

CHEMISTRY THAT MATTERS™



LNPT™ ELCRES™ CRX COPOLYMER RESINS

SABIC'S SPECIALTIES BUSINESS



LNPT™ ELCREST™ CRX COPOLYMER RESINS

IMPROVED CHEMICAL RESISTANCE MATERIALS FOR MEDICAL ENCLOSURES AND HOUSINGS

With patient safety at the forefront, the healthcare industry is mobilizing to address the concerns of increasing patient infections associated with medical care, known as hospital-acquired infections (HAIs). To help meet this challenge, medical equipment and high touch surfaces in patient care settings are repeatedly wiped down with increasingly aggressive chemical disinfectants.

NEED FOR IMPROVED CHEMICAL RESISTANCE

Manufacturers of medical equipment for patient monitoring, imaging, diagnostic, fluid and medication delivery need materials that offer improved chemical resistance to the more aggressive disinfectants used today in healthcare settings.

CHEMICAL RESISTANCE DATA – ENVIRONMENTAL STRESS CRACKING (ESC) PERFORMANCE

Compared to traditional PC, ABS, PBT and co-polyester resins and blends — which are potentially incompatible with highly aggressive disinfectants such as quaternary ammonium compounds — the new LNP ELCRES CRX resins can help prevent stress cracking and mitigate crack propagation.

NEW SOLUTION OFFERING

SABIC's LNP ELCRES CRX resins leverage unique copolymer technology to provide improved chemical resistance for healthcare devices and equipment, compared to existing materials used such as PC/ABS, PC/PBT, or co-polyester resins and blends.

