



PAINTS AND COATINGS

Paints and coatings are widely used in the construction, transportation, home and food industries. They are used for decorative and protective purposes and to improve aesthetics or performance. Calumet[™] offers a variety of solvents, paraffinic and naphthenic oils, waxes, white oils and gels to meet the specific requirements of the paints and coatings industry.

APPLICATIONS

- Automotive
- Industrial Coatings
- Packaging
- Paint
- Pulp and Paper
- Roofing
- Rust Inhibitors
- Wood Preserver

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SOLVENTS AND BASE OILS

Solvents and base oils are used as a carrier in paints and coatings to dissolve other ingredients. Depending on the application, the materials can be utilized for protection, coloration and texture in paints. They also can be used to make pigment and binder into a thinner and improve ability to spread on surfaces. In a coating application, they can change the surface properties of the substrate such as adhesion, corrosion resistance and wear-ability. These raw materials can be excellent for oil-based paints, stains, varnishes and enamels.

SOLVENTS

PROPERTIES	METHOD	ALIPHATIC SOLVENTS						LOW VAPOR PRESSURE SOLVENTS		CONOSOL® ISOPARAFFINIC SOLVENTS						
		200-230 <1%	210-245 <1%	VM&P <1%	Mineral Spirits	Mineral Spirits <1%	142 Flash <1%	LVP 100	LVP 200	C-145	C-170	C-170ES	C-200	C-215	C-260	C-340
API Gravity @ 60 °F	ASTM D4052	62.3	61.8	59.4	53.1	52.2	49.3	45.9	42.9	48.0	42.5	40.1	42.5	48.7	39.9	34.6
Density @ 60 °F (Pounds Per Gallon)	ASTM D1250	6.088	6.103	6.180	6.385	6.422	6.524	6.649	6.766	6.563	6.770	6.865	6.770	6.533	6.873	7.092
Flash Point TCC (T), COC (C) PMCC (P) (°F)	ASTM D56 ASTM D92 ASTM D93	32 (T)	32 (T)	62 (T)	104 (T)	115 (T)	152 (T)	201 (P)	242 (P)	148 (T)	178 (P)	183 (P)	212 (P)	208 (P)	285 (P)	341 (C)
Color, Saybolt	ASTM D156	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Refractive Index @ 25 °C	ASTM D1218	-	1.4033	1.4087	1.4242	1.4245	1.4297	1.4380	1.4460	1.4347	1.4466	1.4507	1.4437	1.4510	1.4536	1.4658
Aromatics (Vol. %)	ASTM D1319	<1.0	<1.0	<1.0	8.8	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5	5.0	0.26	0.20	0.30	0.28
Distillation, IBP (°F)	ASTM D86	207	209	249	307	324	371	431	485	377	400	406	434	432	519	599
Distillation, 50% (°F)	ASTM D86	214	218	266	343	360	385	444	502	397	433	452	460	462	550	611
Distillation, DP (°F)	ASTM D86	237	245	295	404	405	412	474	538	459	508	512	519	503	596	642
Specific Gravity @ 60/60 °F	ASTM D1250	0.7302	0.7320	0.7412	0.7666	0.7702	0.7826	0.7975	0.8115	0.7883	0.8132	0.8245	0.8131	0.7845	0.8237	0.8518
Aniline Point (°F)	ASTM D611	136.4	139.9	152.8	152.2	163.5	171.2	172.8	179.5	162.3	165.2	157.6	168.2	188.6	191.0	189.8
Kauri-Butanol Value	ASTM D1133	33.6	34.1	32.4	33.8	30.8	32.8	26.7	25.0	28.4	31.6	32.8	28.8	24.4	23.8	21.7
Pour Point (°F)	ASTM D97	<-70	<-70	<-70	<-60	<-60	-60	-27	-9	<-80	<-80	-50	-40	-42	-30	-30
Viscosity @ 40 °C (cSt)	ASTM D445	-	-	-	-	-	-	1.91	2.80	1.46	2.08	2.15	2.30	2.01	3.74	7.86
Meets CARB Requirements	Method 310	-	-	-	-	-	-	Yes	Yes	-	-	-	Yes	Yes	Yes	Yes
Vapor Pressure @ 20 °C (mm Hg)	ASTM D2879	-	-	-	-	-	-	0.11	0.03	-	-	-	0.10	0.10	0.01	<0.01
Flammable		√	√	√	√	√										
Combustible							√			√	√	√				
Non-Hazardous								√	√				√	√	√	√

