

Antimicrobial Polymers for Medical Devices

Reducing Hospital-Acquired Infections with Homogenous Antimicrobial Materials



Excellent Antimicrobial Efficacy & Mechanical Properties

Parker elastomers with select antimicrobial additives have shown excellent antimicrobial efficacy and biocompatibility while maintaining much of their mechanical properties and processing capabilities.

By working with our R&D scientists and polymer engineers, you can jump-start your development of HAI-resistant medical devices, reducing your time-to-market while leveraging Parker's material engineering expertise.



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Product Benefits:

- Retain virtually all mechanical and physical properties of conventional (non-antimicrobial) polymers
- Reduce Time-To-Market: Start with polymers that have proven ISO 22196 antimicrobial efficacy and ISO 10993 biocompatibility
- Delegate the esoteric processing of antimicrobial materials and ordered finished components from Parker's ISO 13485 certified production facilities
- Custom antimicrobial polymer engineering for your device's preferred base polymers, aesthetics and functionality

Antimicrobial Applications:

- Vascular Access Devices: Catheters, Injection Systems, Needleless Connectors, etc.
- Fluid Management Devices: IV Systems & Bags, Valves, Tubing, etc.
- Device/Instrument Housings
- Airway Management Devices: Endotracheal & Tracheotomy Tubes, etc.
- Laparoscopic Instruments
- Wound Dressings
- Class I, II and III Medical Devices that come in contact with patients or their caregivers
- And many other applications



ENGINEERING YOUR SUCCESS.

Parker Antimicrobial Polymers for Medical Devices

Parker's antimicrobial/polymer combinations retain much, if not all, of their mechanical properties when compared to non-antimicrobial materials, and they have demonstrated both biocompatibility and 4+ log antimicrobial efficacy.

Parker offers a variety of antimicrobial compounds, both silver- and non-silver-based:

- Butyl Rubber (IIR)
- Ethylene Propylene Diene Monomer (EPDM)
- Polyisoprene (IR)
- Polyurethane (TPU)
- Silicones (LSR and HCR)

Design Considerations for Use of Antimicrobial Polymers In Medical Devices

For best results (efficacy, costs, etc.) and to speed up their development stage, medical

device manufacturers are urged to be as specific as possible in their initial design parameters so as to aid in the successful selection of antimicrobial materials:

- 1) End-Use Environment:** Is the device in a dry or wet environment?
- 2) Product Life:** How long will the device be used? 24 hours? Three days? Three weeks? Duration of use can impact biocompatibility and antimicrobial efficacy in some applications.
- 3) Appearance:** Is a certain color required? Transparency? Translucency?
- 4) Functionality Requirements:** What is the intended function of the device? Materials can be chosen and/or tailored to support required performance while providing the antimicrobial properties desired.

Why Parker?

Parker's Engineered Materials Group can jump-start your HAI-resistant device development process.

High Performance Antimicrobial Elastomeric Compounds

- Help mitigate the spread of HAIs while delivering the mechanical/physical properties required for your applications.

Reduced Time-To-Market

- Start your device design process with polymers that have proven ISO 22196 antimicrobial efficacy and ISO 10993 biocompatibility.
- Use a Fortune 500 manufacturer with decades of materials science expertise for critical medical applications.
- Receive finished components from ISO 13485 certified production facilities, ready for integration into your medical devices.

Custom Solutions

- Allow our scientists and polymer engineers to aid you in the selection of antimicrobial materials to meet the aesthetic and functionality requirements for your specific device applications.
- Leverage our Finite Element Analysis (FEA) expertise to provide an accurate visualization of application performance and virtual prototype evaluation, while reducing the overall costs of program development.
- Utilize our molding simulation capabilities for thermoplastic materials to predict costly issues before they occur.
- Ask about our broader capabilities: Parker provides medical device design and manufacturing support from concept to production. From material formulation and processing, to full medical device fabrication and assembly, to packaging and sterilization support, Parker can assist you every step of the way.

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