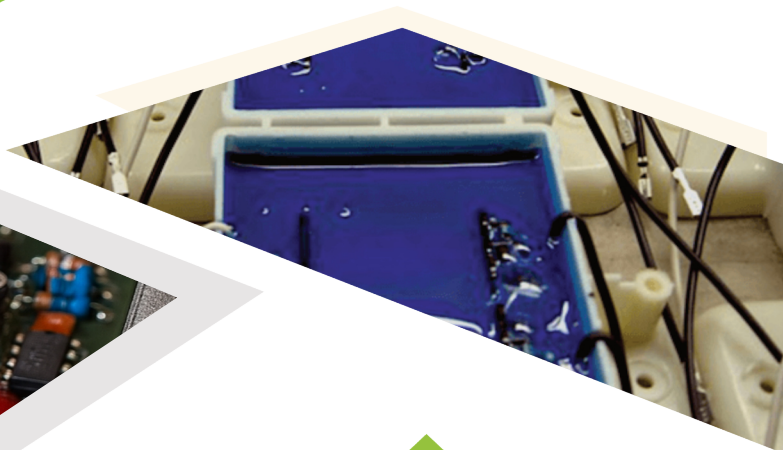
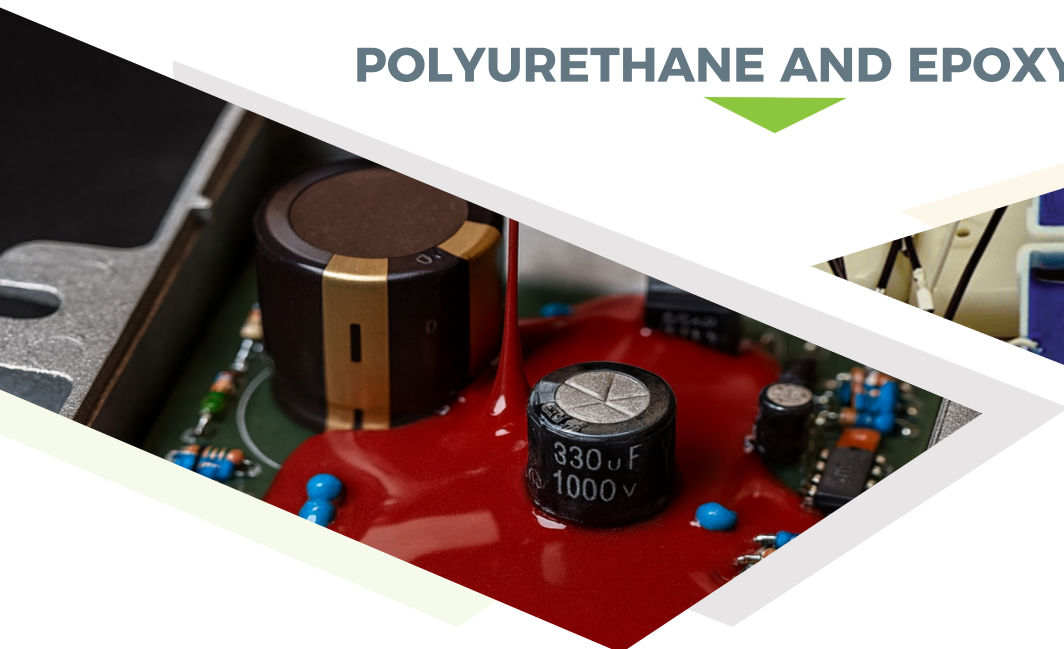


POLYURETHANE AND EPOXY RESINS



What is a polyurethane resin?

Polyurethane or epoxy resins are two-component resins used to encapsulate electronic systems.

Encapsulation allows the electronic system to be isolated from its external environment and to be protected against:

- Rain and immersion
- Chemical attacks (solvents, salt water, oils, corrosive products, etc.)
- Mechanical shocks

Properties of polyurethane resins and epoxy.

RESINS	POLYURETHANE	EPOXY
Hardness	Variable	High
Hydrocarbure resist.	OK	OK
Temperature resist. (°C)	130	170
Price p/ board or p/m ²	€	€€
Working time (min)	10 - 30	30-120
Adhesion	+++	++++
Chemical resistance	++	+++
Abrasion resistance	+++	+++
Exothermic reaction	++	++
Elongation	Variable	Low

Depending on your needs, ABchimie will direct you to the solution best suited to your application.

Application example:

Polyurethane resin used by a customer for maritime applications to protect satellite beacons for boat safety:
U6000 FREE

Highlight: Bi-component polyurethane resin without isocyanate with high protection against salt water.

Industrial use: Since 2016



POLYURETHANE AND EPOXY RESINS



	U4291	U6942	 RE461	 RE551	 RE820	 RE602	ST21	ST1621
Type	Urethane						Epoxy	
Hardener	U4291B	U6942B	RE101/ RE102	RE102	RE102	RE602	CA51	ST1626B
Ratio (Weight)	100 / 26	100 / 16	100 / 16	100 / 14	100 / 25	127 / 100	100 / 9	100 / 100
Specific gravity	1,05	1,55	1,55	1,55	1,1	1,3	1,6	1,15
Mixed viscosity at 20°C (cP)	500	1100	1100	2400	4300	6000 -> Thixo	1500	45000
Hardness (Shore)	A20 Friable	D35	D35	D55	A80	D57	D90	D80
Temperature range	-50°C +120°C	-50°C +120°C	-50°C +120°C	-40°C +130°C	-55°C +120°C	-50°C +110°C	-50°C +150°C	-40°C +120°C
Thermal conductivity (W/m·K)	0,2	0,7	0,7	0,3	0,25	0,3	0,75	0,2
Dielectric strength (kV/mm)	14	25	25	21	28	18	20	15
Working Time (min)	20	10-20	10-20	20	1 - 5	20 secs.	30 - 40	6
Gel Time (min)	30	30	30	55	4-10-40	7	50-90	10
Color	Yellow transparent	Black, White	Black, White, Red, Brown	Black	Black, Beige	Black	Black	Clear amber
Repairability	Yes	No	No	No	Yes	No	No	No
Characteristic	Repairability	General	General	Low cost	RF, Fast curing	Thixotropic	Anti piracy	Glue
Standards	-	UL94V0 Meets	UL 94V0 / EN 45545	UL 94V0	-	UL 94V0	UL94V0 Meets	-
Packaging	C400mL, K05K, K25,2K	C400mL, K05K, K25,2K	K5,8K, K23,2K	B5K, B20K, B250K	K5K	50cc, C400mL, B12,7K	K01K, K05K, K27,5K	50cc

ABchimie offers a wide range of resins in packaging adapted to your processes.



Preparation video of a 2-component resin

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"Photos: ABchimie & iStock (illustrative purposes only)" - 09/2025