

SPECIFICATION

1. Hirenol Resins for Tire Industry : 6, 7p

1.1 Alkylphenolic tackifier

Items	Appearance	Softening point(°C)	Sp.Gr.	Features
KPT-S1503	Spheroid	90 ~ 100	1.02 ~ 1.06	General purpose
KPA-1350K	Spheroid	108 ~ 116	1.00 ~ 1.06	High tack
KPT-F1360	Spheroid	135 ~ 145	1.01 ~ 1.05	High tack & tack retention

1.2 Reinforcing resin

Items	Appearance	Softening point(°C)	Sp.Gr.	Features
KNR-1200	Spheroid	94 ~ 102	1.16 ~ 1.36	Straight phenolic
KPR-1300	Spheroid	85 ~ 95	1.12 ~ 1.18	CNSL Modified
KPR-1302	Spheroid	95 ~ 110	-	CNSL Modified
KPR-1310	Spheroid	85 ~ 95	1.12 ~ 1.18	CNSL & Cresol Modified
KPR-1320	Spheroid	90~100	-	Tall oil Modified

1.3 Resorcinolic steel cord adhesive resin

Items	Appearance	Softening point(°C)	Sp.Gr.	Features
KA-18	Spheroid	100 ~ 114	1.35 ~ 1.39	Steel cord adhesive in rubber
KA-19	Spheroid	100 ~ 114	1.35 ~ 1.39	Steel cord adhesive in rubber

1.4 Butyl rubber vulcanizing resin

Items	Appearance	Softening point(°C)	Sp.Gr.	Features
KPC-1500	Spheroid	75 ~ 90	-	Vulcanizing resin of Buyl rubber

1.5 Liquid resin for tire cord

Items	Appearance	Solid content(%)	Vis(cps)	Features
Kosabond-K	Liquid	19.5 ~ 20.5	5 ~ 15	Pexul adhesive for PET cord
Kosabond-R50	Liquid	49 ~ 53	80 max	Resorcinolic pre-condensate
Kosabond-R50N	Liquid	49 ~ 51	110 max	Resorcinolic pre-condensate
Kosabond-R70	Liquid	69 ~ 71	300 ~ 1300	Resorcinolic pre-condensate
Kosabond-R75	Liquid	74 ~ 76	1400~2600	Resorcinolic pre-condensate
KET-L3000	Liquid	95.0 min	250 max	Epoxy adhesive for PET cord
KET-L6000	Liquid	95.0 min	2000 ~ 10000	Epoxy adhesive for PET cord

2. Hirenol Resins for Electronic Material : 8, 9p

2.1 Phenol novolac resin

※ S.P : Mettler 2°C/min

Items	S.P(°C)	W.C(%)	Viscosity(P)	Free Phenol(%)	Uses & Features
KPE-B2100	44~48	1.0 Max	0.3 Max	0.1 Max	Phenolic novolac
KPE-F2000	64~68	0.3 Max	0.4 Max	0.1 Max	Phenolic novolac
KPH-F2001	86~90	0.2 Max	1.5~2.5	0.1 Max	Phenolic novolac
KPH-F2002	97~101	0.2 Max	6.5~8.5	0.1 Max	Phenolic novolac
KPH-F2003	105~111	0.2 Max	-	0.1 Max	Phenolic novolac
KPH-F2004	118~122	0.2 Max	-	0.1 Max	Phenolic novolac
KPH-F2108	108~111(B&R)	0.2 Max	-	0.2 Max	Phenolic novolac
KPE-F2300	104~108(B&R)	0.2 Max	-	0.2 Max	Phenolic novolac

2.2 o-Cresol novolac resin

※ S.P : B&R 5°C/min

Items	*S.P(°C)	W.C(%)	Color	Free Cresol(%)	Uses & Features
KCE-F2078	78~82	0.2 Max	3 Max	0.1 Max	o-Cresol Novolac
KCE-F2015	88~92	0.2 Max	3 Max	0.1 Max	o-Cresol Novolac
KCE-F2095	93~97	0.2 Max	3 Max	0.1 Max	o-Cresol Novolac
KCE-F2020	96~100	0.2 Max	3 Max	0.1 Max	o-Cresol Novolac
KCE-F2106	104~108	0.2 Max	3 Max	0.1 Max	o-Cresol Novolac
KCE-F2118	116~120	0.2 Max	3 Max	0.1 Max	o-Cresol Novolac

