Synthetic resins : typical properties chart / Hercules Powder Company.

HERCULES*

*HERCULES TRADEMARK

SYNTHETIC RESINS

typical properties chart

HERCULES® SYNTHETIC RESINS *typical properties chart*

TYPICAL PROPERTIES OF HERCULES SYNTHETIC RESINS

The chart below presents those physical and chemical properties which are of prime importance to the many end uses for Hercules synthetic resins. The figures shown are average values for typical samples of these resins: they should not be construed as specifications. Information on current sales specifications, suggested uses, and established applications technology is given in product data sheets, bulletins, and other technical literature which are available on request.

Principal uses are identified as follows: **A** – Adhesives **G** – Chewing Gum **I** – Inks **L** – Lacquers **P** – Paints and Varnishes **O** – Organosols and Plastisols

Product	Description	Principal Uses	Acid Number	Color USDA Resin Scale	Softening Point of Resin or Solids, Hercules Drop Method °C.	Softening Point of Resin or Solids, Hercules Drop Method °F.	Viscosity and Color: % Resin Solids	Viscosity and Color: Solvent	Viscosity, Gardner-Holdt at 25°C.	Viscosity and Color: Color, Gardner	Weight per Gal. at 25°C., lb.
ABALYN®	methyl ester of rosin	L P O	7	–	liquid		100	–	Z1	6.5	8.6
ABITOL®	technical hydroabietyl alcohol	A L P	0.3	–	balsamic		–	–	–	<1	8.4
ABITOL-90X	Abitol, 90% solids in xylene	A L P	0.3	–	liquid		90	xylene	Z-Z1	<1	8.3
CELLOLYN® 21	phthalate ester of technical hydroabietyl alcohol	A L	8	–	63	145	75	toluene	–	4	8.7
CELLOLYN 95-80T	technical hydroabietyl alcohol-derived alkyd, 80% solids in toluene	I L	9	–	54	129	80	toluene	S	3.5	8.5
CELLOLYN 98-80T	technical hydroabietyl alcohol-derived alkyd, 80% solids in toluene	I L	18	–	74	165	80	toluene	Y-Z	3.5	8.8
CELLOLYN 102	modified pentaerythritol ester of rosin	L P	35	WG	133	271	60	toluene	J	9	9.4
CELLOLYN 104	internally plasticized pentaerythritol ester of rosin	L	31	N	100	212	60	toluene	I-J	9	9.4
CELLOLYN 502-60X	nondrying alkyd resin, 60% solids in xylene	L	4	–	ca. 67	ca. 153	60	xylene	Z2	2.3	8.7
CELLOLYN 515-60X	nondrying alkyd resin, 60% solids in xylene	L	8	–	ca. 50	ca. 122	60	xylene	V	1.5	8.7
CELLOLYN 525-60X	nondrying alkyd resin, 60% solids in xylene	L P	7	–	71	160	60	xylene	Y-Z	2	8.7
CELLOLYN 582-60X	nondrying alkyd resin, 60% solids in xylene	L	3	–	ca. 50	ca. 122	60	xylene	Y	1.5	8.5
CELLOLYN 604-60X	oxidizing alkyd resin, 60% solids in xylene	P	10	–	73	163	60	xylene	Y	5	8.3
ESTER GUM 8D	glycerol ester of rosin purified by steam distillation	G	7	WG	91	196	60	mineral spirits	B	8.5	8.9
ESTER GUM 8L	glycerol ester of rosin	A P	7	WG	91	196	60	mineral spirits	B	8.5	8.9
FLEXALYN® 80M	diethylene glycol ester of rosin, 80% solids in mineral spirits	A	8	–	44	111	80	mineral spirits	U	9	8.4
HERCOLYN® D	hydrogenated methyl ester of rosin purified by steam distillation	G O	7	–	liquid		100	–	Z2-Z3	2.5	8.5
LEWISOL® 7	glycerol ester of modified rosin	I	8	K	168	334	50	low-KB hydrocarbon	W	11.5	9.0
LEWISOL 28	maleic-modified rosin ester	L	36	WG	141	286	60	toluene	E-F	8.5	9.4
NEOLYN® 20	rosin-derived elastomeric resin	I L O	10	N	73	163	100	–	3[1]	–	9.8
NEOLYN 23-75T	rosin-derived elastomeric resin, 75% solids in toluene	I L O	5	–	72	162	75	toluene	U-V	10.5	8.9
NEOLYN 35D	rosin-derived elastomeric resin	I L O	8	N	87	189	75	toluene	Z3	–	9.8
NEOLYN 40	rosin-derived elastomeric resin	A L O	12	N	balsamic		100	–	2.2[2]	–	9.7
NEOLYN 72	rosin-derived alkyd-type resin	*	5	N	107	225	–	–	–	–	10.2
NEOLYN 91	rosin-derived alkyd-type resin	*	8	N	117	243	35	diisooctyl phthalate	Z1-Z2	7.5	9.4
NEOLYN 223	rosin-derived elastomeric resin, 50% solids in diisooctyl phthalate	L O	4	–	72	162	50	diisooctyl phthalate	Z4	9.5	8.9
PE TETRASTEARATE	pentaerythritol ester of stearic acid	L	1	–	67	153	50	toluene	–	6	8.1
PENTALYN® A	pentaerythritol ester of rosin	A I P	12	N	111	232	60	mineral spirits	G	9	8.9
PENTALYN A-60M	Pentalyn A, 60% solids in mineral spirits	A I P	7	–	111	232	60	mineral spirits	G	9	7.9
PENTALYN 825	phenolic-modified resin	P	34	N	116	241	60	toluene	G	10.5	9.7
PENTALYN 856	pentaerythritol-derived, heat-reactive resin intermediate	P	132	N	122	234	–	–	–	–	9.7
PENTALYN C	pentaerythritol ester of polymerized rosin	A P	14	M	135	275	60	mineral spirits	S	9.5	9.1
PENTALYN G	modified pentaerythritol ester of rosin	A I P	14	WG	135	275	60	mineral spirits	V	9.5	9.1
PENTALYN H	pentaerythritol ester of hydrogenated rosin	A	13	N	104	219	60	mineral spirits	C	–	8.9
PENTALYN K	pentaerythritol ester of dimeric resin acids	A I	14	K	192	378	50	mineral spirits	V	12.5	9.0
PENTALYN X	modified pentaerythritol ester of rosin	I P	14	N	159	318	50	mineral spirits	V	9	9.2
PENTALYN 255	alcohol- and alkali-soluble resin	I *	196	N	174	349	40	diethylene glycol	Y	9.5	9.5
PENTALYN 803A	phenolic-modified pentaerythritol ester of rosin	I P	17	M	167	333	50	toluene	F	10.5	9.2
PENTALYN 830	alcohol-soluble modified ester of rosin	I	78	N	116	241	60	ethanol[3]	E	9.5	9.0
PENTALYN 833	phenolic-modified pentaerythritol ester of rosin	I P	14	M	183	361	60	xylene	Z3	10.5	9.2
PENTALYN 856	alcohol-soluble modified ester of rosin	I	142	N	130	266	–	–	–	–	9.1
PENTALYN 860	pentaerythritol ester of dimeric resin acids	I	15	K	172	342	50	mineral spirits	T	11.5	9.1
PETREX® ACID	resinous terpene polybasic acid	I	535	X	44	111	75	toluene	F-G	–	9.1
PETREX 55-70A	alkyd derived from terpene polybasic acid, 70% solids in ethanol[3]	I	100	–	104	219	70	ethanol[3]	Y	7	9.0
PETREX 7-75T	alkyd derived from terpene polybasic acid, 75% solids in toluene	L	33	–	50	122	75	toluene	X	6	9.4
POLY-PALE® ESTER 1	ethylene glycol ester of polymerized rosin	A	7	N	83	181	–	–	–	–	8.9
POLY-PALE ESTER 10	glycerol ester of polymerized rosin	A	6	N	112	234	60	mineral spirits	F	–	9.0
STAYBELITE ESTER® 3	triethylene glycol ester of hydrogenated rosin	A	6	N	viscous liquid		100	–	380[4]	–	9.0
STAYBELITE ESTER 5	glycerol ester of hydrogenated rosin purified by steam distillation	G	5	WW	81	178	–	–	–	–	8.8
STAYBELITE ESTER 10	glycerol ester of hydrogenated rosin	A	8	WG	84	183	75	toluene	I-M	9	8.9
VINSOL® ESTER GUM	glycerol ester of a dark hydrocarbon-insoluble pine wood resin	L	18	dark red to black	148	298	–	–	–	–	10.0

