

Tube Holder



Molder: Innovative Mold Solutions

Moldmaker: Millipore R&D Mold Engineering

Material Supplier: Telles

Designer: Millipore R& D Design Engineering

OEM: Millipore Corporation

Supporting Documentation:

[Mirel Ecostand](#)

Product Description

Tube Holder is made from a bioplastic material with the unique combination of being biobased and biodegradable yet having the physical properties of petroleum based plastics. The tube



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holder is a symbolic effort under Millipore's global Sustainability Initiative to reduce corporate consumption of non-renewable resources, eliminate waste and adopt behavioral changes. Millipore's vision is to broaden its technical understanding of how bioplastics can be used, and then scale up their product offering. Providing bio-based products is meaningful to Millipore's customers, but also important to the environment. The device was created by the Danvers, Massachusetts-based research and product development team in Millipore's Bioscience Division. The bioplastic material from Telles is a high performance, semi-crystalline polyester specifically engineered for high modulus injection molding applications. The material is durable in use yet, when disposed of properly, will fully biodegradable in a wide range of environments including soil, home and industrial compost systems, freshwater and marine environments. The bioplastic resins meet international biodegradability standards of ASTM D6400 and EN 13432 for Compostable Plastics, ASTM D7081 for biodegradable Non-Floating Plastics in Marine Environments, and received the Vinçotte OK Biodegradable certification for both natural soil and natural fresh water environments.

Why is the product innovative?

EcoStand Tube Holder from Millipore is made from Mirel™ bioplastic material that has the unique combination of being biobased and biodegradable yet with the physical properties of petroleum based plastics. The EcoStand tube holder device was designed and developed by the research and product development team located in the Millipore's Bioscience Division located in Danvers, Massachusetts, where the electricity used at this facility is completely offset with green-e® certified renewable energy. Millipore is a life science leader providing technologies, tools and services for bioscience research, biopharmaceutical and manufacturing. As part of their Global Sustainability Initiative, launched in 2008 to reduce the company's environmental impact and cut its global carbon footprint by 20% over five years, the company unveiled its first biodegradable and compostable product - the EcoStand tube holder made from Mirel bioplastic resins. EcoStand Design Features • Open window design allows easy viewing of tube contents • Compact and stackable to free up valuable laboratory space • Easy-to-clean design prevents pooling of excess fluid • Stable base prevents tubes and samples from tipping over • Highly compatible with 50 mL and 15 mL tubes from numerous manufactures • Stable from -80 °C to 45 °C for use in refrigerators and freezers • Biodegradable made from innovative high performance bioplastics The Millipore design team evaluated several injection molding grade bioresins and chose Mirel for its chemical compatibility, thermo-mechanical properties, low viscosity and the ease with which the material can be molded and fills the tool. Current trends within the plastics industry have brought biobased and biodegradable polymers quickly to the forefront. Mirel is a high performance biobased semi-crystalline polyester that is tough, durable, and has excellent resistance to heat, making it a suitable replacement for high performance materials including ABS and polycarbonate. Advanced attributes of Mirel P1003 include overall improved processability, improved flow, faster overall cycle times compared to other biopolymers, and an overall cycle time similar to traditional thermoplastics. Mirel bioplastic resins are Vinçotte-certified as biodegradable under natural soil and water environmental



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conditions, and also meet ASTM D6400 and EN 13432 / EN 14995 standards for compostable plastics, and the ASTM D7081 standard for non-floating biodegradable plastics in the marine environment. Mirel resins are different from other biopolymers: • Biodegradability • High heat resistance • Moisture resistance • Mold surface replication, high or low gloss • High modulus • Shelf stability • Easily colored with Telles recommended color concentrates Mirel bioplastics are being commercialized through Telles, a joint venture between Metabolix and Archer Daniels Midland.