KCE-F2120	118-122	0.2 Max	3 Max	0.1 Max	o-Cresol Novolac
KCE-F2123	121-125	0.2 Max	3 Max	0.1 Max	o-Cresol Novolac
KCE-F2125	123-127	0.2 Max	3 Max	0.1 Max	o-Cresol Novolac

2.3 Bisphenol-A novolac resin

↳ S.P. - Mettler 1°C/min

Items	*S.P[°C]	W.C[%]	Color	Free BPA[%]	Uses & Features
KBE-4113	115-119	0.2 Max	3 Max	20-22	CCLS Hardner, Epoxy Intermediate
KBE-4123	121-125	0.2 Max	3 Max	16-18	
KBE-4127	125-129	0.2 Max	3 Max	15-17	

2.4 Specialty novolac resin

↳ S.P. - Mettler 2°C/min

Items	S.P[°C]	W.C[%]	Viscosity[P]	Free Phenol[%]	Uses & Features
KPH-F3060	60-64	0.2 Max	0.6-0.7	0.1 Max	Phenol Aralkyl Resin
KPH-F3065	64-68	0.2 Max	0.7-1.1	0.1 Max	Phenol Aralkyl Resin
KPH-F3075	73-77	0.2 Max	1.5-3.5	0.1 Max	Phenol Aralkyl Resin
KPH-F3001	80-84	0.2 Max	0.4-1.4	0.1 Max	Multi Functional Novolac
KPH-F3100	109-113	0.2 Max	4.0-8.0	0.1 Max	Multi Functional Novolac
KPE-F3110	125-145	0.2 Max	17-23	1.0 Max	TPE Epoxy Intermediate

2.5 Liquid type resin for CCLS application

Items	N.V[%]	W.C[%]	Viscosity(cps)	Solvent	Uses & Features
KPH-L2002	47.5-49.5	0.2 Max	700 Max	PGMEA	Phenol Novolac Liquid
KPH-L2003	47.5-49.5	0.2 Max	1000 Max	PGMEA	Phenol Novolac Liquid
KPH-L2108	50-52	0.5 Max	370-470	MCS	Phenol Novolac Liquid
KBH-L2121	57-59	0.2 Max	500-700	PGMEA+MEK	Bisphenol-A Novolac Liquid

3. Hiremol Resin for Coating & Paint application based on Epoxy : 10, 11p

Items	Appearance	N.V[%]	Vis(cps)	Color	A.V	OH-value	TMPI[%]	D/C[%]
PL-25A	liquid crystal	68 Max.	10-30	3Max.	-	-	-	-
PL-50		92 Max.	40-90	3Max.	-	-	-	-
PL-100A		70 Max.	40-100	3Max.	-	-	-	-
PL-150		92 Max.	110-150	-	-	-	-	-
PL-400		96 Max.	400-550	2Max.	0.5 ↓	55-65	-	-
PL-1000S		96 Max.	700-1300	-	2 ↓	70-95	25Max.	35Max.
CL-50		95 Max.	35-65	3Max.	0.3 ↓	25-35	-	-
CL-300		96 Max.	200-400	3Max.	0.3 ↓	115-145	-	-

4. Hiremol Resins for Foundry Industry : 12, 13p

4.1 Shell mold process

1) Novolac resin for dry hot coating

Items	S.P. [°C]	G.T. (sec.)	Flow (mm)	Uses & Features
KNS-804	77 - 80	80 - 100	110 - 130	Standard type, high bending strength
KNS-805	80 - 84	50 - 70	60 - 100	Standard type, fast curing
KNS-809	80 - 84	50 - 70	60 - 100	Non-ferrous casting, high collapsibility
KPS-T812	88 - 92	50 - 70	50 - 70	Dump-box type, anti-peel back
KPS-T813	90 - 95	60 - 80	50 - 70	Dump-box type, anti-peel back
KPS-T830	88 - 94	40 - 60	40 - 80	Dump-box type, anti-peel back
KPS-T816	80 - 84	50 - 70	90 - 110	Steel casting, high bending strength
KPS-T816A	88 - 93	50 - 70	40 - 60	Steel casting, anti-peel back

