

TECHNICAL POLYMERS MED RANGE

Chemical resistance





CHEMICAL RESISTANCE OF ARKEMA'S MEDICAL-GRADE SPECIALTY POLYMERS

As healthcare technology continues to advance, the need for high performance medical grade polymers will increase. Arkema, having been a key player in the healthcare market, recognizes the importance of thoroughly understanding the chemical resistance profile of its Medical Grade Polymers. In order to ensure optimal material selection for its customers, Arkema has conducted a chemical resistance study with the top chemical agents commonly used in hospitals and other healthcare settings along with its Medical Grade Polymers.

The chart below demonstrates the qualitative performance of chemical resistance based on surface aspect (the appearance of cracks) and coloration. Environmental stress cracking resistance tests (ESCR) were performed using elliptical Bergen jig, which applies a range of strains to a single sample bar and injected plates immersed into the indicated chemical agent at room temperature (23°C) for 24 hours.

TABLE 1- List of chemical agents

Main category	Chemical composition	CAS numbers	Commercial products (Hospital)		
Bleach	Sodium hypochlorite 11-15% diluted at 0.2%	7681-52-9	10% bleach solution		
			Clorox Bleach		
			Dispatch		
			Dispatch TM Hospital cleaner		
			Disinfectant with bleach		
			Sani-cloth™ Bleach Wipe		
			Alcavis Bleach Wipe 1:10		
H_2O_2	Hydrogen peroxide (30%) and peracetic acid	7722-84-1 and 79-21-0	Accel TB wipes		
	(38-40%- diluted at 5%)		Ecolabs oxycide		
			Virox		
IPA	2-propanol 100%	67-63-0	Isopropyl alcohol (or propan-2-ol or isopropanol)		
			70% IPA solution		
Phenol	CRESYL (10% hexylene glycol + 1% orthoben- zylparachlorophenol + 0.1% O-phenylphenol)	59-50-7 and 90-43-7 and 120-32-1	Wex-cide 128		
			Precise		
			Sporicidin		
			Precise TM Hospital Foam cleaner disinfectant		
			Sporicidin™		
			Vesphene IIse		
QAC (Anti-infective agent)	Benzethonium chloride 98% diluted at 0.3%	121-54-0	Sanicloth HB wipe		
			Sanicloth Super		
			Sanicloth AF3		
			Virex TB		
Glycol Ether	2-butoxyethanol 99% diluted at 5%	111-76-2	Cavicide		
Detergent	Chlorohexidine digluconate 30%	18472-51-0	Aniospray 29		
	diluted at 1%		Clinell detergent wipe		
			Cidex (2.4% glutaraldehyde)		
			Cidex OPA		
DMSO	Dimethyl sulfoxide 99%	67-68-5	-		

TABLE 2

		Bleach	H ₂ O ₂	IPA	Phenol	QAC	Ether	Detergent	DMSO
Pebax® MED	2533	++	++	++	+	++	++	++	++
	3533	++	++	++	+	++	++	++	++
	4033	+++	+++	+++	+	+++	+++	+++	+++
	4533	+++	+++	+++	+	+++	+++	+++	+++
	5533	+++	+++	+++	+	+++	+++	+++	+++
	6333	+++	+++	+++	+	+++	+++	+++	+++
	7033	+++	+++	+++	+	+++	+++	+++	+++
	7233	+++	+++	+++	+	+++	+++	+++	+++
	7433	+++	+++	+++	++	+++	+++	+++	+++
	MV1074	+++	+++	++	+	+++	+++	+++	+++
Rilsamid® MED	AESNO	+++	+++	+++	+++	+++	+++	+++	+++
	AMNO	+++	+++	+++	+++	+++	+++	+++	+++
Rilsan® MED	BESNO	+++	+++	+++	+	+++	+++	+++	+++
	BMNO	+++	+++	+++	+	+++	+++	+++	+++
	BESVO A	+++	+++	+++	+	+++	+++	+++	+++
Rilsan® Clear MED	G170	+++	+++	+	+	+++	+++	+++	+++
	G850 Rnew	+++	0	0	+	+++	+++	+++	+++
Kynar® MED	720	+++	+++	+++	+	+++	+++	+++	++

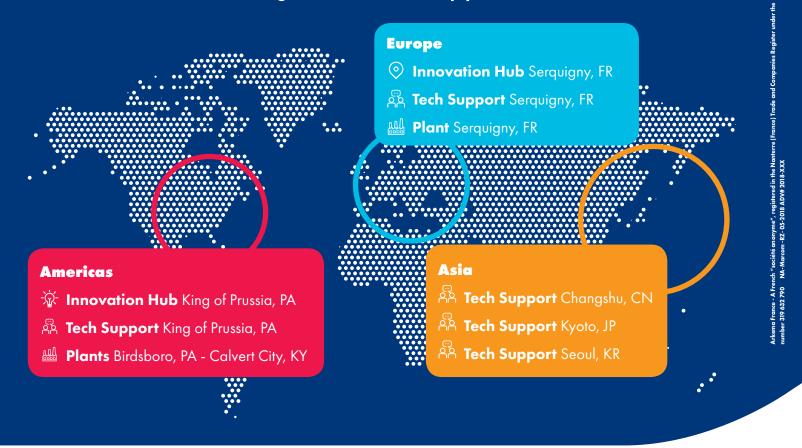
QUALITATIVE KEY FOR CHEMICAL RESISTANCE

- Resistant. No or little change in weight or dimensions, no damage
 Limited resistance. Changes in weight or dimensions after longer periods, possibly irreversible changes of properties. We recommend contacting us before use
 Not resistant. May still sometimes be used under specific conditions (short exposure time, contact droplets)
 Soluble or attacked after brief contact
- 0

Environmental stress cracking



Global Manufacturing, Technical Support, and R&D



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