

Milliken®
Millad® NX® 8000 ECO
 Sustainable Clarifying Agent for Polypropylene

CASE STUDY

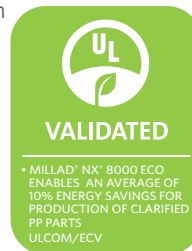
Clarify your TWIM food packaging with Milliken additive

Millad® NX® 8000 ECO clarifier delivers transparent, energy-saving results

Consumers want to clearly see the packaged food products they are buying, and those making the packages want a cost-efficient way to manufacture lightweight, transparent containers that retain a bright, consistent look regardless of the retail setting in which they are sold.

Thin-wall injection molders using polypropylene (PP) formulated with Milliken Chemical's Millad® NX® 8000 ECO additive not only will realize crystal-clear transparency in the end product, but will save energy and money in the process.

But don't take our word for it. Underwriters Laboratories (UL) has independently verified that injection molding products using NX UltraClear™ PP resin — which can be made only by using the Milliken clarifier — results in average energy savings of 10%. Compared with processing PP made using traditional clarifiers, NX UltraClear PP also has been shown to enable up to 14% faster cycle times, as well as 14.9% lower CO₂ emissions.



The savings achieved by processing 1,000 metric tons of PP with Millad NX 8000 ECO versus traditional clarifiers can result in some 1,224 hours saved in manufacturing — equal to an estimated value of €48,800 or \$57,800. Using the same baseline of 1,000 metric tons processed, our research indicates that this translates to a lowering of such emissions by 14.9 percent, or the equivalent of running 10.8 cars per year, powering 6.9 domestic houses per year, or 11.8 acres of forest.

These features enable brand owners to apply the coveted UL Environmental Claim Validation label to their product's package, providing a marketing advantage by helping to communicate the company's sustainability commitment to its customers.

In addition to the clarity and energy saving, one of the key values of using Milliken's ECO additive is the clean, consistent appearance of the end products that it yields in the retail shops, regardless of the light source. Milliken's ClearTint colorants also can be used to add bright, colorful shades to the packaging.

NX UltraClear PP resin also meets a number of key requirements, including being safe for use in contact with food, in microwaves, freezers, and dishwashers, while also being airtight, leak-proof and having good impact resistance. For a clear advantage, use Millad NX 8000 ECO for your thin-wall injection molded parts.



SAVINGS/1000MT PP EXPRESSED AS



14%
cycle time



1242
hours saved in manufacturing



57,800 dollars
48,800 euros



14.9%
CO₂ emissions



10.87
cars running per year



6.91
domestic power [houses] per year



11.82
acres of forest

SAVINGS ACHIEVED BY PROCESSING PP WITH MILLAD NX 8000 ECO VERSUS TRADITIONAL CLARIFIERS

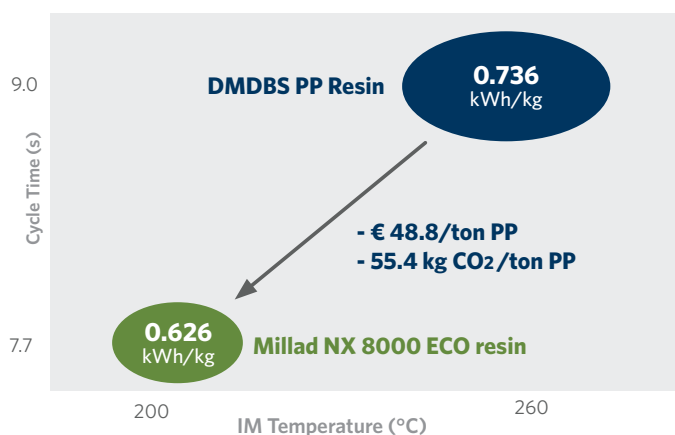
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Energy savings & allowing for UL label

Thin wall packaging made with NX UltraClear PP offer superb clarity, while also being lightweight, durable and highly recyclable. Additionally, injection molders using the material can save both energy and money, due to lower processing temperatures and cycle times that can be as more than 7% faster than with resin formulated using traditional clarifiers.



Part	Food Packaging
Machine	Hydraulic
Shot weight	147.5 g/part ; 2 cavity mould
Traditional clarifier resin	40 MFR RCP
Millad NX 8000 ECO resin	100 MFR RCP

Parameter	Assumptions
Energy cost	€ 0.11/kWh
Machine Cost	€ 25/hour
Labour cost	€ 5/hour (1 person per 4 machines)
Sustainability	0.308 kg CO ₂ /kWh

PLEASE NOTE: As each customer's use of our product may be different, information we provide, including without limitation, recommendations, test results, samples, care/labeling/processing instructions or marketing advice, is provided in good faith but without warranty and without accepting any responsibility/liability. Each customer must test and be responsible for its own specific use, further processing, labeling, marketing, etc. All sales are exclusively subject to our standard terms of sale posted at www.milliken.com/terms (all additional/different terms are rejected) unless explicitly agreed otherwise in a signed writing.

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