

ELASTOMERIC RESINS

Elastomeric Casting Resins are high quality PUR systems with a wide range of shore hardness levels (Shore A 40 to D 67) used in manifold application areas.

ELASTOMERIC CASTING RESINS FOR FOUNDRY PATTERN MAKING

The tough elastic systems are mainly used for high abrasion resistant liners (face casting process) for core boxes and match plates with long working life.

Biresin® U1419:

- The low shore hardness of around A 97 offers highest abrasion resistance of core boxes also opposite the shooting nozzles due to the high rebound elasticity
- Biresin® U1419 with 6-7 min potlife for small core boxes and short demoulding time

Biresin® U1320 NT:

- Proven market leader of nontoxic foundry resins for series core boxes
- Standard hardener Biresin® U1320 L (B) works also for big castings up to 100 kg
- Sika Cleaner 205 increases bonding on prepared aluminium substructures

UR 3490:

- Provides higher shore hardness (D 67) and good heat resistance besides its good abrasion resistance
- Favourite product for match plates



Core box made of Biresin® U1320 NT

ELASTOMERIC CASTING RESINS FOR FOUNDRY PATTERN MAKING

ISOCYANATE	A	Biresin® U1419		Biresin® U1320 NT	UR 3490
POLYOL / AMINE	B	Biresin® U1419	Biresin® U1458	Biresin® U1320 L Neu	UR 3490
Mixing ratio [g]	A	100		100	100
	B	16	18	40	50
Colour		coloured-transparent		beige	beige to dark beige
Characteristics		very high abrasion and impact resistance, high rebound elasticity, good flowability, fast demoulding		very high abrasion resistance, both components without toxic classification, simple hand casting without postcuring	good abrasion resistance and impact resistance; higher shore hardness and better heat resistance; low toxicity
Applications		smaller core boxes, areas / spots opposite the shooting nozzles		high abrasion resistant core boxes and match plates, also in larger sizes	core boxes and match plates with higher shore hardness and heat resistance (T _c ~100 °C)
Processing data (approx. values)					
Mixed viscosity [mPas]		2,800	4,000	8,000	1,500
Potlife [min]		6 - 7	20	16	14
Demoulding time [h]		1 - 3	16	> 16	16
Physical data (approx. values)					
Density [g/cm³]		1.1	1.1	1.15	1.08
Shore hardness		A 98 (D 54)	A 97 (D 45)	D 62	D 67
Elongation at break [%]		375	700	330	120
Abrasion resistance [mm³]		90	270	70	190

ELASTOMERIC CASTING RESINS FOR MOULD MAKING

The soft elastic types with very high elongation qualities are used for making flexible moulds (similar to silicone) and for castings made of the most varied of materials (even ceramic). The tough elastic products are suitable for more high-resistant moulds and mouldings as well as for wear-resistant coatings in special machine construction.

UR 3450:

- Rubber like elastomer; black color
- High mechanical properties
- Chemical resistance
- Exists in Shore A 80 & 85 (UR 3460)

Biresin® U1409:

- New technology giving high properties
- Friendly use 1:1 ratio and low viscosity
- High frequency vibrations resistance



Soft shift gaiter made by UR 3450

ELASTOMERIC CASTING RESINS FOR MOULD MAKING

ISOCYANATE	A	Biresin® U1404						UR 3440	UR 3450			Biresin® U1305	Biresin® U1409
POLYOL / AMINE	B	Biresin® U1404	Biresin® U1434	Biresin® U1404 + U1419 L				UR 3440	UR 3450	UR 3460		Biresin® U1305	Biresin® U1409
Mixing ratio [g]	A	80	50	100				100	100	100		100	100
	B	100	100	54	32	10	-	50	35	40		60	100
				6	8	10	11						
Colour		reddish-transparent	light-beige	reddish-transparent				light amber	black	black		cream-white / black	beige
Characteristics		very soft, high elongation, low shrinkage		shore A 47 - A 80, with hardener (B) mixing				low viscosity; low moisture sensitivity; good abrasion resistance; good dimensional stability	good tear resistance; very good hydrolysis and chemical resistance; high abrasion resistance; good elongation at break			high abrasion resistance, can be accelerated by HC 586	insensitive to moisture, good tear strength and elasticity
Applications		ceramic industry, flexible moulds and components		ceramic industry, flexible moulds and components				production of parts requiring high properties (seals, soft moulds, sanding mask etc).	production of semi flexible moulds, forming tools or parts requiring good abrasion resistance and tear resistance properties			wear resistant coating, electronic encapsulation	flexible fixtures for parts for ultra sonic welding; elastic, flexible moulds
Processing data (approx. values)													
Mixed viscosity [mPas]		3,000	3,700	3,000 - 5,800				1,500	3,000	3,600		2,300	2,500
Potlife [min]		25	20	60	90	100	110	17	18	20		15 - 20	30
Demoulding time [h]		24	> 16	24				24	24	24		10 - 16	> 16
Physical data (approx. values)													
Density [g/cm³]		1.05	1.3	1.05				1.02	1.08	1.09		1.2	1.10
Shore hardness		A 40	A 55	A 47	A 60	A 74	A 80	A 63	A 80	A 85		A 89	A 92
Tear strength [N/mm]		7	9	12	16	25	40	24	67	83		27	12
Elongation at break [%]		> 600	> 600	1,000	1,000	1,000	800	1,000	620	810		300	650

