Advanced material solutions for medical syringes





Biesterfeld - Your Partner for Medical Polymers & Specialties

Medical syringes are critical medical devices requiring precision, safety, and regulatory compliance. At Biesterfeld, we offer a tailored portfolio of materials for both standard and pre-filled syringes, including high-performance polymers from INEOS (Eltex[®] MED), Vivion[®] COC, Santoprene[™] MED, Exxon[™] halobutyl, Liveo[™] medical silicones and DYMAX[®] medical adhesives.

Recommended Materials & Functional Roles

Component	Material	Function & Benefits
Barrel	Polypropylene (Eltex® MED)	High transparency, dimensional stability, chemical resistance, gamma sterilizable
	Vivion® COC (for prefilled)	Superior moisture barrier, high purity, excellent optical properties
Plunger	Polypropylene (Eltex® MED)	Rigid, durable, good processability, biocompatibility
Plunger Seal	Santoprene™ MED (TPE)	Soft sealing, high elasticity, low compression set, medical regulatory compliance
Needle Hub	Polypropylene or Polycarbonate (PC)	High mechanical strength, compatibility with Luer-lock, tight dimensional control
Lubrication	Liveo™ medical lubricant coatings	Excellent lubrication and release characteristics, DMF, USP NF/Ph.Eur. compliant
Bonding	DYMAX® LED/UV/Visible light curing adhesives	Ideal for high-speed, high-volume automated syringe assembly, ISO 10993 compliant
Packaging (if required)	PETG (e.g. Skygreen®)	Transparent, impact-resistant trays (FDA/EU food grade – suitable for medical use)
Plungers, Stoppers	Exxon™ halobutyl	Low permeability, Low extractables and leachables



Why These Materials?

Eltex® MED grades

offer long-term supply security, regulatory support (ISO 10993, USP Class VI), and excellent processability for high-volume injection molding.

Vivion® COC is ideal for pre-filled syringes, offering barrier protection, high purity, and compatibility with a wide range of APIs (including biologics).

Liveo™ medical lubricant coatings

provide low-friction syringe high-quality silicone coating materials for glass, plastics, rubber and metals

Santoprene™ MED

ensures flexible sealing while withstanding sterilization and storage without material degradation.

PETG materials,

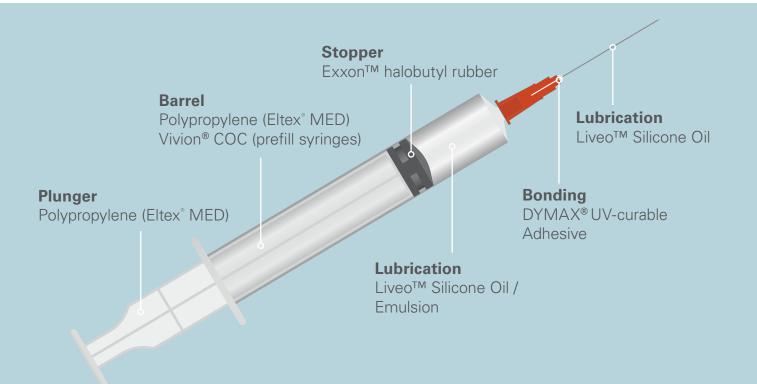
Exxon™

halobutyl rubber
offers low permeability
as well as low exctractables
and leachables, making it
ideal for applications like

while not specifically ISO 10993 certified, can be used in non-drug-contacting rigid packaging due to their clarity and resistance.

DYMAX® LED/UV/Visible light curing adhesives

medical-grade adhesives for needle and syringe assembly Formulated to bond difficult substrates as PP, COC/COP or PC and glass





Published by:

Biesterfeld SE

Ferdinandstrasse 41 20095 Hamburg www.biesterfeld.com

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