

Property	ASTM Method	Min/Max/Typical	Product Grade			
			3P	4P	6P	12P
Product Code:	---	---	1041628	1041629	1041630	1041631
Viscosity:						
cSt @ 100°C	D 445	Min/Max	2.9-3.2	4.07-4.25	6.38-6.58	11.80-12.62
Pour Point, °F	D 5950	Max	-17	10	10	10
°C		Max	-27	-12	-12	-12
Flash Point, °F	D 92	Min	350	390	420	500
°C		Min	177	199	216	260
Color, ASTM	D 1500	Max	0.5	0.5	0.5	0.5
Volatility:						
% @ 630°F	D 2887	Max	5.0	---	---	---
% @ 700°F	D 2887	Max	---	10.0	5.0	---
% @ 800°F	D 2887	Max	---	---	---	5.0
Composition %:						
Saturates	UV Correl	Min	99	99	99	99
Water, ppm	D 6304	Max	50	50	50	50

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Gravity, °API @ 60°F (15.5°C)	D 4052	Typ	35.1	35.6	32.9	30.2
Specific Gravity @60°F(15.5°C)	D 4052	Typ	0.8493	0.8468	0.8607	0.8751
Density, lb/gal @ 60°F(15°C)	D 4052	Typ	7.09	7.07	7.18	7.30
Viscosity						
cSt @ 40°C	D 445	Typ	12.2	20.2	40.8	113.0
cSt @ 100°C	D 445	Typ	3.03	4.2	6.4	12.1
SUS @ 100°F	D 2161	Typ	74	106	210	593
SUS @ 210°F	D 2161	Typ	36	40	48	68
Pour Point, °F	D 5950	Typ	-22	7.5	6.7	8.7
Pour Point, °C		Typ	-30	-14	-14	-13
Flash Point, °F	D 92	Typ	376	421	459	511
Flash Point, °C		Typ	191	216	237	266
Aniline Point, °F	D 611	Typ	209	227	237	257
Aniline Point, °C		Typ	98	108	114	125
Total Acid No.	D 664	Typ	<0.05	<0.05	<5	1.5
Color, Saybolt	D 156	Typ	30+	30+	30+	30+
Color, ASTM	D 1500	Typ	<0.05	<0.05	<0.05	<0.5
Sulfur, ppm	D 7039	Typ	<0.05	<0.05	<0.05	<0.5
Volatility						
% @ 630°F	D 2887	Typ	3.5	---	---	---
% @ 700°F	D 2887	Typ	---	8.1	1.0	---
% @ 800°F	D 2887	Typ	---	---	---	4.0
Composition %						
Saturates	UV Correl	Typ	>99	>99	>99	>99
Aromatics			0	0	0	0
Polar Compounds			0	0	0	0
Carbon Type Composition:	D 2140	Typ				
Ca, wt%			0	0	0	0
Cn, wt%			43	35	38	35
Cp, wt%			57	65	62	65
Water, ppm	D 6304	Typ	27	35	35	31
Viscosity-Gravity Constant	D 2501	Typ	0.821	0.803	0.807	0.797
Molecular Weight	NOISE	Typ	311	394	443	512
UV Absorptivity @ 260 nm	D 2008	Typ	0.07	0.06	0.222	1.24
Refractive Index @ 20°C	D 1218	Typ	1.463	1.465	1.472	1.500

Additional Tests:

Property	ASTM Method	Min/Max/Typical	Product Grade			
			3P	4P	6P	12P
Dioxin Precursors, ppb	GC/MS					
Dibenzofuran		Typ	Not Detected	Not Detected	Not Detected	Not Detected
Dibenzodioxin		Typ	Not Detected	Not Detected	Not Detected	Not Detected
Volatility, wt%						
22 hrs @ 225°F	D 972		2.68	0.65	0.1	<0.01
3 hrs @ 325°F	D 6 (modified)		6.30	2.00	0.63	<0.1
Autoignition Temp., °F	E 659	Typ	549	631	678	849
Autoignition Temp., °C	E 659	Typ	287	333	359	454
VOCs, wt%	D 2369	Typ	2.9	1.2	0.74	0.1
Un sulfonated Residue, vol%	D 483	Typ	100	100	100	100
Sulfated Ash, wt%	D 482	Typ	<0.001	<0.001	<0.001	<0.001
Conradson Carbon Residue, wt%	D 189	Typ	<0.1	<0.1	<0.1	<0.1
Ramsbottom Carbon Residue, wt%	D 524	Typ	0.03	0.02	0.03	0.03