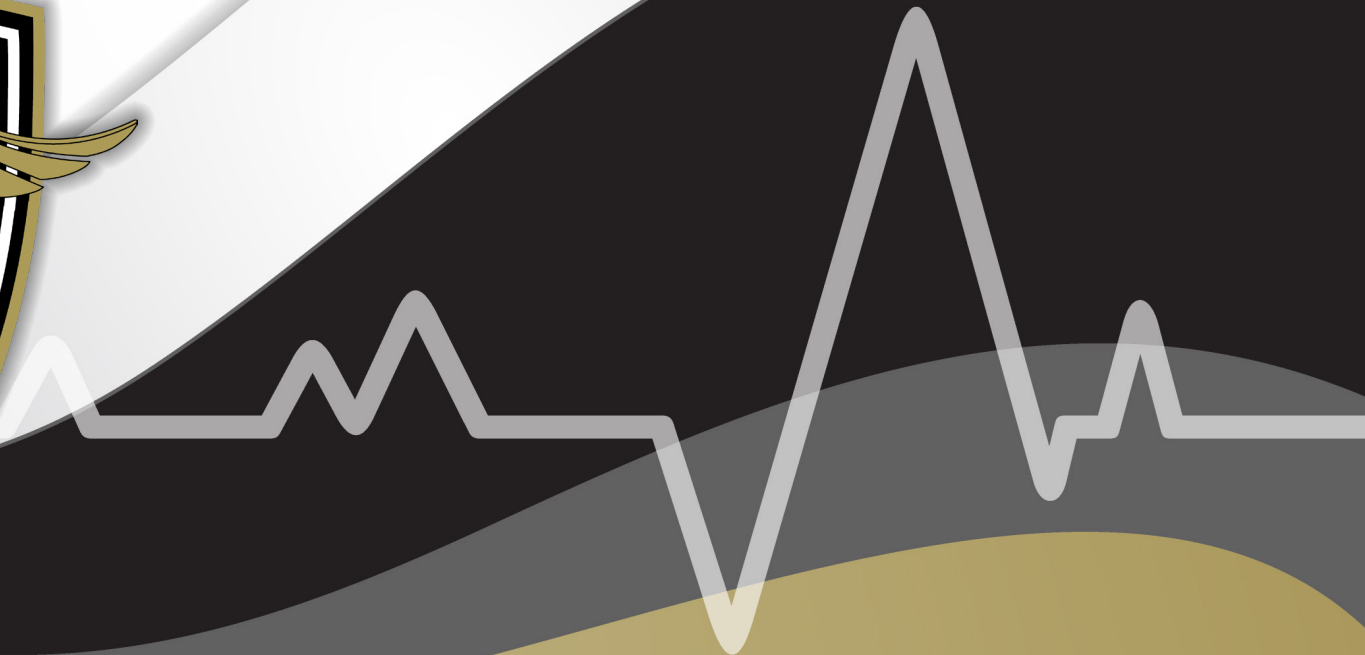


ENTE**TEC**

INTRODUCING RAVAGO
MedArmor
EXCLUSIVELY AT ENTEC

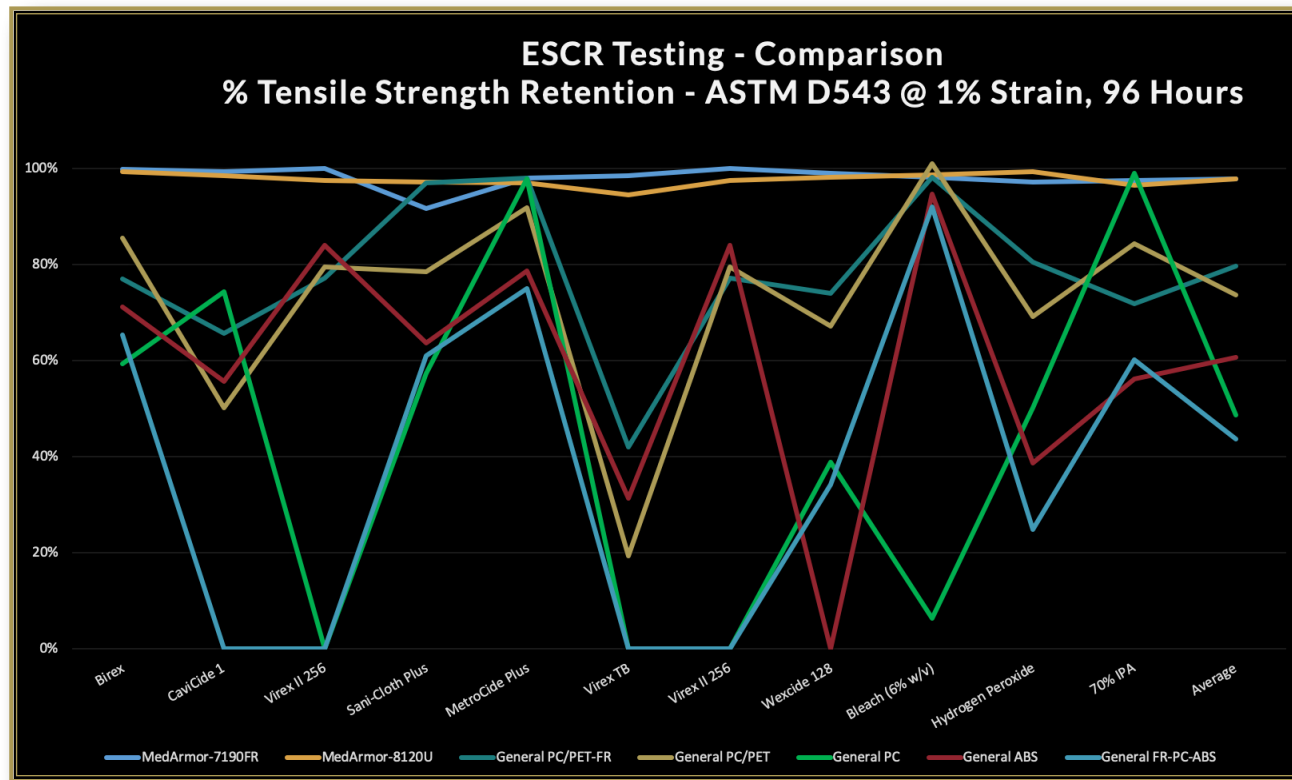
Unique Polymers Specifically Engineered to Resist Medical Disinfectants



