

Effective Date: 6/1/13

Phillips 66 Carrier LLC Pipeline Specifications

Sweeny to Pasadena Pipeline

click on product information to go to associated specification

Spec Ref. #	Product Name	Destination(s)
8301	Distillate, Jet A, High Sulfur (3000 ppm max)	Phillips 66 Carrier LLC Pasadena PL; Colonial PL- Grade 54; Explorer PL- Code 51; Pasadena Rack
8302	Distillate, Jet A / #1-K Kero, Low Sulfur (400 ppm max)	Phillips 66 Carrier LLC Pasadena PL; Colonial PL- Grade 55; Explorer PL- Meets Code 51 (high sulfur jet); TEPPCO PL- Meets Code 510 (high sulfur jet); Pasadena Rack
8304	Distillate, Jet A / #1 Diesel Fuel, Ultra-Low Sulfur (15 ppm max)	Phillips 66 Carrier LLC Pasadena PL; Pasadena Rack
8305	Distillate, Jet A / #1 Diesel Fuel / #1-K Kero, Ultra-Low Sulfur (15 ppm max)	Phillips 66 Carrier LLC Pasadena PL; Colonial PL- 51; Explorer PL- Meets Code 51 (high sulfur jet); TEPPCO PL- Meets Code 510 (high sulfur jet); Pasadena Rack
8315	Distillate, #2 Diesel Fuel / Fuel Oil, Ultra-Low Sulfur (15 ppm max)	Phillips 66 Carrier LLC Pasadena PL; Colonial PL- Grade 61; Explorer PL- Code 75; TEPPCO PL- Code 715; Pasadena Rack
8317	Distillate, #2 Diesel Fuel, Ultra-Low Sulfur (15 ppm max)	Phillips 66 Carrier LLC Pasadena PL; Magellan PL- X Grade
8322	Gasoline, Conventional, All Grades	Phillips 66 Carrier LLC Pasadena PL; Colonial PL- Grades M1 to M5 (Reg.), V1 to V5 (Prem.); Explorer PL- Codes 46 (Reg.), 36 (Prem.); Magellan PL- Grades N (Reg.), A3 (Prem.); TEPPCO PL- Codes 400 (Reg.), 230 (Prem.)
8324	Gasoline, RBOB, All Grades	Phillips 66 Carrier LLC Pasadena PL; Explorer PL- Codes 4S, 4T, 4U, 4X (Reg.), Codes 3S, 3T, 3U, 3X (Prem.)

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Phillips 66 Carrier LLC Pipeline Specifications

Sweeny to Pasadena Pipeline

click on product information to go to associated specification

Spec Ref. #	Product Name	Destination(s)
8322	Volatility Schedule, Conventional, All Grades	Phillips 66 Carrier LLC Pasadena PL; Magellan PL- Grades A3, N
8322	Volatility Schedule, Conventional, All Grades	Phillips 66 Carrier LLC Pasadena PL; TEPPCO PL- Codes 230, 400
8322	Volatility Schedule, Conventional, All Grades	Phillips 66 Carrier LLC Pasadena PL; Colonial PL- Grades M1 to M5, V1 to V5
8322	Volatility Schedule, Conventional, All Grades	Phillips 66 Carrier LLC Pasadena PL; Explorer PL- Codes 36, 46
8324	Volatility Schedule, RBOB, All Grades	Phillips 66 Carrier LLC Pasadena PL; Explorer PL- VOC Region 1- Codes 3S, 3T, 4S, 4T
8324	Volatility Schedule, RBOB, All Grades	Phillips 66 Carrier LLC Pasadena PL; Explorer PL- VOC Chicago Region 2- Codes 3U, 3X, 4U, 4X

Effective Date: 6/1/13

Spec Ref. #: 8301

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Colonial PL- Grade 54;
Explorer PL- Code 51;
Pasadena Rack

Sweeny to Pasadena Pipeline

Distillate, Jet A, High Sulfur (3000 ppm max)

Property	Test Method	Units	Min	Max	Specific	Note#
Acid Number	D3242 Acidity in Turb Fuel	mg KOH/g		0.1		
Additives	General Note					1
API Gravity (60 Deg F)	D287, D1298, D4052	API	37	51		
Appearance	Visual		Clear & Br			2
Aromatics	D1319 Hydrocarbon Typ by FIA	Vol%		25		
Color, Saybolt	D6045 Color by Auto TriStim		+20			
Copper Strip Corrosion	D130 Cu Str 2 Hr @ 212 F	Rating		1		
Dist 10 Vol% Rec, corr	D86 Dist at Atm Press	Deg F		400		
Dist 50 Vol% Rec, corr	D86 Dist at Atm Press	Deg F	Report			
Dist 90 Vol% Rec, corr	D86 Dist at Atm Press	Deg F	Report			
Dist End Pt	D86 Dist at Atm Press	Deg F		572		
Dist Loss, corr	D86 Dist at Atm Press	Vol%		1.5		
Dist Residue	D86 Dist at Atm Press	Vol%		1.5		
Electrical Conductivity	D2624 Elec Conductivity	pS/m		Report		
Existent Gum	D381 Gum Content by Jet Evap	mg/100ml		7.0		
Filtrat particulate content	D2276 Partic in Av Fuels	mg/gal		Report	Explorer	
Filtrat time or vol	D5452 Partic in Av Fuels			Report		
Filtrat total solids or partic	D5452 Partic in Av Fuels	mg/L		Report	Colonial	
Flash Pt	D56 Flash Pt by TCC	Deg F	108			
Freeze Pt	D5972 Freeze Pt by Ph Tech	Deg C		-40.0		3
JFTOT Press Drop	D3241 JFTOT@ 275 C	mm Hg		25		4
JFTOT Tube Rating	D3241 JFTOT@ 275 C	Rating		<3		4
Mercaptan Sulfur	D3227 Thiol Merc S by Titra	Wt%		0.003		
MSEP	D3948 Water Sep by MSEP	Rating	85			
Naphthalenes	D1840 Naphthalenes by UV	Vol%		3.0		
Net Heat of Combustion	D3338 Net Heat of Comb	BTU/lb	18,400			
Product Description	See Note					5
Referee Methods	See Note					6
Smoke Pt	D1322 Smoke Pt	mm	18			
Specification Basis	See Note					7
Sulfur	D2622 S by X-ray Fluo Spec	ppm		3000		
Viscosity @ -4 F (-20 C)	D445 Kinematic Viscosity	cSt		8.0		
Water Rxn Interface	D1094 Water Rxn by manual	Rating		1b		

Effective Date: 6/1/13

Spec Ref. #: 8301

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Colonial PL- Grade 54;
Explorer PL- Code 51;
Pasadena Rack

Sweeny to Pasadena Pipeline

Distillate, Jet A, High Sulfur (3000 ppm max)

Notes:

1. Only those additives specified and within the concentrations noted in the current edition of ASTM D1655 are permitted. Use of additives permitted by ASTM D1655 must be clearly indicated on the Certificate of Analysis. The use of any other additives is prohibited.
2. Product shall be clear and bright and free of suspended matter.
3. The Referee Method will be D-2386 (Colonial Pipeline).
4. No peacock or abnormal color deposits are allowed. Refer to the latest version of ASTM D1655.
5. This fuel meets or exceeds all the requirements of ASTM D 1655 (Jet A).
6. ASTM Referee Methods for Jet A are as follows:
Aromatics, ASTM D1319; Distillation, ASTM D86; Flash Point, ASTM D56; Existant Gum, ASTM D381; Freeze Point, ASTM D2386; Net Heat of Combustion, D 4809. (ASTM D1655)
7. These specifications are derived from those of the applicable pipelines. In case of any discrepancy between these specifications and those of the applicable pipelines, the pipeline specifications should be followed.