2) Liquid type resins

Items	N.V. (%)	Vis. (cps)	pH	Uses & Features
KPJ-L480AD	72 ~ 74	L ~ U	-	
KRS-700SP	68 ~ 72	400 ~ 600	8.4 ~ 9.2	Double coating

4.2 Furan Process

1) Furan resin

Items	N.V. (%)	Vis. (Ga#)	Sp.Gr.	Uses & Features
KF-975	32 ~ 36	A ₁ ~ A ₄	1.16 ~ 1.18	Gray iron, Ductile, Middle F.A.
KF-980S	28 ~ 32	A ₁ ~ A ₃	1.15 ~ 1.17	Gray iron, Ductile, High F.A.
KF-980H	10 ~ 11	A ₂ ~ A ₅	1.14 ~ 1.16	Steel Casting, Ductile, High F.A.
KF-1975	26 ~ 30	A ₁ max.	1.15 ~ 1.17	Gray iron, Ductile, Middle F.A.
KF-1850	11 ~ 13	A ₃ max.	1.12 ~ 1.15	Gray iron, Ductile, High F.A.
KF-1915	9 ~ 11	A ₃ max.	1.13 ~ 1.16	Steel Casting, Ductile, High F.A.
KF-1915D	15 ~ 18	A ₂ max.	1.14 ~ 1.16	Steel Casting, Ductile, Long bench life

2) Hardener (Organic acids)

Items	Type	A.V.	Vis. (Ga#)	Applicable Sand Temperature
KH-3		150 ± 10	A ₅ ~ A ₃	Above 50 °C, Summer
KH-5		160 ± 10	A ₄ ~ A ₁	40 ~ 50 °C, Summer
KH-10(D)		190 ± 10	A ₄ ~ A ₁	30 ~ 40 °C, Summer
KH-15(D)	Xylene	205 ± 10	A ₄ ~ A ₁	25 ~ 30 °C, Spring or Autumn
KH-20(D)	Sulfonic	220 ± 10	A ₄ ~ A ₁	20 ~ 25 °C, Spring or Autumn
KH-25(D)		240 ± 10	A ₄ ~ A ₁	15 ~ 20 °C, Spring or Autumn
KH-30(D)	Acid	260 ± 10	A ₄ ~ A ₁	10 ~ 20 °C, Spring or Autumn
KH-35(D)		310 ± 10	A ₄ ~ A ₁	5 ~ 15 °C, Winter
KH-40		360 ± 10	A ₄ ~ A ₁	0 ~ 10 °C, Winter
KH-45		380 ± 10	A ₃ ~ A ₁	1 ~ 10 °C, Winter
KH-50		400 ± 10	A ₄ ~ A ₁	-5 ~ 5 °C, Winter

4.3 Phenol-Urethane Process

1) No bake system

Items	N.V. (%)	Vis. (Ga#)	Sp. Gr.	Uses & Features
KSR-8000	50 ~ 54	D ~ H	1.09 ~ 1.11	Part- I, Phenolic Resin
KSR-8500	-	A ₄ ~ A ₁	1.11 ~ 1.14	Part- II, Isocyanate
KSR-8700	-	A ₁ max.	-	Part- III, Amine catalyst

2) Cold box system

Items	N.V. (%)	Vis. (cps)	Sp. Gr.	Uses & Features
KPJ-L4000	45 ~ 60	100 ~ 400	1.06 ~ 1.10	Part- I, Phenolic Resin
KPJ-L4500	75 ~ 80	60 max.	1.12 ~ 1.16	Part- II, Isocyanate

4.4 Ester curable alkaliphenol process

1) Main phenolic resins

Items	N.V. (%)	Vis. (Ga#)	Sp. Gr.	Uses & Features
KPJ-L510	38 ~ 42	100 max.	1.18 ~ 1.22	Suitable for reclaimed sand
KPJ-L520	43 ~ 47	100 max.	1.18 ~ 1.22	Suitable for reclaimed sand, High Strength
KPJ-L530	43 ~ 47	100 max.	1.18 ~ 1.22	High reclaimed sand rate, High Strength
KPJ-L540	38 ~ 42	100 max.	1.18 ~ 1.22	High reclaimed sand rate