Reducing the incidence of Healthcare Associated Infections (HAI) by sterilizing medical equipment with today's caustic chemical disinfectants has created a need to rethink this critical material selection. These chemical disinfectants attack molded-in stresses, causing cracking, crazing, loss of impact strength and eventually premature device failures. Available exclusively through Entec, Ravago's MedArmor line of resins have been specifically engineered to resist this new generation of chemical disinfectants with proven efficacy.

In addition to exceptional impact resistance and toughness, the MedArmor line of polyester copolymers and alloys provide exceptional chemical resistance versus traditional PC, ABS and PC/ABS.

Graphic 1: Shows MedArmor 7190FR and 8120U performance vs. typical PC, ABS, and PC/ABS.



MedArmor 7190 and 7190FR are high-impact graft modified polyester copolymers with unique properties. It's a truly crystalline material with amorphous properties. The MedArmor 7190FR is the **only** non-halogenated, non-brominated medical material with a VO UL 94 listed flame rating.

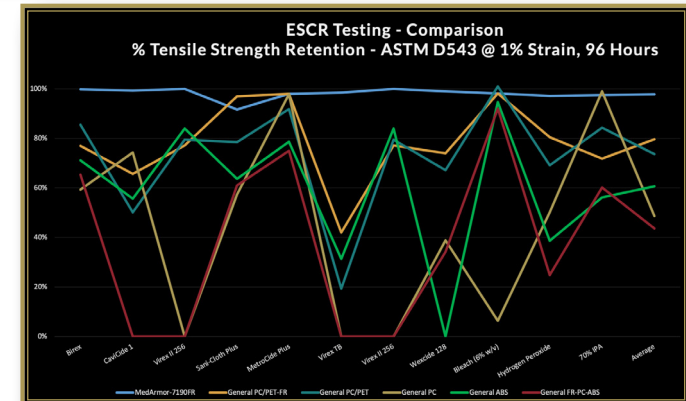
- The only non-brominated, non-halogenated medical material with VO UL94 listed flame rating
- High Elongation
- Exceptional Chemical Resistance
- Similar shrink to PC, ABS and PC/ABS, making it a suitable replacement for existing molds
- Extreme Impact Resistance
- Ease of manufacturing in Injection Molding, Extrusion and Blown Film
- Extreme Toughness

RAVAGO MEDARMOR 7190 & 7190FR TECHNICAL DATA

ASTM & ISO Properties	Physical		Mechanical				Impact		Rheological
	Density	Mold Shrinkage	Tensile Modulus	Tensile Strength	Elongation @ Break	Flexural Modulus	Gardner Impact (23°C)	Gardner Impact (-20°C)	Melt Index
Unit	g/cc	%	psi	psi	%	psi	in-lb.	in-lb.	g/10 min.
Test Method	ISO 1183	ASTM D955	ASTM D638	ASTM D638	ASTM D638	ASTM D638	ASTM D5420	ASTM D5420	285°C, 2.16kg
MedArmor 7190FR	1.27	0.6	314,200	7,180	140	357,800	600+ (ductile fail)	600+ (ductile fail)	12
MedArmor 7190	1.29	0.6	325,720	7,640	350	336,000	>500	>290 @ -40°C	16