Effective Date: 6/1/13

Spec Ref. #: 8302

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:

Phillips 66 Carrier LLC Pasadena PL;
Colonial PL- Grade 55;
Explorer PL- Meets Code 51 (high sulfur
jet);
TEPPCO PL- Meets Code 510 (high sulfur
jet);
Pasadena Rack

Sweeny to Pasadena Pipeline

Distillate, Jet A / #1-K Kero, Low Sulfur (400 ppm max)

Property	Test Method	Units	Min	Max	Specific	Note#
Acid Number	D3242 Acidity in Turb Fuel	mg KOH/g		0.1		
Additives	General Note					1
API Gravity (60 Deg F)	D287, D1298, D4052	API	37.0	51.0		
Appearance	Visual		Clear & Br			2
Aromatics	D1319 Hydrocarbon Typ by FIA	Vol%		25		
Ash	D482 Ash	Wt%		0.01		
Burning Quality	D187 Burning Qual of Kero		Pass			3
Carbon Res 10% Btms	D524 Ramsbottom Carb Res	Wt%		0.15		
Cetane Index by 4-var	D4737 Cet Ind by 4-var calc A		40			
Color, Saybolt	D6045 Color by Auto TriStim		+21			
Copper Strip Corrosion	D130 Cu Str 2 Hr @ 212 F	Rating		1		
Dist 10 Vol% Rec, corr	D86 Dist at Atm Press	Deg F		400		
Dist 50 Vol% Rec, corr	D86 Dist at Atm Press	Deg F	Report			
Dist 90 Vol% Rec, corr	D86 Dist at Atm Press	Deg F		550		
Dist End Pt	D86 Dist at Atm Press	Deg F		572		
Dist IBP, corr	D86 Dist at Atm Press	Deg F	Report			
Dist Loss, corr	D86 Dist at Atm Press	Vol%		1.5		
Dist Residue	D86 Dist at Atm Press	Vol%		1.5		
Electrical Conductivity	D2624 Elec Conductivity	pS/m		Report		
Existent Gum	D381 Gum Content by Jet Evap	mg/100ml		7.0	All others	
Existent Gum	D381 Gum Content by Jet Evap	mg/100ml		5.0	TEPPCO	
Filtrat membrane color	D5452 or D2276	Rating		Report	TEPPCO	
Filtrat membrane color	D5452 or D2276	Rating		Report	TEPPCO	
Filtrat particulate content	D2276 Partic in Av Fuels	mg/gal		Report	Explorer	
Filtrat time or vol	D5452 Partic in Av Fuels			Report	Colonial	
Filtrat total solids or partic	D5452 Partic in Av Fuels	mg/L		Report	Colonial	
Flash Pt	D56 Flash Pt by TCC	Deg F	123			
Freeze Pt	D5972 Freeze Pt by Ph Tech	Deg C		-40		4
JFTOT Press Drop	D3241 JFTOT@ 275 C	mm Hg		25		5
JFTOT Tube Rating	D3241 JFTOT@ 275 C	Rating		<3		5
Mercaptan Sulfur	D3227 Thiol Merc S by Titra	Wt%		0.003		
MSEP	D3948 Water Sep by MSEP	Rating	85			
Naphthalenes	D1840 Naphthalenes by UV	Vol%		3.0		
Net Heat of Combustion	D3338 Net Heat of Comb	BTU/lb	18,400			
Product Description	See Note					6
Referee Methods	See Note				Diesel Fuel	7
Referee Methods	See Note				Jet A	8
Referee Methods	See Note				Kero	9
Smoke Pt	D1322 Smoke Pt	mm	18			
Specification Basis	See Note					10
Sulfur	D2622 S by X-ray Fluo Spec	ppm		400		11
Viscosity @ -4 F (-20 C)	D445 Kinematic Viscosity	cSt		8.0		
Viscosity @ 104 F	D445 Kinematic Viscosity	cSt	1.3	1.9		

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Spec Ref. #: 8302

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:

Phillips 66 Carrier LLC Pasadena PL;
Colonial PL- Grade 55;
Explorer PL- Meets Code 51 (high sulfur
jet);
TEPPCO PL- Meets Code 510 (high sulfur
jet);
Pasadena Rack

Sweeny to Pasadena Pipeline

Distillate, Jet A / #1-K Kero, Low Sulfur (400 ppm max)

Property	Test Method	Units	Min	Max	Specific	Note#
Water Rxn Interface	D1094 Water Rxn by manual	Rating		1b		

Notes:

1. Only those additives specified and within the concentrations noted in the current edition of ASTM D1655 are permitted. Use of additives permitted by ASTM D1655 must be clearly indicated on the Certificate of Analysis. The use of any other additives is prohibited.
2. Product shall be clear and bright and free of suspended matter.
3. See ASTM D3699, the Standard Specification for Kerosine.
4. The Referee Method will be D-2386 (Colonial Pipeline).
5. No peacock or abnormal color deposits are allowed. Refer to the latest version of ASTM D1655.
6. This fuel meets or exceeds all the requirements of ASTM D1655 (Jet A), ASTM D975 (Low Sulfur Grade No. 1-D S500 Diesel Fuel Oil), and ASTM D3699 (No. 1-K Kerosine), with the possible exception of the lubricity/conductivity requirements in ASTM D975. Additives or further blending may be utilized at downstream locations to meet these requirements.
7. ASTM Referee Methods for #1 Diesel Fuel, 500 ppm Sulfur, are as follows:
Cetane Number, ASTM D613; Cloud Pt, ASTM D2500; Distillation, ASTM D86; Flash Point, ASTM D93; Sulfur, ASTM D2622. (source ASTM D975)
8. ASTM Referee Methods for Jet A are as follows:
Aromatics, ASTM D1319; Distillation, ASTM D86; Flash Point, ASTM D56; Existant Gum, ASTM D381; Freeze Point, ASTM D2386; Net Heat of Combustion, D 4809. (ASTM D1655)
For a product satisfying both ASTM D1655 (Jet A) and ASTM D975 (#1 Diesel Fuel Oil), ASTM D56 is considered the referee method.
9. ASTM Referee Methods for #1-K Kerosene 400 ppm are as follows:
Distillation, ASTM D86; Flash Point, ASTM D56; Freeze Point, ASTM D2386; Sulfur, ASTM D1266. (source ASTM D3699)
10. These specifications are derived from those of the applicable pipelines. In case of any discrepancy between these specifications and those of the applicable pipelines, the pipeline specifications should be followed.
11. Test method D2622 or D4294 must be used to certify sulfur content at origin locations.

