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Topas® COC Replaces Glass in BD Tuberculosis Diagnostic Tube; COC Chosen Over Polycarbonate to Gain Moisture Barrier

Topas® Cyclic Olefin Copolymer Reduces Risk of Biocontamination versus Glass; Extends Nutrient Media Life to One Year.

Topas® cyclic olefin copolymer (COC) from Ticona has replaced glass in the diagnostic tubes BD (Becton Dickinson and Company) uses for tuberculosis testing in its BACTEC™ MGIT™ 960 System. The switch to the far more shatter resistant COC reduces the risk of biocontamination. BD chose Topas COC over polycarbonate for its high moisture barrier, so the nutrient media in the tube has a shelf life of at least 12 months.

In testing for *Mycobacterium tuberculosis* (TB), the BACTEC MGIT 960 System incubates a sample and then detects the growth of organisms with a sensor that measures fluorescence at 365 nm. This high-capacity system can accommodate up to 8,000 specimens a year. It also cultures TB bacteria in 1 to 2 weeks instead of the 3 to 4 weeks needed with traditional methods.



Caption: Diagnostic tubes for Becton Dickinson's BACTEC™ MGIT™ 960 tuberculosis testing system made from Topas® COC rather than glass are shatter resistant and reduce biocontamination risks.

(Click the photo desired to download it.)

"Topas COC eliminated the need to enclose the 16-by-100-mm tubes in costly barrier packaging," says Carole Jefferson, marketing manager at BD. "Its low permeability to water vapor (about 0.02 g-mm/m² day) means that the media loses little water over the long-term. The COC gave us many other important benefits. For instance, it is transparent at the wavelength measured, does not react with the growth media, has almost no extractables and withstands steam sterilization in an autoclave."

The injection blow molded tube has a uniform wall with a minimum thickness of 0.03 in. Blow molding provides better dimensional control for sealing than was possible with glass. The sealing surface in the plastic tube is controlled to within 0.005 in. as opposed to 0.01 in. with glass.

The tube is molded at Wheaton Plastics in Millville, NJ. Earl Skinner, project manager at Wheaton, says, "the COC processes much like polypropylene. It blow molds easily and has a broad processing range. It also flows well, is dimensionally stable and has good repeatability."

The automated BACTEC MGIT 960 system is a high-productivity unit typically used in hospitals, large reference labs and public health labs. The round-bottomed COC tubes used in the system contain an aqueous, Middlebrook 7H9-based nutrient media to support bacterial growth.

Topas COC is a family of amorphous engineering plastics that offers high clarity, transparency, stiffness, strength, low moisture absorption and excellent dimensional stability. The Topas COC resin used in the BACTEC MGIT 960 system meets U.S.P. Class VI requirements and has received U.S. Food and Drug Administration (FDA) Drug and Device Master File and numbers DMF# 12132 and MAF# 1043, respectively. Beyond medical and laboratory applications, Topas COCs can be used in a variety of applications, such as pharmaceutical blister packaging, food packaging, precision molded optics and printer toner binder resins.

About Ticona and Celanese

Ticona, the technical polymers business of Celanese AG, Frankfurt, produces and markets a broad range of engineering polymers and achieved sales of Euro 788 million in 1999. The company has about 2,400 employees worldwide and production, compounding and research facilities in the USA, Germany, the UK, and Brazil.

Celanese AG is a global chemicals company with leading positions in its key products and world class process technology. The Celanese portfolio consists of five main businesses: Acetyl Products, Intermediates, Acetate Products, Technical Polymers Ticona and Performance Products.

Celanese generated sales of around Euro 4.3 billion (excluding discontinued operations) in 1999 and employs about 13,900 people. The company has 32 production plants in eight countries, mainly in North America, Europe and Asia. Celanese shares are listed on the Frankfurt stock exchange (stock exchange symbol CZZ) and the New York Stock Exchange (symbol CZ).

For further information on Ticona and Celanese AG, please visit our websites: www.ticona.com and www.celanese.com.

For additional information on Topas® COC and its use in packaging and other applications, contact:

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