

RAKU-TOOL® Epoxy Liquid Systems

Epoxy Resin	Epoxy Hardener	Stock level	Mix ratio (pbw)	Color	Pot life 25°C (min)	Layer thickness (mm)	Density g/cm ³ ca. (ISO 1183)	Key Properties	Applications
RAKU-TOOL® Epoxy Gelcoat Systems 250 ml									
EG-2100	EH-2901-2	A	100 : 18	light blue	15 – 20	–	1.4	RT curing, thixotropic, can be polished and sanded, good interlayer adhesion, fast reactivity	Negatives, models, jigs and fixtures
	EH-2950-1	A	100 : 13	light blue	35 – 40	–	1.4	RT curing, thixotropic, can be polished and sanded, good interlayer adhesion, slow reactivity	
EG-2101	EH-2901-2	A	100 : 15	white	20 – 25	–	1.4	RT curing, thixotropic, polishable, easy to apply, fast reactivity	Negatives, models, jigs & fixtures, plaster working molds (ceramics)
	EH-2950-1	A	100 : 12	white	40 – 50	–	1.4	RT curing, thixotropic, polishable, easy to apply, slow reactivity	
EG-2102	EH-2901-2	A	100 : 10	blue	20 – 25	–	1.8	RT curing, abrasion resistant, chemical resistant, fast reactivity	Foundry patterns, foam molds, UP forming tools, tools and tooling aids
	EH-2950-1	A	100 : 8	blue	40 – 50	–	1.8	RT curing, abrasion resistant, chemical resistant, slow reactivity	
EG-2103	EH-2903-1	A	100 : 11	black	25	–	2.2	RT curing, iron filled, wear resistant, thixotropic, hard but workable	Foundry patterns, metal forming tools, wear resistant tooling aids
EG-2104	EH-2950-1	A	100 : 10	black	35 – 45	–	1.6	Temperature resistant (105°C), very easy to apply, can be polished to a high gloss	Gelcoat for laminate structures and other build-up methods, vacuum forming molds, RTM molds
EG-2105	EH-2901-2	B	100 : 25	green	15 – 20	–	1.3	Temperature resistant (105°C), excellent styrene resistance, easy to apply, can be polished to a high gloss	Gelcoat for laminate structures and other build-up methods, vacuum forming molds
EG-2105	EH-2950-1	A	100 : 20	green	25 – 35	–	1.3	Temperature resistant (120°C), excellent styrene resistance, easy to apply, can be polished to a high gloss	Gelcoat for laminate structures and other build up methods, vacuum forming molds, UP-laminated molds/press tools, RTM molds
EG-2107	EH-2950-1	A	100 : 14	black	120 – 150	–	1.7	Temperature resistant (180°C), easy to apply, good workability	Gelcoat for high temperature molds, prepreg lay up tools
RAKU-TOOL® Epoxy Coupling Layer 500 ml									
EL-2209-1	EH-2950-1	A	100 : 10	gray	20 – 30	–	1.7	Prefabricated, two component coupling coat, temperature resistant (100°C)	Production of tools, molds and tooling aids with various systems like epoxy and polyurea
RAKU-TOOL® Epoxy Laminating Systems									
EL-2200	EH-2900	A	100 : 20	clear	70	8	1.1	RT curing, unfilled, low viscosity, good compatibility with glass fibers and fillers	General tool building and tooling aids, binder for various fillers
EL-2200	EH-2904-1	B	100 : 40	clear	^{500 ml} 50	8	1.1	RT curing, good wetting properties with glass fibers and fillers, impact resistance	General tool building and tooling aids, binder for various fillers, laminating system for the construction of flexible laminate structures
EL-2200	EH-2950-1	B	100 : 16	clear	60 – 70	8	1.1	Long pot life, good wetting properties, room temperature curing, temperature resistant up to 85°C	General tool building and tooling aids, does not attack EPS, supporting structures for Close Contour Pastes
EL-2201	EH-2904-1	A	100 : 50	clear	35	8	1.16	RT curing, unfilled, high mechanical properties at RT cure, fast reactivity	Jigs, foundry patterns, tooling aids, UP lay up tools, backing structures
	EH-2905-1	A	100 : 50	clear	65	8	1.16	RT curing, unfilled, high mechanical properties at RT cure, medium reactivity	
	EH-2906-1	A	100 : 50	clear	145	8	1.16	RT curing, unfilled, high mechanical properties at RT cure, slow reactivity	