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**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Pasadena Rack

Spec Ref. #: 8304

Sweeny to Pasadena Pipeline

Distillate, Jet A / #1 Diesel Fuel, Ultra-Low Sulfur (15 ppm max)

Property	Test Method	Units	Min	Max	Specific	Note#
Acid Number	D3242 Acidity in Turb Fuel	mg KOH/g		0.1		
Additives	General Note					1
API Gravity (60 Deg F)	D287, D1298, D4052	API	37	51		
Appearance	Visual		Clear & Br			2
Aromatics	D1319 Hydrocarbon Typ by FIA	Vol%		25		
Ash	D482 Ash	Wt%		0.01		
Carbon Res 10% Btms	D524 Ramsbottom Carb Res	Wt%		0.15		
Cetane Index by 4-var	D4737 Cet Ind by 4-var calc A		40			
Color, Visual	Visual		Undyed			3
Copper Strip Corrosion	D130 Cu Str 2 Hr @ 212 F	Rating		1		
Dist 10 Vol% Rec	D2887 Sim Dist by GC	Deg F		365		4
Dist 10 Vol% Rec, corr	D86 Dist at Atm Press	Deg F		400		4
Dist 50 Vol% Rec	D2887 Sim Dist by GC	Deg F	Report			
Dist 50 Vol% Rec, corr	D86 Dist at Atm Press	Deg F	Report			
Dist 90 Vol% Rec	D2887 Sim Dist by GC	Deg F		579		4
Dist 90 Vol% Rec, corr	D86 Dist at Atm Press	Deg F		550		4
Dist End Pt	D2887 Sim Dist by GC	Deg F		644		4
Dist End Pt	D86 Dist at Atm Press	Deg F		572		4
Dist Loss, corr	D86 Dist at Atm Press	Vol%		1.5		5
Dist Residue	D86 Dist at Atm Press	Vol%		1.5		5
Electrical Conductivity	D2624 Elec Conductivity	pS/m		Report		
Existent Gum	D381 Gum Content by Jet Evap	mg/100ml		7.0		
Filtrat time or vol	D5452 Partic in Av Fuels			Report		
Filtrat total solids or partic	D5452 Partic in Av Fuels	mg/L		Report		
Flash Pt	D56 Flash Pt by TCC	Deg F	108			
Freeze Pt	D5972 Freeze Pt by Ph Tech	Deg C		-40		6
JFTOT Press Drop	D3241 JFTOT@ 275 C	mm Hg		25		7
JFTOT Tube Rating	D3241 JFTOT@ 275 C	Rating		<3		7
Mercaptan Sulfur	D3227 Thiol Merc S by Titra	Wt%		0.003		
MSEP	D3948 Water Sep by MSEP	Rating	85			
Naphthalenes	D1840 Naphthalenes by UV	Vol%		3.0		
Net Heat of Combustion	D3338 Net Heat of Comb	BTU/lb	18,400			
Product Description	See Note					8
Referee Methods	See Note				Diesel Fuel	9
Referee Methods	See Note				Jet A	10
Smoke Pt	D1322 Smoke Pt	mm	18			
Sulfur	D2622-98 or D7039-04	ppm		14		
Viscosity @ -4 F (-20 C)	D445 Kinematic Viscosity	cSt		8.0		
Viscosity @ 104 F	D445 Kinematic Viscosity	cSt	1.3	2.4		
Water Rxn Interface	D1094 Water Rxn by manual	Rating		1b		

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Spec Ref. #: 8304

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Pasadena Rack

Sweeny to Pasadena Pipeline

Distillate, Jet A / #1 Diesel Fuel, Ultra-Low Sulfur (15 ppm max)

Notes:

1. Only those additives specified and within the concentrations noted in the current edition of ASTM D1655 are permitted. Use of additives permitted by ASTM D1655 must be clearly indicated on the Certificate of Analysis. The use of any other additives is prohibited.
2. Product shall be clear and bright and free of suspended matter.
3. There will be no visual evidence of red dye when a white bucket test is performed.
4. Either ASTM D86 or ASTM D2887 may be used for the distillation requirement for this product.
5. Either ASTM D86 or ASTM D2887 may be used for the distillation requirement for this product. If there is a limit for ASTM D86 Residue or Loss %, those limits only apply when using ASTM D86 for the distillation requirement.
6. The Referee Method will be D-2386 (Colonial Pipeline).
7. No peacock or abnormal color deposits are allowed. Refer to the latest version of ASTM D1655.
8. This fuel meets or exceeds the requirements of ASTM D1655 (Jet A) and ASTM D975 (Ultra-Low Sulfur Grade No. 1-D S15 Diesel Fuel Oil), with the possible exception of the lubricity/conductivity requirements in ASTM D975. Additives or further blending may be utilized at downstream locations to meet these requirements.
9. ASTM Referee Methods for #1 Diesel Fuel, 15 ppm Sulfur, are as follows:
Cetane Number, ASTM D613; Cloud Pt, ASTM D2500; Distillation, ASTM D86; Flash Point, ASTM D93; Sulfur, ASTM D5453.
(source ASTM D975)
10. ASTM Referee Methods for Jet A are as follows:
Aromatics, ASTM D1319; Distillation, ASTM D86; Flash Point, ASTM D56; Existant Gum, ASTM D381; Freeze Point, ASTM D2386; Net Heat of Combustion, D 4809. (ASTM D1655)
For a product satisfying both ASTM D1655 (Jet A) and ASTM D975 (#1 Diesel Fuel Oil), ASTM D56 is considered the referee method.

Effective Date: 6/1/13

Spec Ref. #: 8305

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:

Phillips 66 Carrier LLC Pasadena PL;
Colonial PL- 51;
Explorer PL- Meets Code 51 (high sulfur
jet);
TEPPCO PL- Meets Code 510 (high sulfur
jet);
Pasadena Rack

Sweeny to Pasadena Pipeline

Distillate, Jet A / #1 Diesel Fuel / #1-K Kero, Ultra-Low Sulfur (15 ppm max)

