

Ambient shipping for TaqMan products



Green benefits

- Sustainable packaging: no dry ice, expanded polystyrene (EPS) coolers, or CDs

Introduction

We are committed to designing our products with the environment in mind—it's part of how we enable our customers to make the world healthier, cleaner, and safer. To minimize the adverse environmental impact of packaging and shipping products on cold gel packs or dry ice, we investigated the feasibility of shipping our Applied Biosystems™ TaqMan™ Assays at ambient rather than cold temperatures. We have found, through functional testing, that product quality and long-term stability are unaffected by ambient shipping. In addition, we have eliminated CDs

previously included in shipments of Applied Biosystems™ TaqMan™ Assays, TaqMan™ Array Plates, and TaqMan™ Array Cards.

By these actions, we are decreasing packaging and refrigerant, thereby reducing:

- Energy used to manufacture the packaging
- Fuel use and greenhouse gas emissions associated with transport and packaging
- Packaging waste at end-of-life

Product description

TaqMan Assays are the most comprehensive set of products available for analyses of gene expression, miRNA, copy number variation, and single nucleotide polymorphism (SNP) genotyping. They include off-the-shelf gene-specific probe and primer sets, custom probes, and primers manufactured to your desired sequences. All TaqMan Assays have been designed using our validated bioinformatics pipeline and can be performed with the same PCR protocol, eliminating the need for primer design or PCR optimization. TaqMan Assays provide fast, reliable, and convenient methods for generating reproducible results for your research.

Green features

Sustainable packaging

The adverse environmental impact of shipping products at low temperature is tremendous, causing increased CO₂ emissions generated from the manufacturing of expanded polystyrene (EPS) coolers and refrigerant, increased packaging size, reduced freight density, and increased fuel consumption due to added refrigerant weight. We have been systematically evaluating ways to minimize the carbon footprint of shipping refrigerated products. One way we can do this is to challenge the perceived requirement for refrigerated shipping, and when the data support a change we ship products at a temperature consistent with their demonstrated stability.

The annual carbon footprint to manufacture EPS and convert it into coolers for our oligonucleotide products is approximately equivalent to 102 tons of CO₂ [1]. Adding cold gel packs or dry ice to each cooler to ensure the product is delivered frozen to our customers further increases the mass and dimensions of each package. Factoring in the number of shipments and average distance traveled per package, and the fact that most packages are shipped via air, the annual total carbon footprint for transporting frozen oligonucleotides is in excess of 111 tons (measured as CO₂ emissions) [1]. Production of CDs for shipment with TaqMan Assays generates, additionally, approximately 34 tons per year of CO₂ emissions [2].

By going ambient and eliminating CDs from shipments of TaqMan™ products, we will help divert an annual total of nearly 27,675 kg (75,235 cu. ft.) of EPS from landfills and incinerators, and will reduce the total carbon footprint from manufacture of the CD and EPS coolers (and their transport) by more than 248 tons annually [2,3].

Functional and stability testing demonstrated that TaqMan products exposed to simulated ambient shipping conditions remained stable and performed identically to assays shipped on cold gel packs or dry ice [4].

References

1. Data derived from Bousted, I, Eco-profiles of the European Plastics Industry POLYSTYRENE (Expandable)(EPS). PlasticsEurope, June 2006.
2. Weber CL et al. (2010) The energy and climate change implications of different music delivery methods. *J Ind Ecol* 14:754–769.
3. Reference data derived from US Environmental Protection Agency. 2008. Climate leaders, greenhouse gas inventory protocol core module guidance: Optional emissions from commuting, business travel and product transport. US EPA document EPA-430-R-08-006.
4. For the detailed results of ambient shipping stability and performance testing, go to thermofisher.com/ambientshipping

Find out more at thermofisher.com/greeneralternatives

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