



SPECIALTY COMPOUNDS FOR PIPETTES

TECHNICAL BRIEF

BENEFITS

- Low liquid retention
- Precise delivery of dosages
- Hydrophobic material
- Consistent conductivity
- High flow
- Easy-to-mold in high cavitation
- Low flash
- Low odor
- Global supply

APPLICATIONS

- Pipettes
- Automated liquid handling systems
- Micro wells
- Microtiters
- Plates
- Electronic packaging

For more information on our Medical Grade thermoplastics, visit www.rtpcompany.com/markets/healthcare



Our RTP 100 Series High Flow Conductive Polypropylene compound provided Capitol Vial with a viable solution for their CV1000 aliquot system. The easy-to-mold material provided an improved flow at a lower cost. For more information, visit www.rtpcompany.com/pipette-tips.

PIPETTE IMPROVEMENTS

In order to ensure pipette applications deliver the exact dosage, automated liquid handling companies must upgrade their design specifications. To help meet these new specifications, RTP Company has developed high flow thermoplastic compounds with consistent conductivity and liquid release capabilities.

Concentricity, straightness, length, and the ability to form a good seal are all essential physical properties that facilitate flawless pipetting in automated systems. RTP Company has conducted extensive design of experiments (DOE) on compounds for the pipette market. As a result, we have developed “best-in-class” conductive plastic compounds designed specifically for applications requiring inherently hydrophobic materials. These compounds flow into long, thin-wall sections and exhibit excellent conductivity on the pinpoint tips and fingers of the pipette proboscis.

HYDROPHOBIC FOR LOW LIQUID RETENTION (RELEASE PROPERTIES)

The ability of a conductive pipette tip to fully release the liquids that it transports is directly related to the surface energy of the material. The more hydrophobic the material (lower surface energy), the more a given liquid will bead up and release off the surface. Our RTP 100 Series Polypropylene (PP) compounds were developed for this type of application specifically. When tested by an independent laboratory, pipette tips made with these compounds demonstrated a 15% improvement in release properties over standard PP, greatly improving the consistency and accuracy in dosage amounts and also reducing cross contamination from liquid retention on the outside of the tip.

TIP SENSING ENHANCEMENTS (CONDUCTIVITY)

RTP Company's pipetting compounds have a surface resistivity of 10^4 ohm/square and a volume resistivity of less than 25 ohm-centimeter. This conductivity has shown to remain consistent throughout the length of the tip. Processors will see this consistency from box-to-box and lot-to-lot.



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SPECIALTY COMPOUNDS FOR PIPETTES

HIGH FLOW IMPROVEMENTS CYCLE TIME

High flow rates are important in enabling the filling of new tips that incorporate very tiny fingers to sense the liquid level. At 20 g/10 minutes (230 °C/2.16 kg), RTP Company's pipetting compounds have higher melt flows than other currently available materials.

RTP Company's high flow compounds easily fill the tips of the most demanding pipette applications without creating flash. For example, if a RTP 100 Series PP compound was used in the long thin walls of a 1000 µl pipettes, the transition from an 8 cavity tool to a 16 or 32 cavity tool would be an easy transition. In addition to exceptional flow, there is also potential to reduce processing costs through the improvement of cycle time.

REDUCE YOUR DOWN TIME

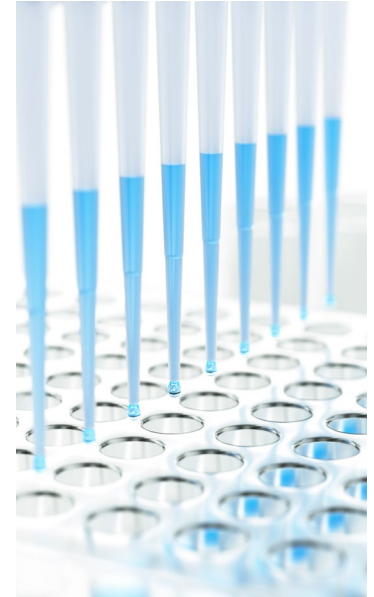
No excessive cleanup of the molds is required when using our clean-molding compounds.

LOW OR NO ODOR

RTP Company's pipette compounds are formulated using different raw materials that do not generate odors. Competitive products may emit foul odors that are especially noticeable in a sterile lab environment.

GLOBAL AVAILABILITY

The IVD market is global... and so is RTP Company! We have the ability to supply consistent formulations on a global basis and have excellent product availability. For more information, contact your local Sales Engineer by calling 1-507-454-6900 or emailing rtp@rtpcompany.com. For our latest applications, technical papers, and product information, visit www.rtpcompany.com.



SELECT PROPERTIES COMPARISON

Physical Property	RTP 199 X Series	Competitor A	Competitor B
Melt Flow (g/10 min)	20	3	14
Tensile Strength (psi)	3000	3000	3600
Notched Izod Impact (ft-lb/in)	2.6	3.5	1.7
Volume Resistivity (ohm-cm)	< 25	100 - 10000	< 100
Release Properties	Excellent	No Data	No Data



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