Epoxy Resin	Epoxy Hardener	Stock level	Mix ratio (pbw)	Color	Pot life 25°C (min)	Layer thickness (mm)	Density g/cm ³ ca. (ISO 1183)	Key Properties	Applications
RAKU-TOOL® Epoxy Laminating Systems 500 ml									
EL-2203	EH-2952-1	A	100 : 30	clear	60	8	1.17	Temperature resistant (120°C), unfilled, low viscosity, very good wetting properties, fast reactivity	Laminated molds, RTM or RIM tools, glass or carbon fiber laminates, resin infusion
	EH-2953-1	A	100 : 30	clear	100	8	1.1	Temperature resistant (120°C), unfilled, low viscosity, slow reactivity	
EL-2204	EH-2954-2	A	100 : 40	amber	110 – 130	8	1.2	Temperature resistant (190°C), unfilled, good wetting properties, fast reactivity	High temperature resistant glass or carbon fiber reinforced tools, high temperature prepreg lay up tools, backing structures
	EH-2955-2	A	100 : 40	amber	230 – 250	8	1.2	Temperature resistant (190°C), unfilled, good wetting properties, slow reactivity	
RAKU-TOOL® Epoxy Laminating Pastes 500 ml									
EL-2207-2	EH-2907-2	A	100 : 12	gray/green	40 – 45	15	0.85	Laminating paste, RT curing	Reinforcement of molds and tooling aids, backing structures, jigs, fixtures
EL-2207-2	EH-2971	B	100 : 10	gray/green	120 – 150	15	0.85	Laminating paste, RT curing, temperature resistant (75°C)	Reinforcement of molds and tooling aids, laminated shells, jigs and fixtures
RAKU-TOOL® Epoxy Casting Systems 1000 ml									
EC-2400	EH-2909	A	100 : 6	blue	45	30	1.9	Abrasion resistant, good chemical resistance, easy to pour, fast reactivity	Foundry patterns, copy models, foam molds
	EH-2952-1	A	100 : 7	blue	150 – 180	60	1.9	Abrasion resistant, temperature resistant (110-115°C), slow reactivity	Foundry patterns, copy models, foam molds
EC-2401	EH-2904-1	A	100 : 20	beige	45	10	1.6	With mineral filler, flows very well, fast reactivity	Foundry patterns, copy models, direct casting (negatives), jigs, fixtures, galvanobath models, working models for the ceramics industry
	EH-2905-1	A	100 : 20	beige	90	20	1.6	With mineral filler, flows very well, medium reactivity	
	EH-2906-1	A	100 : 20	beige	180	80	1.6	With mineral filler, flows very well, slow reactivity	
EC-2402	EH-2904-1	A	100 : 15	black	45	10	2.4	RT curing, with metal fillers, workable hard surface, fast reactivity	Foundry patterns, copy models, metal forming, general modeling
	EH-2905-1	A	100 : 15	black	90	20	2.4	RT curing, with metal fillers, workable hard surface, medium reactivity	
	EH-2906-1	A	100 : 15	black	180	80	2.4	RT curing, with metal fillers, workable hard surface, slow reactivity	
	EH-2902-1	A	100 : 15	black	130 – 140	40	2.2	RT curing, with metal fillers, impact resistant	
EC-2404	EH-2952-1	A	100 : 11	gray	105	60	1.7	Temperature resistant (120°C), aluminum filled, chemical resistant	Vacuum forming molds, jigs, injection molds, foam molding tools
EC-2461	EH-2961 AC-9061	B	100 : 33.3 : 1117	dark gray	120 – 180	15 – 300	2.5	Highest rigidity, no crack formation due to low exotherm during cure, thermal coefficient of expansion adapted to steel	Foaming tools, blow molds, metal forming tools, rollers, spindles and likewise
RAKU-TOOL® Epoxy Infusion Systems 500 ml									
EL-2203	EH-2970-1	A	100 : 30	clear	60	8	1.1	Low viscosity, no degassing under vacuum, excellent wetting properties, flows very well, cures well at room temperature, temperature resistant up to 120°C	Resin Infusion
EI-2500	EH-2953-1	B	100 : 30	clear	60 – 80	8	1.1	Room temperature curing, fast cure, good wetting properties, temperature resistant up to 110°C	Resin Infusion, RTM
EI-2500	EH-2970-1	A	100 : 30	clear	70	8	1.1	Temperature resistant (115°C), flows well, unfilled, low viscosity, good wetting properties	Resin Infusion, RTM
	EH-2971	A	100 : 30	clear	90 – 100	8	1.1		

