

# TaqMan Assay ambient shipping



## Green benefits

- No dry ice
- No expanded polystyrene (EPS) coolers
- No energy expended to produce coolers
- Decreased fuel consumption and greenhouse gas emissions for transport
- Less waste disposal

## Introduction

To minimize the adverse environmental impact of packaging and shipping products on dry ice, Thermo Fisher Scientific investigated the feasibility of shipping its Applied Biosystems™ TaqMan™ Assay products at ambient temperature. Functional and stability testing demonstrated that assay products shipped at ambient conditions provided the same quality as assays shipped on dry or gel ice. By these actions, we are decreasing packaging and both dry and gel ice, thereby reducing energy and fuel use, greenhouse gas emissions, and volume in the waste stream.

## Product description

TaqMan Assays are the most comprehensive set of products available for gene expression, miRNA, copy number variation, and single nucleotide polymorphism (SNP) genotyping analyses. They include off-the-shelf gene-specific probe and primer sets, custom probes, primers manufactured to your desired sequences, and everything

in between. 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.

## Sustainable packaging

We have been systematically evaluating novel ways to minimize the environmental impact of shipping Applied Biosystems™ products on dry or gel ice, and reduce the carbon dioxide (CO<sub>2</sub>) footprint generated by these products during distribution. It has been demonstrated that TaqMan Assay products maintain the same quality and functionality after shipping at ambient temperatures. This helps us minimize the adverse environmental impact of shipping frozen products by decreasing CO<sub>2</sub> emissions associated with everything from manufacturing coolers to the addition of dry or gel ice for transport.

The annual carbon footprint to manufacture EPS and convert it into coolers for our oligonucleotide products is approximately equivalent to 102 tons of CO<sub>2</sub> [1].

Adding gel 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 CO<sub>2</sub> emissions) [2].

By “going ambient” for the TaqMan Assays, Thermo Fisher Scientific will help divert an annual total of nearly 27,675 kg (75,235 ft<sup>3</sup>) of EPS from landfills and incinerators, and will reduce the total carbon footprint from manufacture of the EPS coolers and their transport by more than 214 tons annually.

Functional and stability testing demonstrated that TaqMan Assays exposed to simulated ambient shipping conditions remained stable and performed identically to assays shipped on dry or gel ice.

## TaqMan Assay products

- TaqMan Gene Expression Assays
- Custom TaqMan Gene Expression Assays
- TaqMan MicroRNA Assays
- TaqMan SNP Genotyping Assays
- Custom TaqMan SNP Genotyping Assays
- TaqMan Drug Metabolism Genotyping Assays
- TaqMan Noncoding RNA Assays
- TaqMan Pri-miRNA Assays
- TaqMan PreAmp Pools
- Megaplex Primer Pools
- TaqMan Copy Number Assays
- Custom TaqMan Copy Number Assays
- TaqMan Endogenous Controls
- TaqMan Copy Number Reference Assays
- TaqMan GAPDH Assays
- TaqMan RNase P Assays

### Footnotes

1. Data derived from Bousted I, Eco-profiles of the European Plastics Industry POLYSTYRENE (Expandable) (EPS). PlasticsEurope, June 2006.
2. 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. Available at [http://www.epa.gov/climateleadership/documents/resources/commute\\_travel\\_product.pdf](http://www.epa.gov/climateleadership/documents/resources/commute_travel_product.pdf)

Further details can be found at  
[thermofisher.com/ecotaqman](http://thermofisher.com/ecotaqman)

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