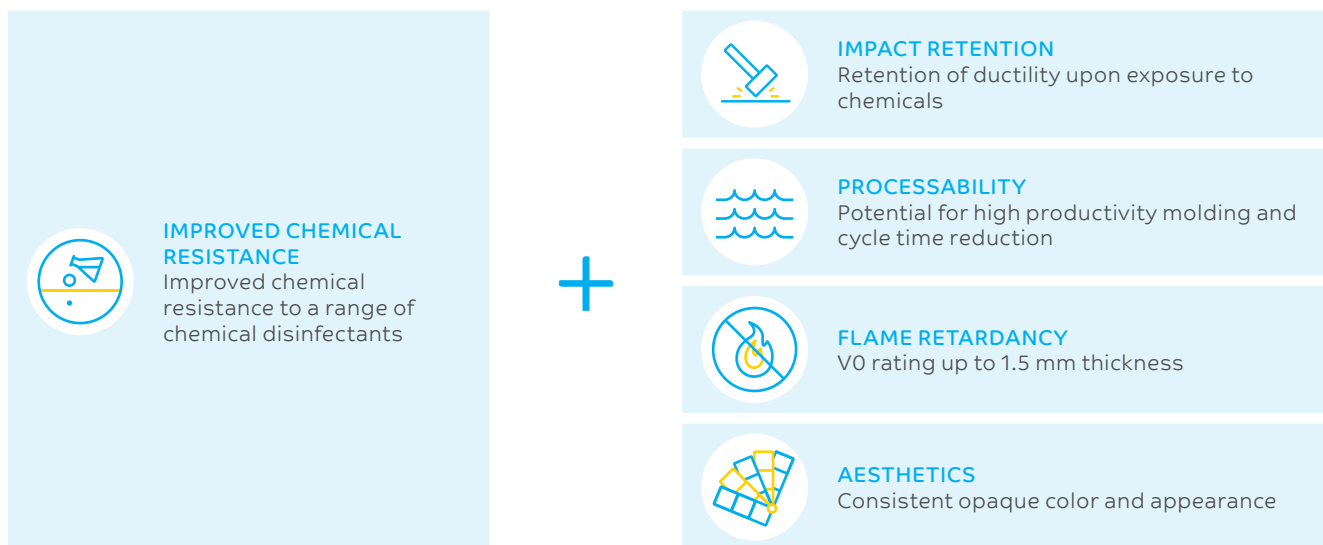


PLASTICS DETERMINATION OF RESISTANCE TO ENVIRONMENTAL STRESS CRACKING (ESC) METHOD

SABIC ESC Method: per ASTM D543		Mold shrinkage, flow		Exposure days		SANI-CLOTH® Bleach		SANI-CLOTH® HB		SANI-CLOTH® AF 3		SANI-CLOTH® plus		Diversey Oxivir® TB		Trichloroacetic Acid		Cavicide® CaviWipes1		SANI-CLOTH® prime		Virex® II 256		Virex® TB		CIDEX® OPA Solution		Ethanol		<div>SABIC's ESC method evaluates retention of tensile properties vs. control for up to 7 days.</div> <table><tr><td>Compatibility criteria color rating</td><td>Tensile stress at yield retention σ_y (%)</td><td>Tensile elongation at break retention E_b (%)</td></tr><tr><td>Compatible</td><td>> 90</td><td>80 – 139</td></tr><tr><td>Marginal</td><td>80 – 89</td><td>65 – 79</td></tr><tr><td>Not compatible</td><td>< 79</td><td>< 64 or > 140</td><td></td></tr></table> <div>This information should be viewed as a screening test. End users are responsible for determining the suitability of these products for their application requirements.</div>		Compatibility criteria color rating	Tensile stress at yield retention σ_y (%)	Tensile elongation at break retention E_b (%)	Compatible	> 90	80 – 139	Marginal	80 – 89	65 – 79	Not compatible	< 79	< 64 or > 140	
Compatibility criteria color rating	Tensile stress at yield retention σ_y (%)	Tensile elongation at break retention E_b (%)																																										
Compatible	> 90	80 – 139																																										
Marginal	80 – 89	65 – 79																																										
Not compatible	< 79	< 64 or > 140																																										
Strain level: 1% strain		Exposure condition: 23 °C		Application: Saturation method		$\sigma_y E_b$		$\sigma_y E_b$		$\sigma_y E_b$		$\sigma_y E_b$		$\sigma_y E_b$		$\sigma_y E_b$		$\sigma_y E_b$		$\sigma_y E_b$		$\sigma_y E_b$		$\sigma_y E_b$		$\sigma_y E_b$		$\sigma_y E_b$																
PRODUCT		%		7		7		7		7		7		7		7		7		7		7		7		7		7																
PC/ABS		0.6		7		●●		■■		■■		■■		▲■		●▲		-		-		■■		■■		●■		●■																
PC/PBT		1.0		7		●●		●●		●■		●▲		●●		●●		●●		●●		●●		●■		●▲		●●																
CRX5421 RESIN		1.3		7		●●		●●		●●		●●		●▲		●●		●●		●●		●●		●●		●●		●●																
CRX9421 RESIN		1.3		7		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●		●●																
CRX1414 RESIN		0.6		7		●●		●●		●▲		●●		●●		●●		●●		●●		●●		●■		●●		●●																
CRX9411 RESIN		0.6		3		-		-		●●		-		-		-		-		-		-		●■		-		-																
		0.6		7		●●		●●		●▲		●●		●●		●●		●●		●●		●●		●■		●●		●●																
		0.6		3		-		-		●●		-		-		-		-		-		-		●●		-		-																

PERFORMANCE PROPERTIES

LNP ELCRES CRX copolymer resins are a new family of polycarbonate copolymers that can provide improved chemical resistance. These resins are based on unique copolymer building block blends offering a combination of:



POTENTIAL APPLICATIONS - MEDICAL EQUIPMENT HOUSINGS AND ENCLOSURES



Insulin pump



Infusion pump



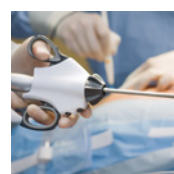
Dental chair components



Ultrasound monitor



Hospital bed components



Surgical tools



Imaging devices

PROPERTY PROFILE

Property	Standard	Unit	LNP™ ELCRES™ CRX1414 RESIN	LNP™ ELCRES™ CRX9411 RESIN	LNP™ ELCRES™ CRX5421 RESIN	LNP™ ELCRES™ CRX9421 RESIN
			Amorphous PC Copolymer	Amorphous PC Copolymer	Semi-crystalline PC copolymer /PBT	Semi-crystalline PC copolymer /PBT
Tensile Strength at Yield	ASTM D 638	MPa	54	52	42	44
Tensile Strain at Break		%	>100	>100	70	59
Tensile Modulus		MPa	2020	1920	1820	1985
Notched Izod Impact, 23 °C	ASTM D 256	J/m	875	765	645	590
Flame Performance	UL 94 SABIC		HB @ 0.75 mm	VO @ 1.6 mm ALL VO @ 0.8 mm BK	HB @ 0.75 mm	VO @ 1.5 mm
MFR, 300 °C, 1.2 kgf	ASTM D 1238	g/10 min	10	10	–	–
MFR, 250 °C, 5 kgf	ASTM D 1238	g/10 min	–	–	11	11.5
Density	ASTM D 792	–	1.2	1.2	1.3	1.3
Mold Shrinkage, flow	SABIC	%	0.4-0.9	0.4-0.9	1.0-1.6	1.0-1.6
Mold Shrinkage, x-flow	method	%	0.4-0.9	0.4-0.9	0.9-1.6	0.9-1.6

CONTACT INFORMATION

SABIC SPECIALTIES BUSINESS

AMERICAS

E: Specialties.Americas@sabic-hpp.com
T: +1 800 845 0600

ASIA PACIFIC

E: Specialties.Asia@sabic-hpp.com
T: +86 400 833 1033

EUROPE

E: Specialties.EMEA@sabic-hpp.com
T: +36 1 288 3040



SABIC MATERIAL FINDER
Find the right Specialties material
for your application ►



MEDICAL DEVICES

DISCLAIMER: ANY SALE BY SABIC, ITS SUBSIDIARIES AND AFFILIATES (EACH A “SELLER”), IS MADE EXCLUSIVELY UNDER SELLER’S STANDARD CONDITIONS OF SALE (AVAILABLE UPON REQUEST) UNLESS AGREED OTHERWISE IN WRITING AND SIGNED ON BEHALF OF THE SELLER. WHILE THE INFORMATION CONTAINED HEREIN IS GIVEN IN GOOD FAITH, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND NONINFRINGEMENT OF INTELLECTUAL PROPERTY, NOR ASSUMES ANY LIABILITY, DIRECT OR INDIRECT, WITH RESPECT TO THE PERFORMANCE, SUITABILITY OR FITNESS FOR INTENDED USE OR PURPOSE OF THESE PRODUCTS IN ANY APPLICATION. Each customer must determine the suitability of seller materials for the customer’s particular use through appropriate testing and analysis. No statement by seller concerning a possible use of any product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right. SABIC and brands marked with ™ are trademarks of SABIC or its subsidiaries or affiliates, unless otherwise noted.

© 2024 Saudi Basic Industries Corporation (SABIC). All Rights Reserved. Any brands, products or services of other companies referenced in this document are the trademarks, service marks and/or trade names of their respective holders.