Property	Test Method	Units	Min	Max	Specific	Note#
Acid Number	D3242 Acidity in Turb Fuel	mg KOH/g		0.1		
Additives	General Note					1
API Gravity (60 Deg F)	D4052 Density & D1250 Tables	API	37.0	51.0		
Appearance	Visual		Clear & Br			2
Aromatics	D1319 Hydrocarbon Typ by FIA	Vol%		25		
Ash	D482 Ash	Wt%		0.01		
Burning Quality	D187 Burning Qual of Kero		Pass			3
Carbon Res 10% Btms	D524 Ramsbottom Carb Res	Wt%		0.15		
Cetane Index by 4-var	D4737 Cet Ind by 4-var calc A		40			
Color, Saybolt	D6045 Color by Auto TriStim		+21			
Color, Visual	Visual		Undyed			4
Copper Strip Corrosion	D130 Cu Str 2 Hr @ 212 F	Rating		1		
Dist 10 Vol% Rec, corr	D86 Dist at Atm Press	Deg F		400		
Dist 50 Vol% Rec, corr	D86 Dist at Atm Press	Deg F	Report			
Dist 90 Vol% Rec, corr	D86 Dist at Atm Press	Deg F		550		
Dist End Pt	D86 Dist at Atm Press	Deg F		572		
Dist IBP, corr	D86 Dist at Atm Press	Deg F	Report			
Dist Loss, corr	D86 Dist at Atm Press	Vol%		1.5		
Dist Residue	D86 Dist at Atm Press	Vol%		1.5		
Electrical Conductivity	D2624 Elec Conductivity	pS/m		Report		
Existent Gum	D381 Gum Content by Jet Evap	mg/100ml		7.0	All others	
Existent Gum	D381 Gum Content by Jet Evap	mg/100ml		5.0	TEPPCO	
Filtrat particulate content	D2276 Partic in Av Fuels	mg/gal		Report	Explorer	
Filtrat time or vol	D5452 Partic in Av Fuels			Report	Colonial	
Filtrat total solids or partic	D5452 Partic in Av Fuels	mg/L		Report	Colonial	
Flash Pt	D56 Flash Pt by TCC	Deg F	123			
Freeze Pt	D5972 Freeze Pt by Ph Tech	Deg C		-40		5
JFTOT Press Drop	D3241 JFTOT@ 275 C	mm Hg		25		6
JFTOT Tube Rating	D3241 JFTOT@ 275 C	Rating		<3		6
Mercaptan Sulfur	D3227 Thiol Merc S by Titra	Wt%		0.003		
MSEP	D3948 Water Sep by MSEP	Rating	85			
Naphthalenes	D1840 Naphthalenes by UV	Vol%		3.0		
Net Heat of Combustion	D3338 Net Heat of Comb	BTU/lb	18,400			
Product Description	See Note					7
Referee Methods	See Note				Diesel Fuel	8
Referee Methods	See Note				Jet A	9
Referee Methods	See Note				Kero	10
Smoke Pt	D1322 Smoke Pt	mm	18			
Specification Basis	See Note					11
Sulfur	D2622-98 or D7039-04	ppm		10		
Test Tolerances	See Note					12
Viscosity @ -4 F (-20 C)	D445 Kinematic Viscosity	cSt		8.0		
Viscosity @ 104 F	D445 Kinematic Viscosity	cSt	1.3	1.9		

Effective Date: 6/1/13

Spec Ref. #: 8305

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:

Phillips 66 Carrier LLC Pasadena PL;
Colonial PL- 51;
Explorer PL- Meets Code 51 (high sulfur
jet);
TEPPCO PL- Meets Code 510 (high sulfur
jet);
Pasadena Rack

Sweeny to Pasadena Pipeline

Distillate, Jet A / #1 Diesel Fuel / #1-K Kero, Ultra-Low Sulfur (15 ppm max)

Property	Test Method	Units	Min	Max	Specific	Note#
Water Rxn Interface	D1094 Water Rxn by manual	Rating		1b		

Notes:

1. Only those additives specified and within the concentrations noted in the current edition of ASTM D1655 are permitted. Use of additives permitted by ASTM D1655 must be clearly indicated on the Certificate of Analysis. The use of any other additives is prohibited.
2. Product shall be clear and bright and free of suspended matter.
3. See ASTM D3699, the Standard Specification for Kerosine.
4. There will be no visual evidence of red dye when a white bucket test is performed.
5. The Referee Method will be D-2386 (Colonial Pipeline).
6. No peacock or abnormal color deposits are allowed. Refer to the latest version of ASTM D1655.
7. This fuel meets or exceeds all the requirements of ASTM D1655 (Jet A), ASTM D975 (Ultra Low Sulfur Grade No. 1-D S15 Diesel Fuel Oil), and ASTM D3699 (No. 1-K Kerosine), with the possible exception of the lubricity/conductivity requirements in ASTM D975. Additives or further blending may be utilized at downstream locations to meet these requirements.
8. ASTM Referee Methods for #1 Diesel Fuel, 15 ppm Sulfur, are as follows:
Cloud Pt, ASTM D2500; Distillation, ASTM D86; Flash Point, ASTM D93; Sulfur, ASTM D5453. (source ASTM D975)
9. ASTM Referee Methods for Jet A are as follows:
Aromatics, ASTM D1319; Distillation, ASTM D86; Flash Point, ASTM D56; Existant Gum, ASTM D381; Freeze Point, ASTM D2386; Net Heat of Combustion, D 4809. (ASTM D1655)
For a product satisfying both ASTM D1655 (Jet A) and ASTM D975 (#1 Diesel Fuel Oil), ASTM D56 is considered the referee method.
10. ASTM Referee Methods for #1-K Kerosene 400 ppm are as follows:
Distillation, ASTM D86; Flash Point, ASTM D56; Freeze Point, ASTM D2386; Sulfur, ASTM D1266. (source ASTM D3699)
11. These specifications are derived from those of the applicable pipelines. In case of any discrepancy between these specifications and those of the applicable pipelines, the pipeline specifications should be followed.
12. Test results shall not exceed the maximum or be less than the minimum values specified (herein). No allowance shall be made for the precision of the test methods. To determine conformance to the specification requirement, a test result may be rounded to the same number of significant figures as in this specification using Practice E 29. Where multiple determinations are made, the average result, rounded in accordance with Practice E 29, shall be used. (ASTM D1655)

Effective Date: 6/1/13

Spec Ref. #: 8315

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Colonial PL- Grade 61;
Explorer PL- Code 75;
TEPPCO PL- Code 715;
Pasadena Rack

Sweeny to Pasadena Pipeline

Distillate, #2 Diesel Fuel / Fuel Oil, Ultra-Low Sulfur (15 ppm max)

Property	Test Method	Units	Min	Max	Specific	Note#
Additives	General Note					1
API Gravity (60 Deg F)	D287, D1298, D4052	API	30.0			
Ash	D482 Ash	Wt%		0.01		
Carbon Res 10% Btms	D524 Ramsbottom Carb Res	Wt%		0.35		
Cetane Index by 2-var	D976 Cetane Index by 2-var		40.0			
Cetane Index by 4-var	D4737 Cet Ind by 4-var calc A		40.0			
Cloud Pt	D5773 Cloud Pt by Phase Tech	Deg F		15	Aug - Mar 14	2
Cloud Pt	D5773 Cloud Pt by Phase Tech	Deg F		20	Mar 15 - Jul	2
Color, ASTM	D1500 Color (ASTM scale)			2.5		
Color, Visual	Visual		Undyed			
Copper Strip Corrosion	D130 Cu Str 3 Hr @ 50 C	Rating		1		
Dist 10 Vol% Rec, corr	D86 Dist at Atm Press	Deg F		Report		
Dist 50 Vol% Rec, corr	D86 Dist at Atm Press	Deg F		Report		
Dist 90 Vol% Rec, corr	D86 Dist at Atm Press	Deg F	540	640		
Dist End Pt	D86 Dist at Atm Press	Deg F		690		
Electrical Conductivity	D2624 Elec Conductivity	pS/m		250		
Flash Pt	D93 PMCC Flash Pt	Deg F	130		Colon/Explor	
Flash Pt	D93 PMCC Flash Pt	Deg F	125		Rack	
Flash Pt	D93 PMCC Flash Pt	Deg F	140		TEPPCO	
Haze @ 77F	D4176 Wtr & Part Cont, Proc 2	Rating		2		
NACE Rust test	NACE Rust TM0172	Rating	B+			
Pour Pt	D5949 Pour Pt by Phase Tech	Deg F		0	Aug - Mar 14	2
Pour Pt	D5949 Pour Pt by Phase Tech	Deg F		10	Mar 15 - Jul	2
Product Description	See Note					3
Referee Methods	See Note				Diesel Fuel	4
Referee Methods	See Note				Fuel Oil	5
Renewable Diesel	See Note					6
Specification Basis	See Note					7
Sulfur	D2622-98 or D7039-04	ppm		10		
Thermal Stability	DuPont 90 min @ 150 C	Pad Rating		7	Colon/Explor	
Thermal Stability	DuPont 90 min @ 150 C	Pad Rating		4	TEPPCO	
Viscosity @ 104 F	D445 Kinematic Viscosity	cSt	1.9	4.1	Colon/Explor	
Viscosity @ 104 F	D445 Kinematic Viscosity	cSt	1.9	3.4	TEPPCO	
Water & Sed, total	D1796 Water & Sed by Centr	Vol%		0.05		

