



EASTMAN



**Eastman Tritan™
copolyester for renal
treatment device applications**

(hemodialyzers, hemoconcentrators, and hemofilter housings)

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Meeting the challenge

Microcracks in renal devices are not only an economic challenge for hospitals, clinics, and device manufacturers, but also a comfort and safety issue for the patient.

Typically, renal device housings can be compromised by tapping the device to remove air, mishandling or dropping the device, or applying aggressive chemical disinfectants. A tough and clear material that offers enhanced environmental stress cracking (ESC) resistance can help reduce microcracks and breakage.

For renal device brand owners and manufacturers, a material that does not require annealing and has excellent chemical resistance with good processability can help reduce overall system cost.

Clarity of the renal device housing is crucial for the patient's peace of mind. Sterilization can significantly impact device clarity.

Choosing the right material

Tough, clear, and durable Eastman Tritan™ copolyester is a superior alternative to polycarbonate (PC) for acute and chronic renal device housing applications. Tritan offers excellent resistance to common substances found in the renal treatment environment.

The glass-like transparency of Eastman Tritan™ copolyester delivers quality and provides peace of mind for healthcare professionals and patients. The clarity, color, and functional integrity of Tritan are not compromised after sterilization by gamma irradiation or e-beam radiation.

Striking the balance

Eastman Tritan™ copolyester is an innovative, new-generation copolyester that offers a balance of properties for renal device housing applications:

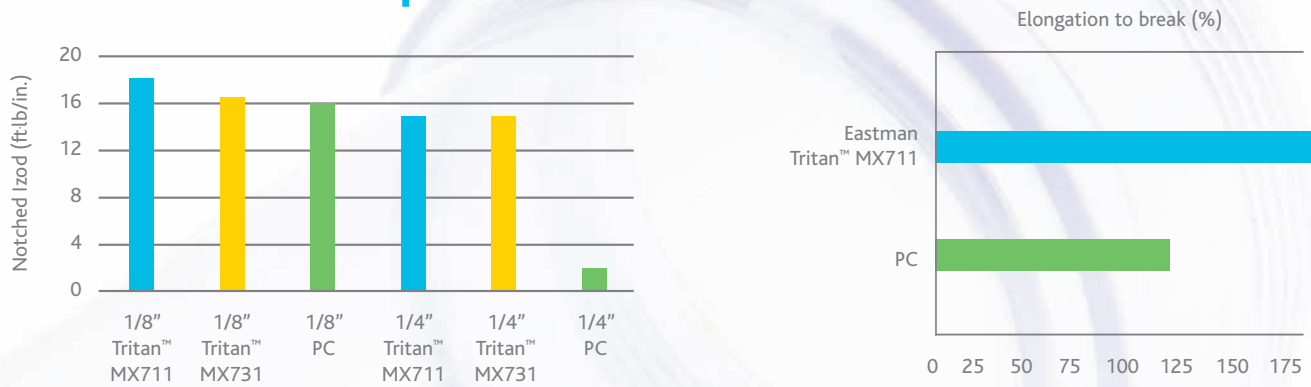
- Excellent resistance to aggressive chemicals and disinfectants
- Color and property retention after gamma and e-beam sterilization
- Regrind provides excellent property retention
- Shrinkage similar to PC — ability to use PC tooling with minimal or no modification required
- Sustainable — BPA, halogen, and phthalate-free
- No annealing required — low residual stress and excellent chemical resistance provides chemical resistance without annealing

Chemical resistance based on break elongation values

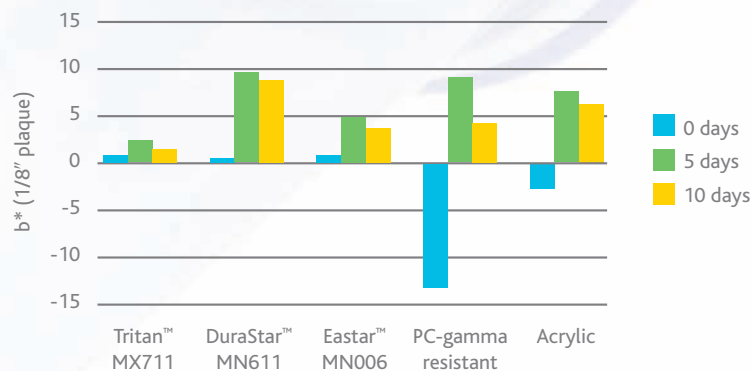
Disinfectant	Tritan™ MX711 copolyester	Tritan™ MX731 copolyester	General-purpose medical-grade PC	High-flow medical-grade PC
Formaldehyde 4%	4	3	2	2
Glutaraldehyde 0.8%	4	3	2	2
Peracetic acid 3%	4	3	2	2
Bleach	4	3	2	2
Virex TB	4	3	2	2
IPA	4	2	3	1
	4 (0, 0.5%)	3 (0, 0.5%)	2 (0, 0.5%)	2 (0, 0.5%)
Phenol	3 (≥1.0%)	3 (≥1.0%)	4 (≥1.0%)	3 (≥1.0%)
Lipid	4	3	3	2
Renalin	4	3	2	1

4 = highest
1 = lowest

Better impact and toughness — Notched Izod impact



Excellent color stability — Gamma sterilization



Heat aging — Eastman Tritan™ MX711 copolyester

Test condition	Tensile properties			1/8" Izod	
	Yield (MPa)	Break (MPa)	% Elongation	20 mil notch radius J/m	% Ductile
Initial	41.9	50.0	162	1117	100
2 h, 60°C	43.1	50.7	159	1102	100
20 h, 60°C	44.5	48.7	144	1099	100
200 h, 60°C	46.7	50.5	148	1087	100

The higher T_g of Eastman Tritan™ copolyester allows better stability during cure of potting compound and drying of fiber bundles, as well as stability during shipping and storage.

Contact Eastman today for more information about Eastman Tritan™ copolyester and how Eastman helps you find the best solutions for your medical devices.



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