*Information on specialized uses for these resins available from Hercules technical representatives

(1): Brookfield, poises at 160°C. (2): Brookfield, poises at 121°C. (3): Formula 3A denatured alcohol. (4): Saybolt Universal, seconds at 100°C.

HERCULES® SYNTHETIC RESINS *typical properties chart*

The resins listed herein have in common one distinctive feature —all are produced under rigid control for high, uniform quality. This listing of characterizing data includes resins that vary from liquids to high-melting solids, from dark to water-white in color, and from neutral and inert to high acid number and reactive resin intermediates.

Only the largest volume fields of application — adhesives, chewing gum, inks, paints and varnishes, and lacquers — are indicated on the chart, since the range of properties available in the Hercules family of synthetic resins is so broad that collectively they have an almost endless variety of specific applications.

Certain Hercules synthetic resins are cleared, or are in the process of being cleared, for use in accordance with Food and Drug Administration requirements. Information on the current FDA status of these resins is available upon request.

In addition to the resins listed on this chart, improved forms and new synthetic resins are being developed constantly, some of which are close to the commercial stage. Hercules Pine & Paper Chemicals Department also offers a broad range of rosins, modified rosins, stabilized rosins, and related resins. Properties of these products are charted in a companion booklet, Form 900-49. If this is not already in your files, consult your Hercules representative.

		A I P								
PENTALYN G	modified pentaerythritol ester of rosin	A	13	N	104	219	60	spirits mineral spirits	C	—	8.9
PENTALYN H	pentaerythritol ester of hydrogenated rosin	A	14	WG	135	275	60	spirits mineral spirits	V	9.5	9.1

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