RAKU-TOOL® Epoxy Liquid Systems

Epoxy Resin	Epoxy Hardener	Stock level	Mix ratio (pbw)	Color	Pot life at 25°C (min)	Layer thickness (mm)	Density g/cm ³ ca. (ISO 1183)	Key Properties	Applications
RAKU-TOOL® Epoxy Infusion Systems 500 ml									
EI-2500	EH-2972	B	100 : 30	clear	20 – 25	4	1.2	Room temperature curing, fast cure, good wetting properties, temperature resistant up to 100°C	Resin Infusion, RTM
EI-2500	EH-2973	B	100 : 32	yellowish	80 – 90	8	1.1	Room temperature cure, no brittleness after room temperature cure overnight, easy de-molding, good wetting properties, flows very well under vacuum, temperature resistant up to 130°C	RTM, Resin Infusion
EI-2504	EH-2974	A	100 : 32	clear	210 – 270	8	1.1	Excellent wetting properties, flows very well, temperature resistant up to 170°C	Resin Infusion

RAKU-TOOL® Polyurethane / Polyurea Liquid Systems

PUR Resin	PUR Hardener (Isocyanate)	Stock level	Mix ratio (pbw)	Color	Pot life at 25°C (min)	Layer thickness (mm)	Density g/cm ³ ca. (ISO 1183)	Key Properties	Applications
RAKU-TOOL® Polyurea Gelcoat Systems 250 ml									
PG-3159	PH-3958	B	100 : 125	green	15 – 20	–	1.24	High wear resistance, high impact resistance	Foundry patterns, pattern plates, core boxes, impact protection
RAKU-TOOL® Polyurea Casting Systems 1000 ml									
PC-3410	PH-3911-1	A	100 : 300	black	45 – 50	50	1.1	Hand cast, good moisture resistance, long pot life, no skull and crossbones label, high elongation at break. Shore A 40-45	Structural molds, closed plaster molds for the ceramics industry, concrete molds, vibration absorption, assembly jigs, impact protection
PC-3411	PH-3911-1	A	100 : 1000	black	30 – 35	50	1.1	Hand cast, good moisture resistance, long pot life, no skull and crossbones label, high elongation at break. Shore A 80-85	
PC-3458	PH-3958	A	100 : 500	orange	10 – 15 7 – 8 (40°C)	10	1.18	Excellent abrasion resistance, high number of castings, high impact strength, components are not toxic, no/little sand adhesion, can be cast by hand or machine dependent on system choice, good imprint accuracy	Foundry patterns, pattern plates core boxes
PC-3459	PH-3958	A	100 : 250	beige	15 – 20	10	1.18		
RAKU-TOOL® Polyurethane Casting Systems 1000 ml									
PC-3403	PH-3903	A	100 : 80	beige	30 – 40	20	1.2	Mass casting system for face casting	Metal forming tools, molds for prototyping, prototypes and backing for foundry patterns
	PH-3903 (AC-9004)	A	100 : 80 (380 – 400)	beige	60	> 300	1.6 – 1.7	Mass casting system with filler AC-9004 for large volume castings	
PC-3412	PH-3923	B	100 : 17	white / opaque	3	100	1.11	Hand cast, no skull and crossbones label, Shore hardness can be adjusted	Structural molds, assembly jigs, impact protection, production of flexible parts
PC-3413	PH-3923	B	100 : 45	white / opaque	3	100	1.11		
PC-3414	PH-3915	A	100 : 20		60 – 75	100	1.7	Can be cast in thick layers, low exotherm reaction in thick layers, superior interlayer adhesion, easily repaired or modified, can be filled additionally. Low-viscosity	Backing casting of models, molds, negatives and general support aids, direct casting of foundry patterns, jigs