Effective Date: 6/1/13

Spec Ref. #: 8315

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Colonial PL- Grade 61;
Explorer PL- Code 75;
TEPPCO PL- Code 715;
Pasadena Rack

Sweeny to Pasadena Pipeline

Distillate, #2 Diesel Fuel / Fuel Oil, Ultra-Low Sulfur (15 ppm max)

Notes:

1. Concentration and type of additives permitted only as approved by Colonial.
2. Referee Methods are D-97 for Pour Point and D-2500 for Cloud Point (Colonial Pipeline).
3. This fuel meets or exceeds all the requirements of ASTM D975 (Ultra Low Sulfur Grade No. 2-D S15 Diesel Fuel Oil) and ASTM D396 (Grade No. 2 Low Sulfur Fuel Oil), with the possible exception of the lubricity/conductivity requirements in ASTM D975. Additives or further blending may be utilized at downstream locations to meet these requirements.
4. ASTM Referee Methods for #2 Diesel Fuel, 15 ppm Sulfur, are as follows:
Cloud Pt, ASTM D2500; Flash Point, ASTM D93; Sulfur, ASTM D5453; Distillation, D 86. (source ASTM D975)
5. ASTM Referee Methods for #2 Fuel Oil, 500 ppm Sulfur, are as follows:
Density, ASTM D1298; Distillation, ASTM D86; Flash Point, ASTM D93; Pour Point, ASTM D97; Sulfur, ASTM D2622. (source ASTM D396)
6. May contain up to 5% renewable diesel as defined in the Colonial Pipeline Specifications.
7. These specifications are derived from those of the applicable pipelines. In case of any discrepancy between these specifications and those of the applicable pipelines, the pipeline specifications should be followed.

Effective Date: 6/1/13

Spec Ref. #: 8317

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Magellan PL- X Grade

Sweeny to Pasadena Pipeline

Distillate, #2 Diesel Fuel, Ultra-Low Sulfur (15 ppm max)

Property	Test Method	Units	Min	Max	Specific	Note#
Additives	General Note					1
API Gravity (60 Deg F)	D287, D1298, D4052	API	30			
Ash	D482 Ash	Wt%		0.01		
Carbon Res 10% Btms	D524 Ramsbottom Carb Res	Wt%		0.35		
Cetane Index by 2-var	D976 Cetane Index by 2-var		40			
Cetane Index by 4-var	D4737 Cet Ind by 4-var calc A		40.0			
Cloud Pt	D5773 Cloud Pt by Phase Tech	Deg F		20	Apr - Aug	
Cloud Pt	D5773 Cloud Pt by Phase Tech	Deg F		14	Sep - Mar	
Color, ASTM	D1500 Color (ASTM scale)			2.5		
Color, Visual	Visual		Undyed			
Copper Strip Corrosion	D130 Cu Str 3 Hr @ 50 C	Rating		1		
Dist 10 Vol% Rec, corr	D86 Dist at Atm Press	Deg F		Report		
Dist 50 Vol% Rec, corr	D86 Dist at Atm Press	Deg F		Report		
Dist 90 Vol% Rec, corr	D86 Dist at Atm Press	Deg F	540	640		
Dist End Pt	D86 Dist at Atm Press	Deg F		690		
Flash Pt	D93 PMCC Flash Pt	Deg F	140			
Haze @ 77F	D4176 Wtr & Part Cont, Proc 2	Rating		2		
NACE Rust test	NACE Rust TM0172	Rating	B+			
Pour Pt	D5949 Pour Pt by Phase Tech	Deg F		10	Apr - Aug	
Pour Pt	D5949 Pour Pt by Phase Tech	Deg F		0	Sep - Mar	
Product Description	See Note					2
Referee Methods	See Note					3
Referee Methods	See Note					4
Referee Methods	See Note					5
Specification Basis	See Note					6
Sulfur	D2622-98 or D7039-04	ppm		9		
Thermal Stability	D6468 Stability by Reflect	% Refl	75		W Unit	
Thermal Stability	D6468 Stability by Reflect	% Refl	82		Y Unit	
Viscosity @ 104 F	D445 Kinematic Viscosity	cSt	1.9	3.4		
Water & Sed, total	D1796 Water & Sed by Centr	Vol%		0.05		

Effective Date: 6/1/13

Spec Ref. #: 8317

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Magellan PL- X Grade

Sweeny to Pasadena Pipeline

Distillate, #2 Diesel Fuel, Ultra-Low Sulfur (15 ppm max)

Notes:

1. Concentration and type of additives permitted only as approved by Magellan.
2. This fuel meets or exceeds all the requirements of ASTM D975 (Ultra Low Sulfur Grade No. 2-D S15 Diesel Fuel Oil) and ASTM D396 (Grade No. 2 Low Sulfur Fuel Oil), with the possible exception of the lubricity/conductivity requirements in ASTM D975. Additives or further blending may be utilized at downstream locations to meet these requirements.
3. Referee Methods are D-97 for Pour Point and D-2500 for Cloud Point (Colonial Pipeline).
4. ASTM Referee Methods for #2 Diesel Fuel, 15 ppm Sulfur, are as follows:
Cloud Pt, ASTM D2500; Flash Point, ASTM D93; Sulfur, ASTM D5453; Distillation, D 86. (source ASTM D975)
5. ASTM Referee Methods for #2 Fuel Oil, 500 ppm Sulfur, are as follows:
Density, ASTM D1298; Distillation, ASTM D86; Flash Point, ASTM D93; Pour Point, ASTM D97; Sulfur, ASTM D2622. (source ASTM D396)
6. These specifications are derived from those of the applicable pipelines. In case of any discrepancy between these specifications and those of the applicable pipelines, the pipeline specifications should be followed.

Effective Date: 6/1/13

Spec Ref. #: 8322

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:

Phillips 66 Carrier LLC Pasadena PL;
Colonial PL- Grades M1 to M5 (Reg.), V1 to V5 (Prem.);
Explorer PL- Codes 46 (Reg.), 36 (Prem.);
Magellan PL- Grades N (Reg.), A3 (Prem.);
TEPPCO PL- Codes 400 (Reg.), 230 (Prem.)

