



High-Performance Microplates

Aurora microplate products are constructed of Cyclo-Olefin Polymer (COP) which has distinctive physical and chemical properties that are superior to polystyrene and polypropylene. Unlike conventional microplates COP creates a superior combination of optical clarity, thermal stability, biocompatibility, low auto-fluorescence, flatness and chemical resistance. Aurora holds exclusive knowledge in the use of this plastic in high-density microplates for laboratory research. Plates are available in 384, 1536 and 3456 well configurations.

Key Attributes of Aurora Microplates

High Light Transmittance: *All Aurora plates exhibit high transmittance of UV, visible, and near-IR wavelengths of light. This transmittance window is superior to other plastics used in optical quantitation, including polystyrene, and results in improved research results. The plates support an expanded optical window down to 230nm. The plates are well-suited for absorbance measurements of DNA, nucleic acid, and protein concentrations at 260nm and 280nm.*

Low Auto-Fluorescence: *COP has less than 1% the native auto-fluorescence of polystyrene when excited at UV wavelengths of light. The result for life-science researchers is better assay signal-to-noise performance and ultimately more sensitive results.*

Broad Chemical Resistance: *Especially to DMSO and alcohol, this enables dual-use for storage of chemical compounds as concentrates, and in HT-screening applications for drug discovery.*

Biocompatibility/Chemically Inert: *No catalysts or reactive intermediates are used during the polymerization process. This results in a very inert surface, and overall plate composition. There are no heavy metals or oxidizers present which can react with compounds or biological materials when leached by DMSO or other solvents. All Aurora plates are manufactured in Clean-Room Conditions, with ISO 13485 Certification.*

Thermal Stability: *The plates exhibit excellent mechanical memory from -80°C to +120°C. This wide range of stability is conducive to cold storage, and thermal-cycling.*

Rigidity and Mechanical Stability: *COP's material hardness and a 2.2GPa rigidity resists microplate surface curvature by mechanical handling or heat treatments up to 120°C.*

Protein Binding: *The COP surface of an untreated microplate is hydrophobic and behaves chemically like untreated pure polypropylene. Proteins are not absorbed onto the surface. For sensitive enzyme assays, an untreated plate is preferred. Surface treated plates are available to enable high-binding of protein material.*

Quality Commitment through Design and Manufacturing

Microplate Flatness and Film Thickness: *The flat-bottom design of Aurora microplates are optimized for high-performance imaging and multi-mode detection. The flat bottom allows for more efficient plate washing results. The clear film- bottom of each microplate is a sheet of un-pigmented COP which is fused by heat to the interstitial material between the wells during the molding process. This provides an extremely flat (within 120µm), high transmittance window for optical measurements of each well. The bottom thickness is 100 or 188 microns.*

Automation Compatible: *Aurora Plates meet the rigorous demands of laboratory automation. The plates are qualified for fit and function that ensures reliable handling in robotic operations. Special automation features on the plates include alignment fiducials, flanges and cutouts for positioning and embossing during microplate stacking routines.*

Evaporation Management: *Aurora pioneered the use of extra wells surrounding the imaged wells for use in evaporation control. An extra set of wells are populated with buffer or solvent to create a barrier to sample loss in the wells of interest. This feature is available in all Aurora plates (384, 1536, 3456).*

Low Evaporation Lids: *Lids are available with all microplates. Each lid fits snugly and dramatically reduces sample loss due to evaporation. A series of channels restricts airflow yet allows for gaseous exchange in the well array. This reduces the transfer of water vapor between the wells and the external environment, and results in lower evaporation of aqueous solutions or reduced water uptake for DMSO solutions.*

Private-Label, OEM and other Partner-Driven Designs

Please contact Aurora Microplates, Inc. for specific application-driven design opportunities. We are committed to high-quality, high-utility microplate design and production for the life-science marketplace.

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