DNA Low Binding Snap Cap Microcentrifuge Tubes, Sustain Series

Less waste, renewable material: The polypropylene used in the DNA Low Binding Snap Cap Microcentrifuge Tubes, Sustain Series, consists of ISCC PLUS–certified, second-generation, biobased material. The material reduces carbon dioxide equivalents (CO_2e) by 3.43 kg per kg of biobased polypropylene, relative to the non–Sustain Series equivalent.

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ISCC International Sustainability & Carbon Certification

Introduction

We are committed to designing our products with the environment in mind. This fact sheet provides the rationale behind the environmental claims for Thermo Scientific™ DNA Low Binding Snap Cap Microcentrifuge Tubes, Sustain™ Series.

- The polypropylene used consists of biobased material allocated on a mass balance basis from second-generation waste and residue oils; second-generation feedstock refers to crops, plants, or wastes not suitable for human or animal consumption.
- Products are mass balance chain-of-custody certified by the globally recognized International Sustainability and Carbon Certification (ISCC) system.

Figure 1. DNA Low Binding Snap Cap Microcentrifuge Tubes, Sustain Series.

Product description

The DNA Low Binding Snap Cap Microcentrifuge Tubes, Sustain Series, are ideal for general lab researchers in biotech, pharma, and forensics who need to ensure nucleic acid integrity in precious samples and are looking for more sustainable products. The tubes minimize loss of DNA during incubation and storage and are produced with biobased material allocated on a mass balance basis. Viscous liquids and costly reagents retained in a microcentrifuge tube affect assay accuracy and precision; with no additives or coatings, these tubes—available in 0.6 mL, 1.5 mL, and 2.0 mL sizes—offer maximum DNA recovery (Figure 1).

Green feature

Less waste, renewable material

The biobased polypropylene resin used in the DNA Low Binding Snap Cap Microcentrifuge Tubes, Sustain Series products is manufactured from a second-generation, bio-circular feedstock (waste and residual oils) under a mass balance approach.

Bio-circular feedstocks refer to materials that are considered waste or processing residue at the beginning of the supply chain. These materials are not landfilled or energetically used, but instead reused, further used, or recycled in a loop that keeps them in the economy [1]. These feedstocks have a lower environmental footprint than virgin fossil fuel–based feedstocks, without sacrificing performance. Additionally, there may be no need for revalidation or retesting, as the product can be chemically and molecularly identical to an existing fossil fuel–based version.

The ISCC PLUS mass balance approach is used to track bio-circular content and provides a method of verifiable bookkeeping [2,3]. This promotes confidence in traceability through the supply chain and helps enable sourcing of more sustainable products. The Thermo Fisher Scientific facility located in Tijuana, Mexico, has completed the ISCC PLUS certification process, ensuring chain-of-custody traceability for the biobased content in the polypropylene resin and resulting Snap Cap Microcentrifuge Tubes [4].

Incorporating biobased material leads to a decrease in the requirement for virgin fossil fuel feedstock, thereby reducing greenhouse gas emissions. Each kg of biobased polypropylene resin used in these products reduces greenhouse gas emissions by 3.43 kg CO_2e [5]. This is equivalent to 1.96x lower CO_2e emissions per kg of biobased polypropylene resin compared to traditional fossil fuel–based polypropylene resin. For example, the 1.5 mL DNA Low Binding Snap Cap Microcentrifuge Tube, Sustain Series, has a carbon footprint that is 17.3 kg CO_2e lower than that of the non–Sustain Series equivalent. For every 20 units of this product purchased, customers have the potential to eliminate the use of up to 100.8 kg of virgin fossil fuel feedstock and reduce their carbon footprint by up to 346 kg CO_2e. Transitioning to biobased products can support customers in meeting their Scope 3 emission reduction targets [6].

Incorporating biobased plastics into our product designs is a win for our customers, our company, and the planet.

References

1. ISCC. Feedstock category: bio-circular. **iscc-system.org/markets/feedstocks/bio-circular/**
2. ISCC. The mass balance approach. **iscc-system.org/certification/chain-of-custody/mass-balance/**
3. Enabling a circular economy for chemicals with a mass balance approach, a whitepaper from Co.projects Mass Balance. CE100 (Circular Economy 100), Ellen MacArthur Foundation, 2019.
4. ISCC certificates, Thermo Fisher Scientific, Tijuana, Mexico. **iscc-system.org/certification/certificate-database/all-certificates/**
5. Product carbon footprint data provided by the manufacturer of the biobased polypropylene resin. Fossil-based polypropylene has a cradle-to-gate footprint of 1.75 kg CO_2e/kg of resin. Biobased polypropylene has a footprint of –1.68 kg CO_2e/kg of resin. This includes cradle-to-gate fossil-based emissions (0.96 kg CO_2e/kg), biogenic emissions (0.77 kg CO_2e/kg), and biogenic removals (–3.41 kg CO_2e/kg).
6. Greenhouse Gas Protocol. Corporate value chain (Scope 3) standard, **ghgprotocol.org/corporate-value-chain-scope-3-standard**

Find out more at **thermofisher.com/sustainplastics**