Medical Tubing

Your Solution Supplier
for Medical Devices

Biesterfeld

Advanced Material Solutions for Medical Tubing and Catheters Assemblies

Biesterfeld – Your Partner for Advanced Medical Tubing and Catheter(s) Assemblies: as critical medical devices, they require precision, reliability, safety, and regulatory compliance. At Biesterfeld, we offer a tailored portfolio of materials for medical tubing and catheters assemblies.

Why Biesterfeld?

Biesterfeld offers flexibility of choices depending on your needs and position on the value chain, whether you are an OEM, a CDMO, a CMOs or a design house: from raw materials to finished parts, with the support of a dedicated healthcare product line and market experts (that work hand in hand with a dedicated healthcare quality and regulatory (Q&R) team, Biesterfeld. helps customers accelerate innovation with confidence.

In addition to raw materials, we supply **ready-to-use extruded tubings** made from PU, PEEK, etc, and other medical-grade polymers. Our offering also includes braided shafts and a variety of **custom components for catheter assembly**, providing engineers and manufacturers with reliable, production-ready solutions for both prototyping and high-volume manufacturing.

Further, we provide a comprehensive range of **medical-grade adhesives** suitable for the development and production of catheters and complex devices. Our portfolio covers **UV-curable adhesives**, **cyanoacrylates, (1K/2K) epoxies**, and other chemistries, all compliant with medical standards and optimized for bonding diverse polymers and device components.

As the link between material suppliers and the device industry, Biesterfeld places a strong focus on understanding key market needs. These insights enable us to create comprehensive solution portfolios and provide customers with reliable, expert material guidance.

The Catheter Market Trends

Catheters are a fast developing market driven by aging populations, due to chronic diseases, evolving technologies for preventive examinations (cardiovascular, urological, renal, diabetes), growth of minimally invasive procedures, homecare demand, and stricter regulatory expectations with restrictions on certain plasticizers (DEHP) and substances of concern.

- Urinary and long term catheters move toward softer, more comfortable materials.
- Home care patients expect easier insertion and less irritation.

Catheter associated infections remain a major clinical and cost challenges. Hospitals seek solutions to reduce biofilm formation.

Impact on Solution Choices

On the Product side, catheters are becoming thinner, more flexible, and more versatile. Multi lumen and steerable catheter systems are increasing, as well as multilayer constructions (e.g., PU + fluoropolymer liners).

On the material side,

- Increased use of silicone for indwelling catheters, TPU and soft TPEs and high-purity polyolefins for disposable catheters with low friction and soft feel.
- Shift away from HDPE based PVC or PVC at all.
- Use of inherently low friction materials such as silicone and PTFE liners and rising demand for coatings (hydrophilic, antimicrobial, heparin based), enabling pain-free insertion, minimizing tissue irritation and lowering risks of infections
- Use of PEEK technology for its high thermal stability, radiolucency and push-ability at very small diameters

On the supplier side: Preference for durable suppliers with medical change-control policies and global supply capabilities.

Chemical Resistance

Biocompatibility

Continuous use up to ~250°C

High Strength and Stiffness

Abrasion-resistant

Excellent Creep Resistance

Flexible from -40 to +125 °C

No Kinking

Compatible with Autoclave Sterilization

Continuous use up to ~250°C

Stable under repeated Sterilization Cycles

Resistant to Cuts

Biesterfeld Material Recommendations for Medical Tubing and Catheters – Medical Polymers