- UR 7863:**
- Special filled elastomer for ceramic case moulds
 - No moisture sensitivity
 - No shrinkage in volume



Release of UR 58480 soft mould for stone facing

ELASTOMERIC CASTING RESINS FOR CERAMICS					
ISOCYANATE	A	Biresin® U1303			UR 7801
POLYOL / AMINE	B	Biresin® U 1302	Biresin® U 1402	Biresin® U1419	UR 7863
Mixing ratio [g]	A	100	100	100	50
	B	40	35	10	100
Colour		coloured-transparent			pink
Characteristics		rubbery, insensitive to moisture; good tensile strength and elasticity; choice of polyols for different hardness levels; very low shrinkage			easy sanding after curing; homogeneous material; low moisture sensitivity; chemical resistance to release agents
Applications		casting of flexural moulds for ceramic industry, moulds for concrete mouldings, flexible mouldings			ceramic case moulds by hand casting
Processing data (approx. values)					
Mixed viscosity [mPas]		3,800	4,000	8,000	3,000
Potlife [min]		25	25	15	20
Demoulding time [h]		> 16	> 16	> 16	16
Physical data (approx. values)					
Density [g/cm³]		1.03	1.05	1.05	1.34
Shore hardness		A 73	A 81	A 90	A 63
Tear strength [N/mm]		15	18	30	16
Elongation at break [%]		550	400	400	850

- UR 58630:**
- Soft filled elastomer for concrete moulds
 - High chemical resistance
 - Dimensional stability



Casting of Biresin® U1404

- UR 5895:**
- Semi rigid elastomer for tools and parts
 - 3 reactivity and 8 colors available
 - Dedicated for concrete stamps; soft rulers; inserts in concrete casting



Mould out of UR58630 for concrete casting

ELASTOMERIC CASTING RESINS FOR CONCRETE AND BUILDING INDUSTRY											
ISOCYANATE	A	Biresin® U1404	Biresin® U1404	UR 7803	UR 7803	UR 5803			UR 5805		
POLYOL / AMINE	B	Biresin® BF 620	Biresin® BF 625	UR 7830	UR 7845	UR 58300	UR 58480	UR 58630	UR 58720	UR 5895	UR 5898 F
Mixing ratio [g]	A	100	100	100	70	10	30	35	30	55	65
	B	40	54	40	100	100	100	100	100	100	100
Colour		reddish-transparent	amber	beige	beige	beige	ochre	grey or beige	beige	coloured	beige
Characteristics		low shrinkage after hardening; high elongation at break; low moisture sensitivity; good chemical resistance			high elongation at break; low hardness; chemical stability	high elongation at break; low viscosity; good mechanical resistance	high chemical resistance; good mechanical properties; 2 pot lifes available	easy processing; excellent tear strength; good chemical resistance	easy processing; good tear strength; high impact resistance; quick setting; available in 8 colours	semi-rigid system; quick setting; high tear strength	
Applications		production of moulds or flexible parts, by hand casting or with help of 2K machine. Large volumes possible in one shot with UR 7845			production of intricate moulds for concrete industry	production of moulds for concrete industry by hand casting or with a 2K machine	production of moulds and tools for the concrete industry. Especially dedicated to make soft moulds to cast concrete part in mass production	production of moulds or flexible parts, by hand casting or with 2K machine.	production of semi-flexible parts or moulds. Pot life adapted to process (hand or 2K machine)	production of semi rigid parts or moulds. Exists with short pot life for 2K machines applications	
Processing data (approx. values)											
Mixed viscosity [mPas]		6,500	1,300	2,300	2,450	4,000	2,000	2,500	1,000	1,000	1,000
Potlife [min]		10	20 - 25	40 - 60	40 - 50	15 - 20	15 - 20	15 - 20 (30 with UR 58630 S)	15 - 20	various	1 (7 with UR 5898)
Demoulding time [h]		> 16	16 - 24	24	18	24	16	16 - 24	24	12	-
Physical data (approx. values)											
Density [g/cm³]		1.1	1.1	1.16	1.14	1.35	1.31	1.31	1.25	1.25	1.25
Shore hardness		A 60 - 65	A 60	A 30	A 50	A 30	A 50	A 65	A 75	A 94	D 65
Tear strength [N/mm]		13	14	8.5	18	6	14	16.5	31	64	110
Elongation at break [%]		300	800	1,500	1,200	900	550	670	700	400	140