

BenchStable Cell Culture Media



Greener by design™

 **More energy efficient:**
ambient-temperature storage

 **Responsibly packaged:**
increased recyclability

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Introduction

We are committed to designing our products with the environment in mind. This fact sheet provides the rationale behind the environmental claims that Gibco™ BenchStable™ Cell Culture Media have more sustainable packaging and help promote more efficient use of energy by reducing the need for cold storage, compared to traditional media.

Product description

The BenchStable line of media products is the first to offer basal media engineered for flexibility and convenience, enabling storage at room temperature. This product line is available in the most commonly used basal media formulations: Gibco™ DMEM, DMEM/F-12, MEM, and RPMI 1640—all of which include Gibco™ GlutaMAX™ supplement. BenchStable media products have been optimized for routine cell culture. This includes maintaining expected cellular proliferation, morphology, and functions of many common cell lines, and maximizing cell densities comparable to conventional basal media formulations when supplemented with 10% fetal bovine serum (FBS).

Green features

More energy efficient

Cold storage is one of the primary sources of energy consumption in a lab. For example, a 2015 study on laboratory energy consumption by the Center for Energy Efficient Laboratories (CEEL) determined that approximately 25% of the energy consumption in a typical lab is from cold storage [1]. One major benefit of BenchStable media is the ability to store the media bottles at room temperature, freeing up valuable refrigerator space and enabling a substantial decrease in energy usage. Globally, a switch by scientists to BenchStable media from current refrigerated media could save 34 GWh of energy each year, equivalent to the yearly greenhouse gas (GHG) emissions from more than 5,000 passenger cars [2,3].



Responsibly packaged

Many cell culture reagents are light sensitive and therefore must be protected from light during storage. When designing BenchStable media for ambient-temperature storage, we understood that the product could be exposed to light if stored out in the open in a lab. We therefore package the BenchStable media in paperboard boxes made from 100% recyclable material with a dark interior. Addition of this light-protective box contributes 0.05 lb of CO₂ equivalents, compared with the 6.5 lb of CO₂ equivalents saved by enabling ambient media storage, resulting in a significant net environmental benefit with a switch to BenchStable media [3].

As with other Gibco™ media, BenchStable media are packaged in the Gibco™ bottle made from polyethylene terephthalate (PET) with a high-density polyethylene (HDPE) lid [4]—two of the most highly recycled plastics [5].

Similar to all our media products, BenchStable media are shipped at ambient temperature in fully recyclable cardboard boxes.

Shipping in ambient-temperature conditions eliminates the need for expanded polystyrene (EPS) coolers and refrigerants [6]. From reducing the packaging for shipping to eliminating the need for cold storage in the lab, our line of BenchStable media products is a win for our company, our customers and the planet.

References

1. Allison Paradise (2015) Market Assessment of Energy Efficiency Opportunities in Laboratories. https://www.etc-ca.com/sites/default/files/reports/ceel_market_assessment_et14pge7591.pdf
2. US EPA Greenhouse Gas Equivalencies Calculator. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>
3. Calculations based on kWh energy usage from Green fact sheet: TSX Series high-performance refrigerators. <https://assets.thermofisher.com/TFS-Assets/LED/Datasheets/PG1789-PJT2741-COL22692-2017-Green-Campaign-GFS-TSX-Series-Refrigerators-Americas-FHR.pdf>, and <https://www.fibrebox.org/life-cycle-assessments> for CO₂ equivalents per lb of corrugated cardboard.
4. Green fact sheet: Gibco media bottles. <https://assets.thermofisher.com/TFS-Assets/LSG/brochures/GIBCO%20Media%20Bottles%20-%20Green%20Fact%20Sheet.pdf>
5. United States Environmental Protection Agency Advancing Sustainable Materials Management: 2015 Tables and Figures. https://www.epa.gov/sites/production/files/2018-07/documents/smm_2015_tables_and_figures_07252018_fnl_508_0.pdf
6. Green fact sheet: GlutaMAX Supplement. <https://assets.thermofisher.com/TFS-Assets/LSG/brochures/GlutaMAX-I+Media+Supplement+-+Green+Fact+Sheet.pdf>

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