Smart Notes

Light transmission testing for Matrix ScrewTop amber-colored tubes

Do Thermo Scientific™ Matrix™ ScrewTop amber-colored storage tubes block light between 290 nm and 450 nm as indicated in the United States Pharmacopeia (USP) <671> spectral transmission standards for container performance testing?

Yes, Matrix ScrewTop amber-colored 0.5 mL (Cat. No. 3743AMB-BR) and 1.0 mL (Cat. No. 3741AMB-BR) storage tubes have been shown to block more than 50% of light between 290 nm and 450 nm as specified in the USP <671> spectral transmission requirements.

What are the USP <671> spectral transmission requirements?

USP <671> contains published standards for the functional properties of plastic containers and their components used to package regulated articles. The Spectral Transmission section addresses the light transmission of materials and states that no more than 50% of light of wavelengths between 290 nm and 450 nm (Figure 1) can pass through the material for plastic containers with nominal volumes of 1 mL or less. Light can impact the shelf life and quality of products, and may be a concern for some storage containers. Matrix ScrewTop amber-colored 0.5 mL and 1.0 mL storage tubes are made from 100% virgin polypropylene with a colorant designed to impart light resistance to the tubes.

How were the tubes tested?

Matrix ScrewTop amber-colored 0.5 mL and 1.0 mL storage tubes were subjected to the spectral transmission test outlined in USP <671>. Testing was performed using a spectrophotometer, which can detect light transmission by passing light at specific wavelengths through the amber tube wall and recording the transmitted light.

What did the results show?

The results showed that less than 10% of the light in the spectral range of 290 nm to 450 nm passed through the walls of the Matrix ScrewTop amber-colored 0.5 mL and 1.0 mL storage tubes. The results are well below the requirement of ≤50% transmitted light specified in USP <671>.

Summary

Matrix ScrewTop amber-colored 0.5 mL and 1.0 mL storage tubes have been tested and have exceeded the standard of no more than 50% transmitted light, outlined in USP <671>.

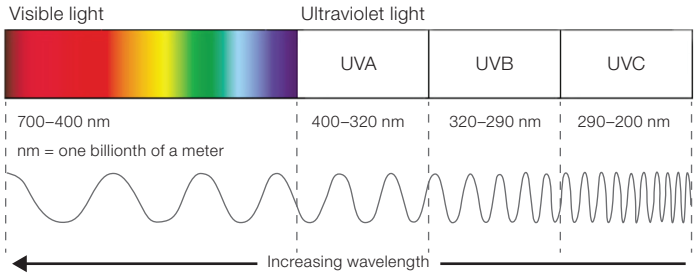

Figure 1. Energy produced by a light source has different wavelengths, measured in nanometers (nm).

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