2) Hardeners

Items	Type	Sp. Gr.	W.C. (%)	Curing Rate and Applicable Season
KJ-10(S)		1.00 ~ 1.30	1% max.	Very rapid, Winter
KJ-20(S)		1.00 ~ 1.30	1% max.	Rapid, Winter
KJ-30(S)	Mixtures	1.00 ~ 1.30	1% max.	Middle, Spring or Autumn
KJ-40(S)	of	1.00 ~ 1.30	1% max.	Middle, Spring or Autumn
KJ-50(S)	Esters	1.00 ~ 1.30	1% max.	Middle, Spring or Autumn
KJ-60(S)		1.00 ~ 1.30	1% max.	Middle, Spring or Autumn

KJ-70(S)	1.00 ~ 1.30	1% max.	Slow, Summer
KJ-80(S)	1.00 ~ 1.30	1% max.	Slow, Summer
KJ-90(S)	1.00 ~ 1.31	2% max.	Slow, Summer
KJ-100(S)	1.00 ~ 1.31	2% max.	Slow, Summer

5. Hirenol Resins for Refractory : 12, 13p

5.1 Liquid resol resins

Items	N.V. (%)	Vis. (cps)	Sp.Gr.	F.C. (%)	Uses & Features
KEU-98	70 ~ 80	700 ~ 1100	1.18 ~ 1.24	42 ~ 50	Al - Ma - C
KRM-305	67 ~ 71	300 max.	1.16 min.	35 ~ 40	MgO-C, Wetting Agent
KRM-315S	78 ~ 82	1200 ~ 1600 3500 ~ 4500	1.16 ~ 1.26	34 min.	MgO-C, Short-Ageing
KPR-L325A	75 min	3500 ~ 5500	1.19 ~ 1.22	42 min.	Al-Ma-C

5.2 Liquid novolac resins

Items	N.V. (%)	Vis. (cps)	Sp.Gr.	F.C. (%)	Uses & Features
KPR-L350	70 ~ 74	11000 ~ 15000	1.18 ~ 1.20	40 min	MgO-C, Hot-Mixing
KRM-370	73 ± 2	30000 ± 4000	1.205 ± 0.015	44.5 min.	MgO-C, Hot-Mixing
KRM-371	65 ± 5	10000 ± 1000	1.195 ± 0.015	34.0 min.	MgO-C, Hot-Mixing
KRM-371 *	65 ± 5	7000 ± 1000	1.195 ± 0.015	-	MgO-C, Hot-Mixing
KRM-373	73 ± 2	30000 ± 2000	1.205 ± 0.015	44.8 min.	MgO-C, Hot-Mixing
KRM-380	77 ± 2	2250 ± 250	1.205 ± 0.015	39.0 min.	MgO-C, Hot-Mixing
KRM-1096	70 min.	400 ± 50	0.920 ± 0.020	-	Dolomite Stamp

5.3 Powder novolac resin with hexamine

Items	M.P. [°C]	G.T. [sec.]	Flow [mm]	Uses & Features
KNM-401CB	75 min.	40 ~ 60	20 ~ 40	MgO-C, Strength improver, Low Cost

6. Hirenol resins for Impregnation : 14, 15p

6.1 Laminates

Items	N.V. (%)	Vis(cps, Ga)	G.T.(sec)	Uses & Features
KRD-HM2	58-60	F-J	50-60	Helmet, Mechanicals
KRD-HM3	60-64	180-300	60-80	Helmet, Fiber Dipping Binder
KRP-330	49-51	50Max	135-165	Lower Mw, Pre-coat
KND-700BB	61.5-63.5	B-C	55-65	Bobbin
KPD-L737	65-75	800-1300	60-100	High CTI, 94V-0
KRD-745FR	49-51	150Max	50-60	Fishing rod
KRP-770	54-56	150-350	130-170	XPC, 94 HB
KRP-770DS	45-50	-	130-170	Plywood
KPD-L777	52-54	45-65	80-95	Plywood
KPD-L800TG	52-54	70-80	65-75	Tego Film