DRAKESOL™ SPECIALTY SOLVENTS

PROPERTIES	METHOD	DRAKESOL 220	DRAKESOL 260
API Gravity @ 60 °F	D4052	42.7	41.8
Specific Gravity, 60/60 °F	D4052	0.8126	0.8164
Flash Point, PMCC (°F)	D93	240	263
Color, Saybolt	D156	30	30
Kauri-Butanol Value	D1133	25.0	23.2
Refractive Index @ 20 °C	D1218	1.4460	1.4488
Distillation Range (°F)	D86		
IBP		485	511
50%		502	541
EP		538	594
FDA 21 CFR 172.884	FDA	PASS	PASS
FDA 21 CFR 178.3650	FDA	PASS	PASS
FDA 21 CFR 573.740	FDA	PASS	PASS
FDA 21 CFR 573.680	FDA	PASS	PASS
FDA 21 CFR 178.3620 (b)	FDA	PASS	PASS

BASE OILS

CALSOL™ SPECIALTY PROCESS OILS

PROPERTIES	METHOD	5550	806
Viscosity @ 40 °C (cSt)	D445	97.1	9.5
Viscosity @ 100 °C (cSt)	D445	9.0	2.4
Viscosity @ 100 °F (SUS)	D2161	514.4	59.8
Viscosity @ 210 °F (SUS)	D2161	56.8	34.2
API Gravity @ 60 °F	D4052	25.2	26.8
Specific Gravity @ 60 °F	D1250	0.9029	0.8938
Viscosity-Gravity Constant	D2501	0.840	0.861
Density (Pounds per Gallon)	D1250	7.529	7.452
Molecular Weight	D2502	420	270
Pour Point (°F)	D97	-36	-82
Color, ASTM	D1500	L0.5	L0.5
UV Absorptivity @ 260 nm	D2008	0.5	0.9
Volatility @ 225 °F (Wt.%)	D972	0.3	60.4
Flash Point, COC (°F)	D92	438	302
Refractive Index @ 20 °C	D1218	1.4918	1.4871
Aniline Point (°F)	D611	209.5	159.5
Clay-Gel (Wt.%)	D2007		
Asphaltenes		0	0
Polar Compounds		0	0
Aromatics		18	28
Saturates		82	72
Carbon Type Analysis (%)	D2140		
Ca		4	8
Cn		44	50
Cp		52	42
FDA 21 CFR 178.3620 (c)	FDA	PASS	PASS

HYDROCAL™ NAPHTHENIC BASE OILS

PROPERTIES	METHOD	38	100	500	1200
Viscosity@ 100 °F (SUS)	D2161	37.5	109.3	510.3	1227.1
Viscosity @ 210 °F (SUS)	D2161	30.3	38.7	56.3	79.3
Viscosity @ 40 °C (cSt)	D445	3.3	20.6	96.4	227.6
Viscosity @ 100 °C (cSt)	D445	1.3	3.7	8.9	14.8
Viscosity Index	D2270	85	20	48	44
API Gravity @ 60 °F	D4052	29.8	25.7	24.7	23.2
Flash Point, COC (°F)	D92	219	329	429	471
Pour Point (°F)	D97	-81	-64	-21	-11
Color, ASTM	D1500	L0.5	L0.5	1.0	L1.5
Aniline Point (°F)	D611	138.6	175.3	206.8	213.4
Aniline Point (°C)	D611	59.2	80.3	97.1	100.8
Neut. No (mg KOH/g)	D974	0.01	0.01	0.01	0.01
Sulfur (Wt.%)	D4294	0.0024	0.0210	0.0025	0.0698
Refractive Index @ 20 °C	D1218	1.4768	1.4910	1.4924	1.5012
Clay Gel (Wt.%)	D2007				
Asphaltenes		0	0	0	-
Polar Compounds		0	0	0	-
Aromatics		25	24	18	-
Saturates		75	76	82	-
Carbon Type Analysis (%)	D2140				
Ca		-	8	3	10
Cn		-	47	47	36
Cp		-	45	50	54
FDA 21 CFR 178.3620 (c)		-	PASS	PASS	PASS

CALPAR™ PARAFFINIC BASE OILS

PROPERTIES	METHOD	60	75	100	325	600	2500
Viscosity @ 100 °F (SUS)	D2161	51.3	74.3	111.4	330.3	640.5	2641.2
Viscosity @ 210 °F (SUS)	D2161	33.4	36.8	40.3	53.9	69.4	155.3
Viscosity @ 40 °C (cSt)	D445	7.3	13.2	21.3	63.7	122.1	484.5
Viscosity @ 100 °C (cSt)	D445	2.1	3.1	4.2	8.2	12.4	31.7
Viscosity Index	D2270	71	93	95	97	92	96
API Gravity @ 60 °F	D4052	36.2	34.6	32.7	30.4	28.4	27.0
Flash Point (°C)	D92	159	194	207	250	261	316
Flash Point (°F)	D92	318	382	406	481	502	600
Pour Point (°C)	D97	-49	-18	-19	-12	-13	-7
Pour Point (°F)	D97	-57	0	-2	10	9	20
Color, ASTM	D1500	L0.5	L0.5	L0.5	L1.0	L2.0	L3.5
Aniline Point (°C)	D611	91.6	99.5	102.4	114.0	117.0	133.1
Aniline Point (°F)	D611	196.9	211.2	216.4	237.0	243.0	271.5
Saturates (Mass %)	D2007	94.0	94.9	92.1	92.3	86.7	87.0
Sulfur (Mass %)	D4294	0.0007	0.0007	0.0021	0.0050	0.0075	0.0087