Sweeny to Pasadena Pipeline

Gasoline, Conventional, All Grades

Property	Test Method	Units	Min	Max	Specific	Note#
Acidity	D1093 Acidity		Negative		TEPPCO only	
API Gravity (60 Deg F)	D4052 Density & D1250 Tables	API	Report			
Aromatics, correlated	D1319 Hydrocarbon Typ by FIA	Vol%	Report			
Benzene	D3606 Benz & Tol by GC	Vol%		3.8		
Colonial PL Notes	See Note					1
Color, Visual	Visual		Undyed			
Copper Strip Corrosion	D130 Cu Str 3 Hr @ 122 F	Rating		1		
Dist E200 (evap@200F)	D86 Dist at Atm Press	Vol%	Report			
Dist E300 (evap@300F)	D86 Dist at Atm Press	Vol%	Report			
Haze	D4176 Wtr & Part Cont, Proc 2			2	Magellan only	2
Lead	D3237 Lead by AA	g/gal		0.010		
Mercaptan Sulfur	D3227 Thiol Merc S by Titra	Wt%		0.002		3
Mercaptan Sulfur	D4952 Active S by Doc Tst	Rating	sweet			3
MTBE	D4815 Oxygenates by GC	Vol%		0.25		
NACE Rust test	NACE Rust TM0172	Rating	B+			
Octane, (R+M) / 2	D2699 & 2700		87.0/93.0		Reg/Prem	
Octane, Motor	D2700 Knock Char by Motor		82.0/87.0		Reg/Prem	
Octane, Research	D2699 Knock Char by Research		Rep/94.0		Reg/Prem	
Olefins	D1319 Hydrocarbon Typ by FIA	Vol%	Report			
Oxidation Stability	D525 Oxid Stab by Ind Period	minutes	240			
Oxygen content, total	D5599 Oxy (EPA) by GC OFID	Wt%		0.1		4
Phosphorus	D3231 Phosphorus in Gasoline	g/gal		0.003		
Product Description	See Note					5
Referee Methods	See Note					6
Silver Strip Corrosion	D7667 or D7671	Rating		1		
Solvent Washed Gum	D381 Gum Content by Jet Evap	mg/100ml		4		
Specification Basis	See Note					7
Sulfur	D2622 S by X-ray Fluo Spec	ppm		80		8
Volatility & Distillation	D4814 Spec for Auto SI Fuels		see Table			

Effective Date: 6/1/13

Spec Ref. #: 8322

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:

Phillips 66 Carrier LLC Pasadena PL;
Colonial PL- Grades M1 to M5 (Reg.), V1 to
V5 (Prem.);
Explorer PL- Codes 46 (Reg.), 36 (Prem.);
Magellan PL- Grades N (Reg.), A3 (Prem.);
TEPPCO PL- Codes 400 (Reg.), 230
(Prem.)

Sweeny to Pasadena Pipeline

Gasoline, Conventional, All Grades

Notes:

1. Colonial Pipeline Notes:

Heavy Metals are not allowed to be present.

Additive requirements - Refer to section 3.2 of the Colonial Pipeline Specifications.

This is a base gasoline, not for sale to the ultimate consumer.

Any gasoline exhibiting an offensive odor and/or poses a personal health hazard will not be accepted for shipment.

Any gasoline containing more than 0.50 wt. % of dicyclopentadiene will not be accepted for shipment; the referee method will be based on a gas chromatograph test.

2. Compliance with ASTM D4176 will be determined using Procedure 2 at the following temperatures, adjusted seasonally:

February 16 – September 30 55 °F max

October 1– February 15 45 °F max

3. Mercaptan sulfur is waived if the fuel is negative by the Doctor test.

4. These fuels may not contain oxygenates, such as ethers and alcohols. The use of non-hydrocarbon blending components in these grades is prohibited.

5. This fuel meets or exceeds all the requirements of ASTM D 4814 (Unleaded Gasoline). This product does not meet EPA additive addition requirements for finished gasoline. This product does not meet the requirements for reformulated gasoline (RFG) and may not be used in any reformulated gasoline covered area.

6. Referee Methods for Gasoline are as follows:

Vapor / Liquid Ratio, ASTM D5188. (source ASTM D4814); Oxygenates, ASTM D5599 is the EPA approved method, ASTM D4815 may be used if the method is correlated back to ASTM D5599.

7. These specifications are derived from those of the applicable pipelines. In case of any discrepancy between these specifications and those of the applicable pipelines, the pipeline specifications should be followed.

8. Refer to 40 CFR Part 80.195. Alternative sulfur test methods, such as ASTM D 5453 and D 7039, may be used if done so according to federal and state regulations.

Effective Date: 6/1/13

Spec Ref. #: 8324

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Explorer PL- Codes 4S, 4T, 4U, 4X (Reg.),
Codes 3S, 3T, 3U, 3X (Prem.)

Sweeny to Pasadena Pipeline

Gasoline, RBOB, All Grades

Property	Test Method	Units	Min	Max	Specific	Note#
BOB Product Description	See Note					1
Referee Methods	See Note					2
Specification Basis	See Note					3
API Gravity (60 Deg F)	D4052 Density & D1250 Tables	API	Report		BOB	
Aromatics, correlated	D1319 Hydrocarbon Typ by FIA	Vol%	Report		BOB	
Benzene	D3606 Benz & Tol by GC	Vol%	Report		BOB	
Dist E200 (evap@200F)	D86 Dist at Atm Press	Vol%	Report		BOB	
Dist E300 (evap@300F)	D86 Dist at Atm Press	Vol%	Report		BOB	
MTBE	D4815 Oxygenates by GC	Vol%		0.25	BOB	
NACE Rust test	NACE Rust TM0172-2001	Rating	B+		BOB	
Octane, (R+M) / 2	D2699 & 2700		Report		BOB	
Olefins	D1319 Hydrocarbon Typ by FIA	Vol%	Report		BOB	
Oxygen content, total	D5599 Oxy (EPA) by GC OFID	Wt%		Report	BOB	4
Sulfur	D2622 S by X-ray Fluo Spec	ppm		85	BOB	
AEA	After Ethanol Addition (AEA)				AEA	5
Appearance @70F	Visual		Clear & Br		AEA	6
Aromatics, correlated	D1319 Hydrocarbon Typ by FIA	Vol%		50	AEA	7
Benzene	D3606 Benz & Tol by GC	Vol%		1.30	AEA	
Color, Visual	Visual		Undyed		AEA	
Copper Strip Corrosion	D130 Cu Str 3 Hr @ 122 F	Rating		1	AEA	
Dist E200 (evap@200F)	D86 Dist at Atm Press	Vol%	30	70	AEA	
Dist E300 (evap@300F)	D86 Dist at Atm Press	Vol%	70	100	AEA	
Lead (Pb)	D3237 Lead by AA	gPb/gal		0.01	AEA	
Mercaptan Sulfur	D3227 Thiol Merc S by Titra	Wt%		0.002	AEA	8
Octane, (R+M) / 2	D2699 & 2700- Reg/Prem		87.0/93.0		AEA	
Octane, Motor	D2700 Motor		82.0		AEA	
Octane, Research	D2699 Research		Report		AEA	
Odor	Non-offensive odor		Pass		AEA	9
Olefins	D1319 Hydrocarbon Typ by FIA	Vol%		25	AEA	
Oxidation Stability	D525 Oxid Stab by Ind Period	minutes	240		AEA	
Oxygen content, total	D5599 Oxy (EPA) by GC OFID	Wt%	1.7	4.0	AEA	10
Phosphorus	D3231 Phosphorus in Gasoline	g/gal		0.004	AEA	
Silver Strip Corrosion	D7667 or D7671	Rating		1	AEA	
Solvent Washed Gum	D381 Gum Content by Jet Evap	mg/100ml		4	AEA	
Sulfur	D2622 S by X-ray Fluo Spec	ppm		80	AEA	
VOC Reductions- Reg 1	See Note	%		-27.0	AEA	11
VOC Reductions- Reg 2	See Note	%		-25.4	AEA	11
Volatility & Distillation	D4814 Spec for Auto SI Fuels		see Table		AEA	

Effective Date: 6/1/13

Spec Ref. #: 8324

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Explorer PL- Codes 4S, 4T, 4U, 4X (Reg.),
Codes 3S, 3T, 3U, 3X (Prem.)