6.2 Filter paper & separator

Items	N.V. (%)	Vis(cps)	G.T.(sec)	pH	Uses & Features
KPD-L720	56.5-57	450Max	56Max	7.8~8.5	Air, Oil Filter
KPD-726FP	48-52	92Max	100-115	7.8-8.2	BPA Type Air, Oil Filter
KPD-L741	59-61	600Max	53Max	7.2-7.8	Air, Oil Filter
KPD-L730	57-59	400Max	65-70	7.0-7.5	Air, Oil Filter

6.3 Phenol FRP

Items	N.V.(%)	Vis(cps)	G.T.(sec)	Sp.Gr.	Uses & Features
F-420	49-51	150Max	50-60	1.00-1.10	Fishing rod
KPD-320F	58-60	200-600	50-60	1.06-1.07	Helmet
KPD-520F	60-64	180-300	55-65	1.07-1.10	Fiber Dipping Binder
KPD-L700F	74-80	1500-2500	-	-	Fiber Dipping Binder
KPD-950F	66-68	300-600	80-90	1.10-1.12	Alumium Bag Filter Binder
KRP-25L	68-72	350-500	140-180	1.09-1.13	Fiber Dipping Binder
KRP-50L	66-70	600-750	70-80	1.12-1.14	Composite Binder
KPH-L770	-	-	-	-	Hardener(Acid)

6.4 Glass wool & Rock wool

Items	N.V.(%)	Vis(cps)	pH	Sp.Gr.	Uses & Features
KPD-L815GW	47-49	10-15	7.5-8.5	1.12-1.22	Glass wool

✓ 7. Hirenol Resin for Ink : 16p

Items	S.P (°C)	Color	Vis	A.V	Tol(In-Hept)	Tol(IPA)	Features & Uses
✓ KHI-400	160-170	15 Max.	C-F	12-20	36 Min.	7 Max.	Keyless Web, Heatset Web
✓ KHI-925	160-170	11 Max.	L-O	20 Max.	7-14	4-8	Sheet-Fed
KHI-926	165-175	11 Max.	L-N	12-18	8 Min.	5 Max.	Sheet-Fed
✓ KHI-927	155-165	11 Max.	L-O	20 Max.	7-14	4-8	News Paper & Web
KHI-928	155-165	11 Max.	L-O	20 Max.	7-14	4-8	News Paper & Web
KHI-930	150-160	12 Max.	E-I	12-20	700-1200(%)	-	High Speed Web
KHI-955	145-155	14 Max.	B-D	18 Max.	20-30	-	Gelability, Transition
KPI-M500	165-175	12 Max.	L-O	12-18	7-14	3-6	Web, Gelability
KPI-M555	160-170	13 Max.	N+Q	20 Max.	14-20	2-4	Sheet-Fed, Web
KPI-M556	150-160	11 Max.	I-K	12-20	13-16	3-6	Sheet-Fed, Web
KPI-M559	160-170	13 Max.	R-T	30 Max.	15-20	3-6	Sheet-Fed, Web
KPI-M660	165-175	13 Max.	Q-T	30 Max.	15-25	3-6	Sheet-Fed, Web
KPI-M668K	160-170	14 Max.	L-N	25 Max.	25 Min.	8 Max.	Sheet-Fed, Web

8. Hirenol Resins for the CR based Adhesives Industry : 17p

Items	S.P (°C)	Sp.Gr.	Color	Tol(MeOH)	Uses & Features
KHI-900	86-96	1.10-1.20	4 max.	350-450	Long Tack Type
A-100	82-88	1.09-1.11	4 max.	25 min	Middle Tack Type
CKA-1634	88-104	1.09-1.11	4 max.	16-32	Middle Tack Type
CKA-1636	107-121	1.09-1.11	4 max.	7-14	Middle Tack Type
KPA-1800	85-95	1.00-1.20	7 max.	70-120	Short Tack Type
CKA-907	90-100	1.08-1.11	4 max.	4-6	Short Tack Type
KGA-M120	115-125	1.00-1.20	12 max.	-	Rosin-Phenol type
KGA-M200	145-160	1.00-1.20	12 max.	40-80	Rosin-Phenol type
CKA-0909	85-104	1.00-1.10	10 max.	-	Long Tack Type