RAKU-TOOL® Polyurethane / Polyurea Liquid Systems

PUR Resin	PUR Hardener (Isocyanate)	Stock level	Mix ratio (pbw)	Color	Pot life at 25°C (min)	Layer thickness (mm)	Density g/cm³ ca. (ISO 1183)	Key Properties	Applications
RAKU-TOOL® Polyurethane Rapid Prototyping Systems									
					Pot life at 25°C (sec)				
PR-3602	PH-3904	A	100 : 80	black	65	4	1.14	Simulates PE / PP, very good impact resistance, fast demold time	Functional prototype parts & bumpers, short run production, rapid prototyping
	PH-3905	A	100 : 80	black	60	4	1.14	Simulates PE / PP, good impact strength, temperature resistant (90°C), fast demold time	Functional prototype parts & bumpers, short run production, rapid prototyping
PR-3608	PH-3905	A	100 : 80	black	50 – 60	4	1.19	Simulates PP / ABS, short demold time, temperature resistant (130-135°C), Shore D 75-80	Functional prototype parts, short run production, rapid prototyping
PR-3608	PH-3908	A	100 : 75	black	50 – 60	4	1.18	Simulates PP / ABS, impact resistant, fast demold time, no brittle phase	Functional prototype parts, short run production, rapid prototyping
PR-3654	PH-3905	A	100 : 55	black	50 – 60	4	1.35	Simulates PP / ABS, short demold time, temperature resistant (130°C), glass fiber filled, Shore D 80-85	Functional prototype parts, short run production, rapid prototyping
PR-3654	PH-3908	B	100 : 53	black	50 – 60	4	1.30	Simulates PP / ABS, high temperature resistance (100°C), impact resistant, no brittle phase, glass fiber filled	Functional prototype parts, short run production, rapid prototyping
RAKU-TOOL® Polyurethane Fast Cast Systems 1000 ml									
PF-3700-2	PH-3977	A	100 : 100	white	3 – 4	10	1.0 – 1.1	Fast cure and fast demold, unfilled, very low viscosity, good temperature resistance, improved moisture resistance, high fill rate possible, very high strength	Foundry patterns, core boxes, negatives, pattern plates, checking casts, replicas, vacuum forming molds, jigs
	PH-3977 (AC-9004)	A	100 : 100 (300)	beige	4 – 5	60	1.6 – 1.7	With filler AC-9004	
PF-3701-2	PH-3977	A	100 : 100	white	5 – 6	20	1.0 – 1.1	Fast cure and fast demold, unfilled, very low viscosity, very good temperature resistance, improved moisture resistance, high fill rate possible, very high strength	
	PH-3977 (AC-9004)	A	100 : 100 (300)	beige	6 – 7	80	1.6 – 1.7	With filler AC-9004	
RAKU-TOOL® Polyurethane Foam Systems									
					Cream time 30 g / sec RT	Gel time 30 g / min:sec	Specific weight g/l ca.		
PE-3801	PH-3905	B	100 : 37.5	beige	90 – 120	3:00 – 3:30	100 – 110	Soft – flexible and compressible, very fast reactivity, short demold time, good flow properties, very low weight of foam	Foam system for seat upholstery
PE-3801	PH-3980	B	100 : 50	beige	45 – 70	2:00 – 3:00	80 – 90		
PE-3803	PH-3905	B	100 : 100	beige	180 – 220 (200g)	12 – 13 (200g)	100 – 120	Fast reactivity, good flow properties, fast cure	Production of rigid molded parts

RAMPF Tooling Solutions GmbH & Co. KG

Robert-Bosch-Straße 8-10 | 72661 Grafenberg | Germany
T +49.7123.9342-1600 | F +49.7123.9342-1666
E tooling.solutions@rampf-gruppe.de

Resin	Hardener	Stock level	Mix ratio (pbw)	Color	Pot life at 25°C (min)	Layer thickness (mm)	Density g/cm ³ ca. (ISO 1183)	Key Properties	Applications
RAKU-TOOL® Accessories									
AC-9002		A		gray		–	0.60 – 0.85	Light mineral filler, bulk density 0.35-0.4 g/cm ³ , light filler	Filler for EP- and PU systems
AC-9004		A		white		–	2.4	Inorganic filler, bulk density 1.6 g/cm ³	Filler for EP- and PU systems
AC-9005		B		beige		–	3.0	Granular mineral filler, medium particle size 1-2 mm, workable	Filler
AC-9101		A		green		–	0.95	Film forming Poly-Vinyl-Alcohol (P.V.A.) release agent, which can also be used as sealer for porous surfaces	Mold sealer
AC-9102		A		white		–	0.8	Paste release agent, wax based, can be polished	Models made out of wood and board materials
AC-9103		A		white		–	0.72	Liquid release agent, wax based, can be polished	Tooling aids and tools made out of EP, PU and metal

EG	Epoxy Gelcoat/Resin	PG	Polyurea Gelcoat Resin	PE	Polyurethan Foam Polyol
EL	Epoxy Laminating/Resin	PC	Polyurethane or Polyurea Casting/Polyol or Resin	AC	Ancillaries
EC	Epoxy Casting/Resin	FR	Polyurethane Rapid Prototyping/Polyol		
EI	Epoxy Infusion/Resin	PF	Polyurethane Fast Cast/Polyol		
EH	Epoxy Hardener	PH	Polyurethane/Isocyanate		

A = available in stock,
B = please check with customer service

temperature resistant up to 105°C	temperature resistant up to 135°C
temperature resistant up to 115°C	temperature resistant up to 190°C
temperature resistant up to 120°C	