Sweeny to Pasadena Pipeline

Gasoline, RBOB, All Grades

Notes:

1. This fuel is a Reformulated gasoline Blendstock for Oxygenate Blending. Upon the terminal addition of 10 vol% of fuel grade ethanol, this fuel is intended to meet or exceed the requirements of ASTM D4814 (Unleaded Gasoline). This product does not meet EPA additive addition requirements for finished gasoline. A detergent must be added at the terminal to meet finished gasoline requirements prior to distribution.
2. Referee Methods for Gasoline are as follows:
Vapor / Liquid Ratio, ASTM D5188. (source ASTM D4814); Oxygenates, ASTM D5599 is the EPA approved method, ASTM D4815 may be used if the method is correlated back to ASTM D5599.
3. These specifications are derived from those of the applicable pipelines. In case of any discrepancy between these specifications and those of the applicable pipelines, the pipeline specifications should be followed.
4. These fuels may not contain oxygenates, such as ethers and alcohols. The use of non-hydrocarbon blending components in these grades is prohibited.
5. Properties listed with "AEA" in the Specific column are required after the addition of denatured fuel ethanol (After Ethanol Addition).
6. The fuel shall be clear and bright and free from visual undissolved water, sediment, and suspended matter.
7. Refer to test methods published in 40 CFR Chapter 1, Part 80.46. ASTM D1319 may be used as an alternate aromatics test method, in accordance with federal and state regulations.
8. Mercaptan sulfur is waived if the fuel is negative by the Doctor test.
9. Any gasoline exhibiting an offensive odor and/or possessing a personal health hazard will not be accepted for shipment. Any gasoline containing more than 0.30 Wt% of dicyclopentadiene will not be accepted for shipment. The referee method will be based on a gas chromatograph test.
10. Refer to test methods published in 40 CFR Chapter 1, Part 80.46. ASTM D4815 may be used as an alternate oxygenate test method, in accordance with federal and state regulations.
11. Emission reductions must be calculated using EPA guidelines. Minimum required VOC Emissions Performance Reductions are as follows:
Region 1:
VOC annual averaging option: Average- 29.0% min, Per-gallon- 25.0% min
Explorer Pipeline requires 27.0% min on all batches.
Chicago Adjusted Region 2 VOC Controlled (Chicago, Milwaukee area):
VOC annual averaging option: Average- 25.4% min, Per-gallon- 21.4% min
Explorer Pipeline requires 25.4% min on all batches.

Effective Date: 6/1/13

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Magellan PL- Grades A3, N

Spec Ref. #: 8322

Sweeny to Pasadena Pipeline

Volatility Schedule, Conventional, All Grades

Month(s)	Volatility Class	Pipeline Grade(s)	RVP max. psi	V/L Test Temp min. °F	Drive Index max	Distillation Requirements, °F				End Pt max	Dist Resid max. %
						10% max	50% min	50% max	90% max		
Jan	E-5	A3, N	15.00	105	1200	122	170*	230	365	430*	2
Jan - Feb	D-4	A3, N	13.50	116	1220	131	170*	235	365	430*	2
Jan - Feb	C-3	A3, N	11.50	124	1230	140	170	240	365	430*	2
Feb	B-2	A3, N	10.00	133	1240	149	170	245	374	430*	2
Mar	A-5	A3, N	8.50	105	1250	158	170	250	374	430*	2
Mar - Apr	A-4	A3, N	8.50	116	1250	158	170	250	374	430*	2
Apr - May	A-4	A3, N	9.00	116	1250	158	170	250	374	430*	2
Apr - May	A-3	A3, N	8.50	124	1250	158	170	250	374	430*	2
Mar - Sep	A-3	A3, N	9.00	124	1250	158	170	250	374	430*	2
Mar - Sep	A-2	A3, N	9.00	133	1250	158	170	250	374	430*	2
May - Sep	A-1	A3, N	9.00	140	1250	158	170	250	374	430*	2
Sep	B-2	A3, N	10.00	133	1240	149	170	245	374	430*	2
Sep - Oct	C-3	A3, N	11.50	124	1230	140	170	240	365	430*	2
Oct - Dec	D-4	A3, N	13.50	116	1220	131	170*	235	365	430*	2
Oct - Dec	E-5	A3, N	15.00	105	1200	122	170*	230	365	430*	2

Values marked with an * indicate a more restrictive requirement than that defined by the underlying ASTM Volatility Class.

Volatility dates are approximate; consult the pipeline schedule for detailed requirements.

Test Methods: (latest version unless otherwise indicated)

Distillation: ASTM D86, corrected to 760 mm Hg;

Driveability Index: $(DI) = (1.5 * T10) + (3.0 * T50) + (1.0 * T90) + (2.4F * ETOH Vol\%)$, where T10 = distillation temperature (F) at 10% evaporated, T50 = distillation temperature (F) at 50% evaporated, T90 = distillation temperature (F) at 90% evaporated, and ETOH Vol% is the volume of ethanol in the fuel used for the lab test. The DI specification limits are applicable at the refinery or import facility as defined by 40 CFR Part 80.2 and are not subject to correction for precision of the test method.

V/L: ASTM D5188, or the estimate method using Appendix X2 of ASTM D4814;

Vapor Pressure: ASTM D5191-01. For conventional gasoline that meets a summer RVP specification of 9.0 psi or less and which is intended for sale in the summer, EPA requires the use of the EPA equation and also requires that batch reporting of RVP be to 2 decimal places (example; 8.97 psi).

Effective Date: 6/1/13

Spec Ref. #: 8322

Phillips 66 Carrier LLC Pipeline Specifications

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
TEPPCO PL- Codes 230, 400

Sweeny to Pasadena Pipeline

Volatility Schedule, Conventional, All Grades

Month(s)	Volatility Class	Pipeline Grade(s)	RVP max, psi	V/L Test Temp min, °F	Drive Index max	Distillation Requirements, °F				End Pt max	Dist Resid max, %
						10% max	50% min	50% max	90% max		
Jan - Feb	D-4	230, 400	13.5	116	1220	131	170*	235	365	430*	2
Feb	C-3	230, 400	11.5	124	1230	140	170	240	365	430*	2
Mar - Sep	A-4	230, 400	9.0	133	1250	158	170	250	374	430*	2
Mar - Sep	A-3	230, 400	9.0	133	1250	158	170	250	374	430*	2
Mar - Sep	A-2	230, 400	9.0	133	1250	158	170	250	374	430*	2
Sep - Oct	C-3	230, 400	11.5	124	1230	140	170	240	365	430*	2
Nov - Dec	D-4	230, 400	13.5	116	1220	131	170*	235	365	430*	2

Values marked with an * indicate a more restrictive requirement than that defined by the underlying ASTM Volatility Class.

Volatility dates are approximate; consult the pipeline schedule for detailed requirements.

