Arkema **Rilsan® MED & Rilsamid® MED**

NCC offers an extensive selection of technical polymer as well as additive materials that are designed specifically for use by the medical device and healthcare sectors.

As part of our portfolio of products, we offer the full range of Arkema medical polymers, including Rilsan® MED and Rilsamid® MED. Rilsan® MED is produced from a renewable source.

Medical grades Rilsan® polyamide 11 and Rilsamid® polyamide 12 are thermoplastic polymers used in applications that require the strength and performance characteristics of a true thermoplastic, yet still offer sufficient flexibility and elongation approaching that of some elastomers.

Rilsan® and Rilsamid® polymers are easy to process by most methods, including extrusion, extrusion blow moulding, injection moulding and rotomoulding.

Key properties:

- Certifications - USP Class VI, - ISO 10993-4, - ISO 10993-5
- High strength and mechanical resistance
- Excellent resistance to chemicals (particularly hydrocarbons)
- Ease of processing
- High dimensional stability and low density
- Wide range of working temperatures [-40° C – 130° C (40° F – 266° F)]
- Very low gas permeation

NCC MEDICAL & HEALTHCARE POLYMER SOLUTIONS

ARKEMA INNOVATIVE CHEMISTRY

RILSAMID® MED BY ARKEMA

RILSAN® MED BY ARKEMA

ARKEMA INNOVATIVE CHEMISTRY

RILSAMID® MED BY ARKEMA

RILSAN® MED BY ARKEMA

				MEDICAL GRADE RANGE						
				RILSAN®			RILSAN® CLEAR		RILSAMID®	
PROPERTIES	DESCRIPTION	TEST METHOD	UNITS	BMNO MED	BESNO MED	BESVOA MED	G 170 MED	G 850 Rnew® MED	AMNO MED	AESNO MED
PROPERTIES		ISO 1874	-	PA11, M, 12-010	PA11, E, 22-010	PA11, E, 22-010			PA12, M, 12-010	PA12, E, 22-010
BIO BASED CARBON	calculation	ASTM 6866	%	100	100	100	-	49 – 51	-	-
DENSITY		ISO 1183	g / cm3	1.03	1.02	1.02	1.05	1.01	1.01	1.01
WATER ABSORPTION	@20° C, 50 % RH	ISO 62	%	0.75	0.75	0.75	1.3	1.7	0.7	0.7
	@23° C, 24 hrs in water	ISO 62	%	0.95	0.95	0.95	3.2	4	0.9	0.9
MELTING POINT		ISO 11357	° C	189	186	186	-	-	180	180
GLASS TRANSITION TEMPERATURE	Tg	ISO 11357	-	-	-	-	168	150	-	-
HEAT DEFLECTION TEMPERATURE (HDT)	under 0.45 Mpa	ISO 75	° C	145	145	145	150	135	130	130
	under 1.80 Mpa	ISO 75	° C	50	50	50	136	120	50	50
TRANSPARENCY	560 nm, 2 mm	ASTMD 1003-97	-	-	-	-	90.8	91.7	-	-
SHRINKAGE	flow direction, after 24 hrs, 2 mm, mould @ 30° C	Internal Method	%	0.9	n / a**	n / a**	0.69	0.6	0.8	n / a**
	transverse direction, after 24 hrs, 2 mm, mould @ 30° C	Internal Method	%	0.9			0.72	0.75	0.8	
HARDNESS SHORE +	Instantaneous	ISO 868	Shore D	75	76	76	84	80	74	74
	After 15 sec	ISO 868	Shore D	68	71	71	79	78	69	70
TENSILE TEST +	Stress at Yield	ISO 527	Shore D	75	76	76	84	80	74	74
	Strain at Yield	ISO 527	%	5	6	5	9	7.6	8	5
	Stress at Break	ISO 527	MPa	58	50	52	58	58	62	47
	Strain at Break	ISO 527	%	>200	>200	>200	>100	>140	>200	>200
TENSILE MODULUS +		ISO 527	MPa	1280	1200	1180	2020	1622	1100	1260
FLEXURAL MODULUS +		ISO 178	MPa	1140	1130	1100	1980	1600	920	1060
CHARPY IMPACT	Unnotched 23° C	ISO 179	kJ / m²	NB	NB	NB	NB	NB	NB	NB
	Unnotched -30° C	ISO 179	kJ / m²	NB	NB	NB	NB	NB	NB	NB
	Stress at Break	ISO 179	kJ / m²	20	15	15	13	11	5	11
	Strain at Break	ISO 179	kJ / m²	10	13	13	13	9	6	8

+ Samples conditioned 15 days at 23° C, 50% RH. ++ Rilsan® Clear, Rilsan® and Rilsamid® are delivered dried in sealed packaging ready to be processed. Drying is only necessary for bags opened for more than 2 hours
* Injection grade ** Extrusion grade

PROCESSING CONDITIONS			BMNO MED	BESNO MED	BESVOA MED	G 170 MED	G 850 Rnew® MED	AMNO MED	AESNO MED
DRYING++	Time	hrs	4 – 6	4 – 6	4 – 6	4 – 6	4 – 6	4 – 6	4 – 6
	Temperature	° C	80-90	65-80	65-80	90	90	80-90	65-80
EXTRUSION TEMPERATURE	Minimum	° C		230	230	270	-		230
	Recommended	° C	n / a*	250	250	280	-	n / a*	240
	Maximum	° C		280	280	290	-		270
INJECTION TEMPERATURE	Minimum	° C	240			270	250	230	
	Recommended	° C	270	n / a*	n / a*	290	280	250	n / a*
	Maximum	° C	290			310	300	280	
MOULD TEMPERATURE	Typical	° C	25 – 60	n / a*	n / a*	40 – 80	20 - 80	20-40	n / a*

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