Plastics Compatibility with Sterilization Methods

Polymer	Polymer Abbreviation	Autoclave	Dry Heat	Ethylene Oxide (EtO)	Gamma Irradiation	Electron Beam
Biopolymers						
Poly(L-lactide)	PLLA	Fair	Good	Good	Good	Good
Polylactic acid	PLA	Poor	Fair	Good	Good	Good
Polyhydroxybutyrate	PHB	Poor	Poor	Good	Fair	Fair
Polyglycolic acid	PGA	Good	Good	Good	Good	Good
Poly(lactic-co-glycolic acid)	PLGA	Poor	Poor	Good	Fair	Fair
Polycaprolactone	PCL	Fair	Good	Good	Good	Good
Elastomers						
Silicones	VMQ, PMQ, PVMQ	Good	Good	Good	Good	Good
Urethane thermoplastic elastomer	TPU	Poor	Fair	Good	Good	Good
Copolyester thermoplastic elastomer	TPC	Poor	Good	Good	Good	Good
Polyamide thermoplastic elastomer	TPA	Poor	Poor	Good	Good	Good
Styrenic thermoplastic elastomer	TPS	Poor	Poor	Good	Good	Good
Olefinic thermoplastic elastomer	TPO	Poor	Fair	Good	Good	Good
Fluoropolymers						
Polytetrafluoroethylene[1]	PTFE	Fair	Fair	Good	Poor	Poor
Fluorinated ethylene propylene	FEP	Good	Good	Good	Fair	Fair
Perfluoro alkoxy	PFA	Good	Good	Good	Good	Good
Ethylene chlorotrifluoroethylene	ECTFE	Good	Good	Good	Good	Good
Ethylene tetrafluoroethylene	ETFE	Good	Good	Good	Good	Good
Polyvinyl fluoride	PVF	Good	Good	Good	Good	Good
Polyvinylidene difluoride	PVF2	Good	Good	Good	Good	Good
High-temperature thermoplastics						
Polysulfones	PSU	Good	Good	Good	Good	Good
Polyphenylene sulfide	PPS	Good	Good	Good	Good	Good
Liquid crystalline polymer	LCP	Good	Good	Good	Good	Good
Polyetherimide	PEI	Fair	Fair	Good	Good	Good
Polyamide-imide	PAI	Fair	Fair	Good	Good	Good
Polyetheretherketone	PEEK	Good	Good	Good	Good	Good

[1]*Radiation stable grades need to be used for radiation sterilization.*

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Plastics Compatibility with Sterilization Methods

Polymer	Polymer Abbreviation	Autoclave	Dry Heat	Ethylene Oxide (EtO)	Gamma Irradiation	Electron Beam
Polyamides						
Nylon 6, Nylon 66	PA6, PA66	Fair	Fair	Good	Fair	Fair
Aromatic	AP	Good	Good	Good	Good	Good
Nylon 12, 6/12	PA12	Poor	Poor	Good	Fair	Fair
Polyesters						
Poly butylene terephthalate	PBT	Fair	Fair	Good	Good	Good
Poly ethylene terephthalate	PET	Poor	Poor	Good	Good	Good
Copolyesters		Poor	Poor	Good	Good	Good
Polyolefins						
High-density polyethylene	HDPE	Poor	Poor	Good	Good	Good
Low-density polyethylene	LDPE	Poor	Poor	Good	Good	Good
Ultrahigh molecular weight polyethylene	UHMWPE	Poor	Poor	Good	Good	Good
Polypropylene[1]	PP	Good	Fair	Good	Fair	Fair
Polypropylene copolymers	PPC	Good	Fair	Good	Fair	Fair
Cyclo olefin copolymer	COC	Fair	Fair	Good	Good	Good
Polyvinyl chloride plasticized[1,2]	PVC	Fair	Fair	Good	Good	Good
Polyvinyl chloride unplasticized[1,2]	PVC	Poor	Poor	Good	Fair	Fair
Polystyrene / Styrenics						
Polystyrene	PS	Poor	Poor	Good	Good	Good
Acrylonitrile butadiene styrene copolymer (Abs)	ABS	Poor	Poor	Good	Good	Good
Styrene-acrylonitrile copolymer (San)	SAN	Poor	Poor	Good	Good	Good
Acrylonitrile styrene acrylate	ASA	Poor	Poor	Good	Good	Good
Methacrylate acrylonitrile butadiene styrene copolymer	MABS	Poor	Poor	Good	Good	Good
Styrene-butadiene copolymer	SBC	Poor	Poor	Good	Good	Good
Acrylics[1,2]	PMMA	Poor	Poor	Good	Good	Good
Polycarbonates[1,2]	PC	Fair	Fair	Good	Good	Good
High heat polycarbonates	PC	Good	Good	Good	Good	Good
Polyurethanes	PU, PUR	Poor	Poor	Good	Good	Good
Acetals	POM	Good	Good	Good	Poor	Poor

[1]Radiation stable grades need to be used for radiation sterilization.
[2]PVC, acrylics and PC require corrective tint to compensate for discoloration.

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