Material Family	Material / Supplier	Typical Use in Medical Tubing & Catheters
High Performance Polymers	PEEK – Ketaspire® (Syensqo), Luvocom® (Lehvoss)	High-strength catheter shafts, minimally invasive surgical devices, structural catheter components requiring excellent chemical resistance, sterilization stability and biocompatibility.
	PAEK – AvaSpire® (Syensqo)	Metal replacement in catheter assemblies, high-pressure tubing connectors and components requiring improved flexibility compared to PEEK while maintaining high performance.
	PPS – Ryton® (Syensqo)	Precision molded catheter housings, connectors and fluid management components with excellent dimensional stability and chemical resistance.
	PPSU – Radel® (Syensqo)	Reusable medical device components, manifolds and catheter accessories requiring repeated steam sterilization and high impact resistance.
	PSU – Udel® (Syensqo)	Transparent medical components, connectors and fluid-contact parts where hydrolytic stability and toughness are required.
Engineering Polymers	PC – Wonderlite® (Chimei), LG Chem Medical PC	Transparent tubing connectors, drip chambers, diagnostic device housings and catheter components requiring clarity, toughness and gamma sterilization compatibility.
	TPC/COPE – Hytrel® (Celanese)	Flexible medical tubing, kink-resistant catheter shafts and PVC alternatives for applications requiring flexibility, chemical resistance and soft-touch performance.
	TPU – Elastollan® (BASF)	Soft catheter tubing, wound care tubing, wearable medical tubing and applications requiring flexibility, abrasion resistance and patient comfort.
	TPV – Santoprene® (Celanese)	Soft-touch grips, seals, overmolding applications and flexible tubing components requiring elastomeric behavior and good processability.
	POM – Delrin® (DuPont)	Precision catheter handles, injection components and mechanical parts requiring low friction, dimensional stability and fatigue resistance.
	EVA – Ateva® (Celanese)	Flexible tubing, medical bags and soft fluid-transfer applications requiring softness, transparency and flexibility at low temperatures.
Standard Polymers	LDPE/PE – Eltex® MED (Ineos)	Standard medical tubing, fluid transfer lines, packaging and disposable medical applications requiring good processability and regulatory support.

BASF We create chemistry · Celanese The chemistry inside innovation™ · Delrin® · INEOS · LEHVOSS Group · Manufactured by LG Chem · SYENSQO

Biesterfeld Material Recommendations for Medical Tubing and Catheter Assemblies – Medical Specialties

Silicone Elastomers	DuPont Liveo™	LSR (Liquid Silicone Rubber) and HCR (High Consistency Rubber), Durometer 20-70 for the extrusion of silicone tubing & injection moulding of silicone parts
Silicone Tubing		Ready to use tubing for medical applications: Liveo™ RX-50, -65, -80 Tubing: Low to high pressure / vacuum in 3 durometers: RX-50, RX-65 and RX-80 Medical Grade Tubing
		Liveo™ RX Pump Medical Grade Tubing: for critical medical device applications where pyrogenic tests on tubing are mandatory, I;e. blood bypass.
Silicone Fluids		Liveo™360 Medical Fluids (20-12500 cSt.) for device lubrication as in e.g catheter guidewires
RTU parts & CMO services	Spectrum Plastics Group	Individualized extrusion for building catheter parts made of e.g. PEEK, PU,..
		Silicone- & Thermoplastic-based individual parts for catheter assembly.
		Full or partial assembly services & packaging in ISO 13485 certified US & EU- based manufacturing facilities
Structural adhesives	Dymax UV/LED-curing adhesives	Dymax CTH light-curable adhesives feature excellent adhesion to substrates used in catheter assembly as e.g. ABS, nitinol, PA, glass, PEEK, PU, and PC
	Bostik Primers & Activators	Surface preparations & bonding Aids for difficult to bond substrates
	Bostik Adhesives	UV-Cyano, 1&2K Cyanoacrylates, HM-PUR, 2K Epoxy, HM-PA
Engineered Fluid Dispensing	Nordson EFD	Semi-automated and robot-assisted fluid dispensing systems (table-top dispensers, valve-control/volumetric/jet-valve systems) & Consumables (cartridges, syringe barrels, dispense tips & needles, etc.)

In addition, Biesterfeld supports its customers with the development and supply of ready to use medical tubing and customized finished catheter parts and assemblies with a network of medical CDMO.

› Whether micro, braided and coiled, or steerable and/or deflectable catheters, with radio-opaque features, your needs become our project.

› Our key ecosystem partners including DuPont Liveo, Dupont Spectrum, Donnatelle offer scalable full-service package from design and development to prototyping and final scale-up.

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