9. Hirenol Resins for Textile Fiber Fleece Materials (Resin Felt) : 18p

Items	M.P. (°C)	G.T. (sec.)	Flow (mm)	Uses & Features
KNF-100	81-91	42-53	15-32	Semi-Cure, Cure
KNF-100B	81-91	42-53	15-32	semicure(summer season)
KNF-100D	78-88	33-43	18-32	semicure(Winter season)
KNF-225	78-90	35-55	20-35	Cure
KNF-100DS	81-90	35-45	13-28	semicure
KNF-100AS	78-90	35-55	20-35	semicure

10. Hirenol Resins for Friction Materials : 19p

10.1 Powder resins with hexamine

Items	M.P. (°C)	G.T. (sec.)	Flow (mm)	H.C.(%)	Uses & Features
KNB-100PL	90 ± 5	100 ± 20	20 ~ 35	5.0 ± 0.3	Disc brake pad, Lining
KNB-101PL	80 ± 5	35 ± 5	40 ~ 45	9.0 ± 1.0	Semi-metal
KNB-100CN	80 ± 5	70 ± 10	30 ~ 45	5.6 ± 0.3	Disc brake pad, Lining
KNB-130CR	84 ~ 95	50 ~ 85	18 ~ 27	7.0 ~ 7.5	Non-asbestos organics
KNB-189	75 ~ 85	30 ~ 45	25 ~ 45	8.5 ± 0.5	Semi-metal

10.2 Liquid resins

Items	N.V. (%)	Vis. (Ga#)	pH	Sp. Gr.	Uses & Features
KRB-252PA	25 ~ 28	A max.	7.5 ~ 8.5	0.89 ~ 0.91	Disc brake pad adhesive

11. Hirenol Resins for PMC (Phenolic Molding Compound) : 19p

Items	S.P. (°C)	G.T. (sec.)	Flow (mm)	Uses & Features
KPM-F2009	101 ± 3	110 ± 30	65 ± 25	Phenolic molding compound
KPM-F2006	96 ~ 102	70 ± 10	50 ± 10	Phenolic molding compound, Low Cost
KPG-F2001	112 ~ 116	50 ± 10	20 ± 5	Phenolic molding compound
KPG-F2002	104 ~ 106	-	-	Phenolic molding compound

12. Hirenol Resins for The Grinding Wheel : 20p

12.1 Powder resins with hexamine

Items	M.P. (°C)	G.T. (sec.)	Flow (mm)	H.C.(%)	Uses & Features
KNG-100	80 ~ 90	50 ~ 58	27 ~ 39	8.8 ± 0.5	Offset Wheel
KNG-119	86 ~ 94	45 ~ 55	18 ~ 25	8.0 ± 0.3	Cutting Wheel

12.2 Liquid type resins

Items	N.V. (%)	Vis. (cps)	pH	Tol(Water)	Uses & Features
KRG-700	69 ~ 73	400 ~ 570	7.9 ~ 8.3	50 ~ 150	Wetting agent

13. Hirenol Resins for Coated Abrasives (Liquid Type) : 21p

Items	N.V. (%)	Vis. (cps)	pH	Tol(Water)	Uses & Features
KSP-5001	50 ~ 54	1200 ~ 2500	9.0 ~ 10.0	2000 ↑	Treatment of backing cloth
KSP-5003	73 ~ 80	2000 ~ 5000	7.9 ~ 8.1	100 ↑	Make Coating
KSP-5006A	74 ~ 78	1000 ~ 2000	8.7 ~ 9.2	200 ~ 400	Size Coating
KSP-5009	67 ~ 71	700 ~ 1500	8.0 ~ 9.0	100 ~ 200	Size Coating
KSP-5010	65 ~ 70	D ~ G	9.0 ~ 10.0	2000 ↑	Treatment of backing cloth

Sp.Gr. Specific Gravity

W.C. Water Content

N.V. Non-Volatile Content

S.P. Softening Point

Vis. Viscosity

H.C. Hexamine Content

A.V. Acid Value

G.T. Gelation Time

F.C. Fixed Carbon

※ Aboves are representative grades. It is possible to be changed without notice.
For the details, it is required to contact us.