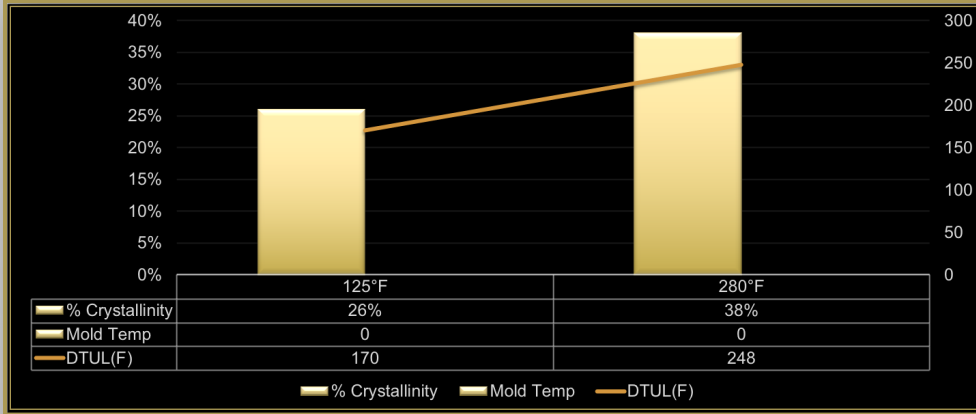
Under 1% strain for 96 hours, MedArmor 7190FR has exceptional chemical resistance compared to traditional PC, ABS, PC/ABS and more chemically-resistant PC/PET against 11 of the most challenging chemical disinfectants.

Graphic 2 to the right: Shows MedArmor 7190FR performance vs. PC/PET, PC, ABS and PC/ABS

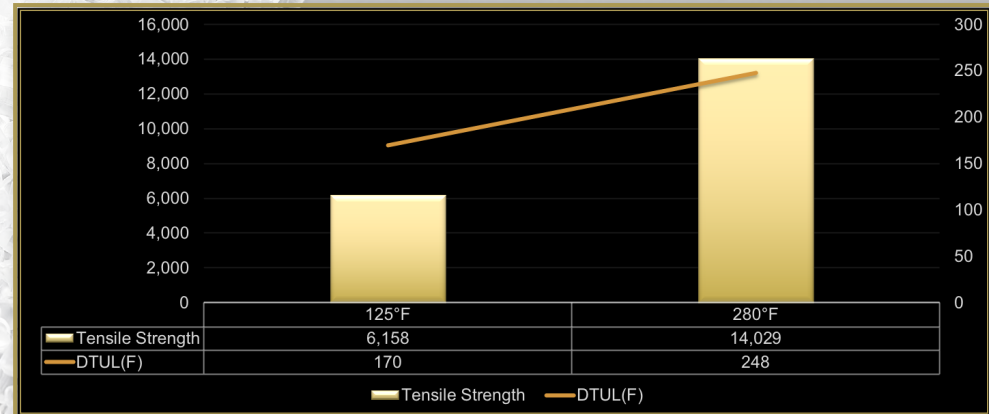


MedArmor 7190 and 7190FR is a truly crystalline material but with amorphous properties. Varying the processing temperatures, particularly the mold temperatures, make it very easy to affect the crystallinity.

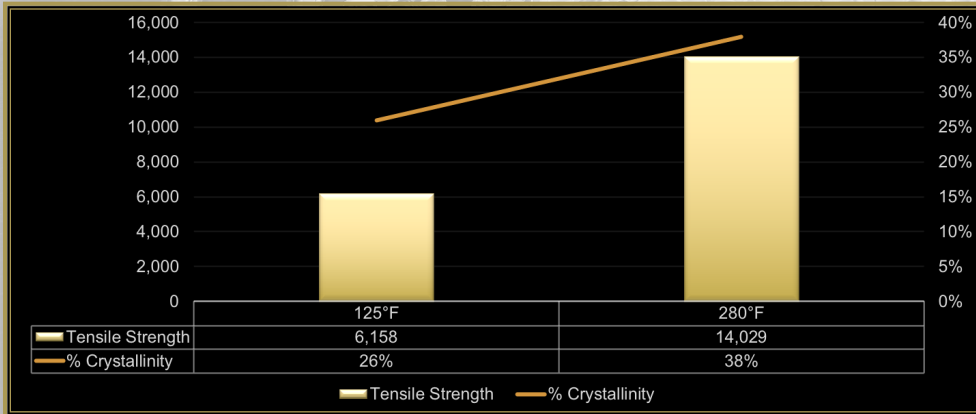
DTUL vs. Crystallinity vs. Mold Temp



DTUL vs. Tensile vs. Mold Temp



Tensile vs. Crystallinity vs. Mold Temp



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