SYNERGEL®

SYNERGEL® can be used as an additive for additional performance properties such as thickening agents or rheology modifiers. SYNERGEL can help control shelf stability, ease of application, open time/wet edge and sagging in paint.

PROPERTIES	METHOD	SYNERGEL LVP 100	SYNERGEL VM&P	SYNERGEL MS 500
Viscosity @ 25 °C (cPs)	D2983	35,000	43,990	43,500
Color, Saybolt	ASTM D156	-	26	28
Flash Point PMCC (°F)	ASTM D93	200	65.5	109
Specific Gravity @ 25 °C	ASTM D4052	0.7950	0.7486	0.7600

WHITE OILS

White oils can be used as protective coatings for food to prevent bruising and slow ripening by controlling the exchange of CO2 and oxygen. They can also be used to coat eggshells as a pore seal, to control dust in agriculture applications, and coat troughs for the baking industry.

PROPERTIES	METHOD	DRAKEOL® 5	DRAKEOL 7	DRAKEOL 9	DRAKEOL 21	DRAKEOL 35	DRAKEOL GDLP
API Gravity @ 60 °F	D4052	35.7	35.9	35.5	33.3	31.3	34.9
Specific Gravity @ 60/60 °F	D4052	0.8180/0.8610	0.8330/0.8610	0.8330/0.8610	0.8530/0.8760	0.8640/0.8810	0.8473
Color, Saybolt	D156	30	30	30	30	30	30
Viscosity @ 40 °C (cSt)	D7042	7.0/9.6	10.8/13.6	14.2/17.0	38.4/41.5	65.8/71.0	11.18
Viscosity @ 100 °F (SUS)	D2161	50.2/60.0	65/75	80/90	200/215	340/365	50/85
Flash Point °F, COC	D92	337	369	391	439	467	349
Odor	USP/NF	PASS	PASS	PASS	PASS	PASS	PASS
Acidity	USP	PASS	PASS	PASS	PASS	PASS	PASS
Infrared Absorption	USP	PASS	PASS	PASS	PASS	PASS	PASS
Limit of PAH	USP	PASS	PASS	PASS	PASS	PASS	PASS
Limit of Sulfur Compounds	USP	PASS	PASS	PASS	PASS	PASS	PASS
Readily Carbonizable Subs	USP	PASS	PASS	PASS	PASS	PASS	PASS
Solid Paraffins	USP	PASS	PASS	PASS	PASS	PASS	PASS
FDA 21 CFR 172.878	FDA	PASS	PASS	PASS	PASS	PASS	PASS

WAX

Waxes can be used in pulp and paper coatings to make products stronger, harder, introduce water-resistant properties, and impart corrosion protection.

PROPERTIES	METHOD	FULLY REFINED PARAFFIN	MICROCRYSTALLINE/PETROLATUM			SLACK WAX
		FR- 5717	CG Micropet	CW-8030K	CW-190	325 Slack Wax
Melt Point (°C)	D87	57	72	79	85	53
Melt Point (°F)	D87	135	161	174	185	127
Oil Content (%)	D721	<0.5	8	2	1.5 max	25 max
Penetration @ 77 °F	D1321	13	86*	27	15	63
Color, Saybolt	D156	30	6	29	23	27
FDA 21 CFR 172.886	FDA	YES	NO	YES	YES	NO

*Penetration @ 77 °F ASTM D937 (Cone)

TECHNICAL ASSISTANCE

For product or technical questions, contact your Sales Representative or Calumet Product Support at (800) 437-3188 or email technical@calumet.com.

Calumet's sampling and testing procedures in effect at the time of production will be used for certification testing. Results may be based on tank certification, manufacturing data, periodic testing and/or most recent product restock. Typical values only represent the values one would expect if the property were tested in our laboratories with our test methods on the specified date. Some product properties are not frequently measured, and accordingly typical values are not based on a statistically relevant number of tests. The information in this document relates only to the named product. The user is solely responsible for all determination regarding any use and any process.



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Rev. 2/24

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