



High-Performance Microplates

Aurora Microplates is 100% focused on making the highest quality, highest performing Microplates available. We use a pharmaceutical/medical grade polymer that qualifies for human injectable biological use, a “mold release free” insert injection molding process inside a Class 1 clean room and produce in ISO-13485 clean room facilities to deliver our Microplates in a timely fashion. We have great respect for the demands of modern discovery science and its’ ever-evolving search for more sensitive and subtle clues to understanding cause and effect. We believe that the best Microplates should be an invisible carrier for your work- not a contributor to variability in your data. We will continue to adhere to these principles as we operate, innovate and support your needs now and in the future.

Aurora® microplate products are constructed of 100% 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. 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. Aurora does not use mold-release agents in the manufacturing process. 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. Aurora plates are the only microplates recommended for use with instruments that heat plates to 100C.*

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 proteins and cells.*

Quality Commitment through Design and Manufacturing

Microplate Flatness and Film Thickness: *The flat-bottom design of Aurora microplates is 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 plate dimensionally and a 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. A key feature of Aurora plates is flatness which leads to significant improvement in optical imaging applications as mechanical refocusing is minimized. This becomes a very significant feature when 1000's of wells are being imaged.*

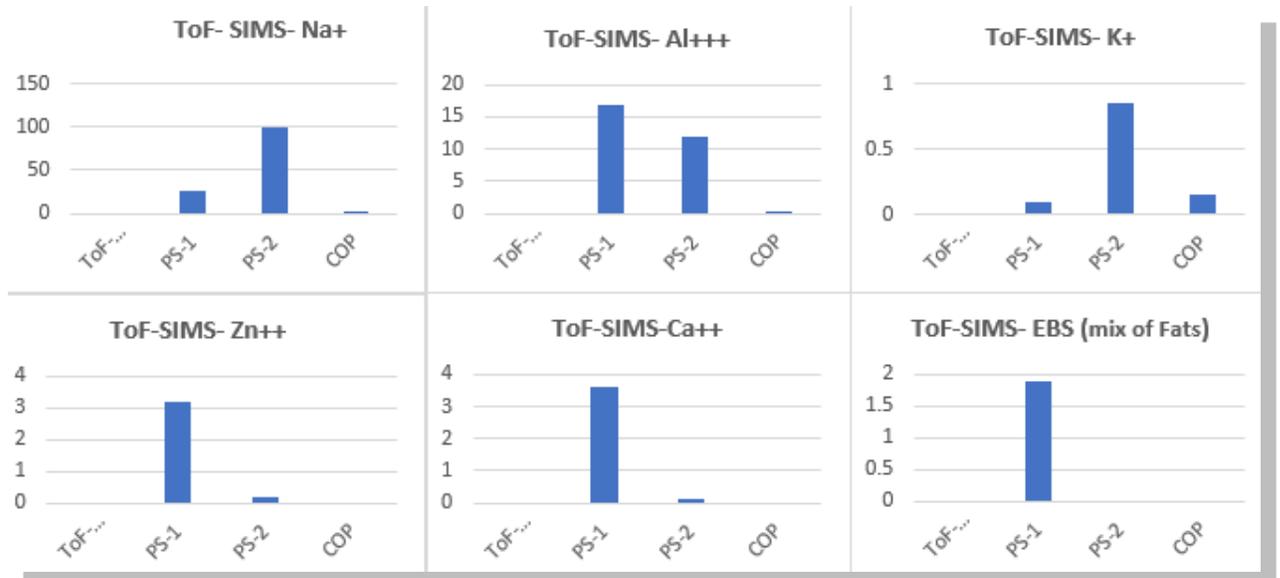
Evaporation Management: *Aurora pioneered the use of extra wells surrounding the imaged wells for use in evaporation control. An extra set of wells are populated with buffer or solvent to create a barrier to sample loss in the wells of interest. This feature is available in all Aurora plates (384, 1536,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

Composition Data Comparison with Polystyrene Plates

Mass Spec Data

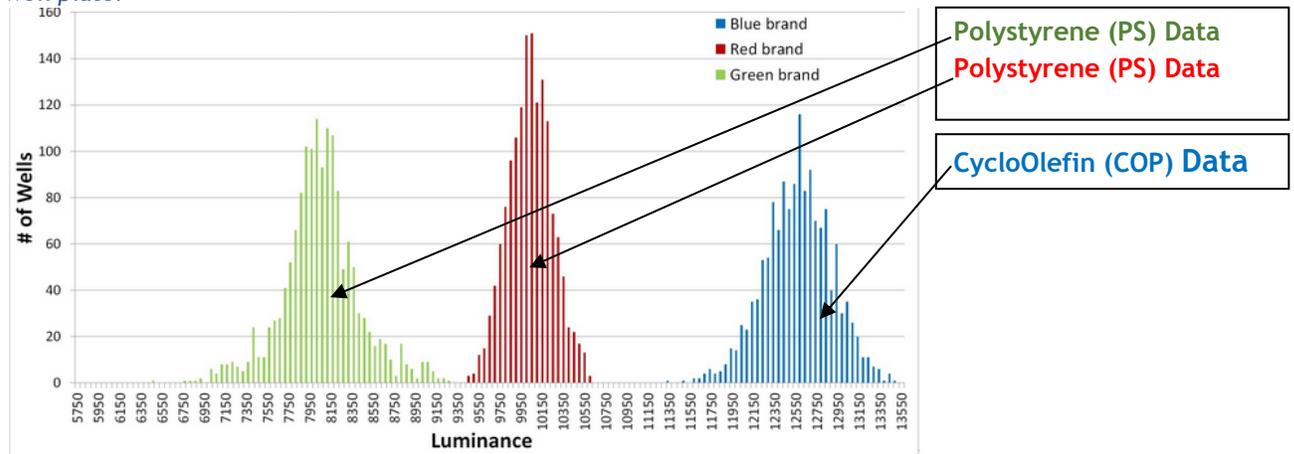
Data below show the presence of Sodium, Aluminum, Potassium, Zinc, Calcium and EBS- a combination of "Slip Agents" used as mold-release- present in Polystyrene Plates. These metals and slip-agents contribute to variable cell performance, and overall assay variability. These metals and slip-agents are not present in COP- thereby supporting the broad biocompatibility of Aurora Plates.



Assay Performance Data

CellTiter-Glo® Assay Data

Two versions of Polystyrene White Solid-Bottom 1536 well plates, and one version of CycloOlefin Polymer White Solid-Bottom 1536 well plate were tested in a CellTiter-Glo Luminescent assay- a homogeneous method of determining the number of viable cells in culture- based on quantitation of the ATP present- an indicator of metabolically active cells. In this assay, the COP plates enabled between 30% and 60% better cell growth/performance, and much more uniform and consistent growth across the entire 1536 well plate.



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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