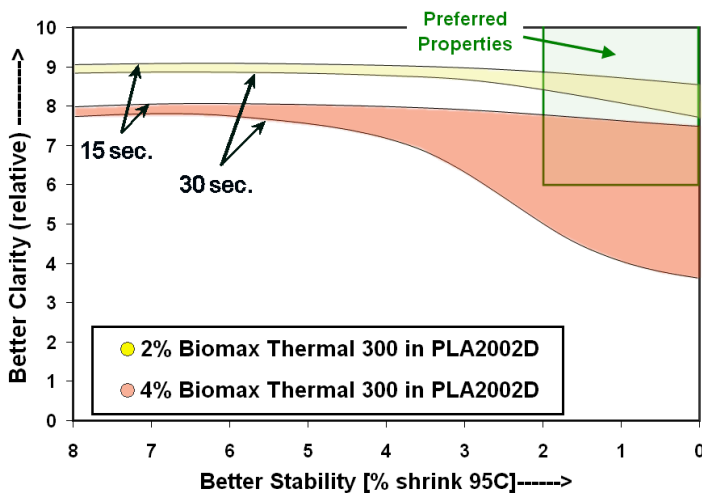
[www.sustainablepackaging.dupont.com](http://www.sustainablepackaging.dupont.com)

**Effect of addition of Biomax® Thermal 300 on PLA shrinkage**  
 Significant reduction in shrinkage after heating occurs both in the tray base and the side wall.



**PLA with Biomax® Thermal 300 only minimally affects haze and provides good contact clarity.**

Haze is minimally affected and depends on % addition and cycle time.



*CAUTION: This information is based upon technical data that DuPont believes to be reliable. It is subject to revision as additional knowledge and experience are gained. DuPont makes no guarantee of results and assumes no obligation or liability in connection with this information.*



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