Test Methods: (latest version unless otherwise indicated)

Distillation: ASTM D86, corrected to 760 mm Hg;

Driveability Index: $(DI) = (1.5 * T10) + (3.0 * T50) + (1.0 * T90) + (2.4F * ETOH Vol\%)$, where T10 = distillation temperature (F) at 10% evaporated, T50 = distillation temperature (F) at 50% evaporated, T90 = distillation temperature (F) at 90% evaporated, and ETOH Vol% is the volume of ethanol in the fuel used for the lab test. The DI specification limits are applicable at the refinery or import facility as defined by 40 CFR Part 80.2 and are not subject to correction for precision of the test method.

V/L: ASTM D5188, or the estimate method using Appendix X2 of ASTM D4814;

Vapor Pressure: ASTM D5191-01. For conventional gasoline that meets a summer RVP specification of 9.0 psi or less and which is intended for sale in the summer, EPA requires the use of the EPA equation and also requires that batch reporting of RVP be to 2 decimal places (example; 8.97 psi).

Effective Date: 6/1/13

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Colonial PL- Grades M1 to M5, V1 to V5

Spec Ref. #: 8322

Sweeny to Pasadena Pipeline

Volatility Schedule, Conventional, All Grades

Month(s)	Volatility Class	Pipeline Grade(s)	Clear RVP max, psi	E10 RVP max, psi	V/L Test Temp min, °F	Drive Index max	Distillation Requirements, °F				End Pt max	Dist Resid max, %
							10% max	50% min	50% max	90% max		
Jan	E-5	M5, V5	15.0	NA	105	1200	122	170*	230	365	430*	2.0
Jan - Mar	D-4	M4, V4	13.5	NA	116	1220	131	170*	235	365	430*	2.0
Mar - Apr	C-3	M3, V3	11.5	NA	124	1230	140	170	240	365	430*	2.0
Mar - Sep	A-2	M2, V2	9.0	NA	133	1250	158	170	250	374	430*	2.0
Mar - Sep	AA-2	M1, V1	7.8	8.8	133	1250	158	170	250	374	430*	2.0
Sep - Oct	C-3	M3, V3	11.5	NA	124	1230	140	170	240	365	430*	2.0
Sep - Dec	D-4	M4, V4	13.5	NA	116	1220	131	170*	235	365	430*	2.0
Oct - Dec	E-5	M5, V5	15.0	NA	105	1200	122	170*	230	365	430*	2.0

Values marked with an * indicate a more restrictive requirement than that defined by the underlying ASTM Volatility Class.

Volatility dates are approximate; consult the pipeline schedule for detailed requirements.

Test Methods: (latest version unless otherwise indicated)

Distillation: ASTM D86, corrected to 760 mm Hg;

Driveability Index: $(DI) = (1.5 * T10) + (3.0 * T50) + (1.0 * T90) + (2.4F * ETOH Vol\%)$, where T10 = distillation temperature (F) at 10% evaporated, T50 = distillation temperature (F) at 50% evaporated, T90 = distillation temperature (F) at 90% evaporated, and ETOH Vol% is the volume of ethanol in the fuel used for the lab test. The DI specification limits are applicable at the refinery or import facility as defined by 40 CFR Part 80.2 and are not subject to correction for precision of the test method.

V/L: ASTM D5188, or the estimate method using Appendix X2 of ASTM D4814;

Vapor Pressure: ASTM D5191-01. For conventional gasoline that meets a summer RVP specification of 9.0 psi or less and which is intended for sale in the summer, EPA requires the use of the EPA equation and also requires that batch reporting of RVP be to 2 decimal places (example; 8.97 psi).

Effective Date: 6/1/13

Spec Ref. #: 8322

Phillips 66 Carrier LLC Pipeline Specifications

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Explorer PL- Codes 36, 46

Sweeny to Pasadena Pipeline

Volatility Schedule, Conventional, All Grades

Month(s)	Volatility Class	Pipeline Grade(s)	RVP max. psi	V/L Test Temp min. °F	Drive Index max	Distillation Requirements, °F				End Pt max	Dist Resid max. %
						10% max	50% min	50% max	90% max		
Jan	E-5	36, 46	15.0	105	1200	122	170	230	365	430*	2
Jan	D-4	36, 46	13.5	116	1220	131	170	235	365	430*	2
Feb	C-3	36, 46	11.5	124	1230	140	170	240	365	430*	2
Feb - Aug	A-2	36, 46	9.0	133	1250	158	170	250	374	430*	2
Sep	C-3	36, 46	11.5	124	1230	140	170	240	365	430*	2
Oct - Nov	D-4	36, 46	13.5	116	1220	131	170	235	365	430*	2
Nov - Dec	E-5	36, 46	15.0	105	1200	122	170	230	365	430*	2

Values marked with an * indicate a more restrictive requirement than that defined by the underlying ASTM Volatility Class.

Volatility dates are approximate; consult the pipeline schedule for detailed requirements.

Test Methods: (latest version unless otherwise indicated)

Distillation: ASTM D86, corrected to 760 mm Hg;

Driveability Index: $(DI) = (1.5 * T10) + (3.0 * T50) + (1.0 * T90) + (2.4F * ETOH Vol\%)$, where T10 = distillation temperature (F) at 10% evaporated, T50 = distillation temperature (F) at 50% evaporated, T90 = distillation temperature (F) at 90% evaporated, and ETOH Vol% is the volume of ethanol in the fuel used for the lab test. The DI specification limits are applicable at the refinery or import facility as defined by 40 CFR Part 80.2 and are not subject to correction for precision of the test method.

V/L: ASTM D5188, or the estimate method using Appendix X2 of ASTM D4814;

Vapor Pressure: ASTM D5191-01. For conventional gasoline that meets a summer RVP specification of 9.0 psi or less and which is intended for sale in the summer, EPA requires the use of the EPA equation and also requires that batch reporting of RVP be to 2 decimal places (example; 8.97 psi).

Effective Date: 6/1/13

Spec Ref. #: 8324

Phillips 66 Carrier LLC Pipeline Specifications

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Explorer PL- VOC Region 1- Codes 3S, 3T,
4S, 4T

Sweeny to Pasadena Pipeline

Volatility Schedule, RBOB, All Grades

Month(s)	Volatility Class	Pipeline Grade(s)	RVP max. psi	VOC %	V/L Test	Drive. Index max	Distillation Requirements, °F					Dist Resid max. %
				Red. Max	Temp min. °F		10% max	50% min	50% max	90% max	End Pt max	
Jan	E-5	3T, 4T	15.0**	NA	105	1200	122	150	230	365	430*	2
Jan	D-4	3T, 4T	13.5**	NA	116	1220	131	150	235	365	430*	2
Feb	C-3	3T, 4T	11.5**	NA	124	1230	140	150	240	365	430*	2
Feb - Mar	A-3	3T, 4T	9.0**	NA	124	1230	158	150	250	374	430*	2
Mar - Aug	AA-2	3S, 4S	Region 1	-27.0	133	1250	158	150	250	374	430*	2
Sep	C-3	3T, 4T	11.5**	NA	124	1230	140	150	240	365	430*	2
Oct - Nov	D-4	3T, 4T	13.5**	NA	116	1220	131	150	235	365	430*	2
Nov - Dec	E-5	3T, 4T	15.0**	NA	105	1200	122	150	230	365	430*	2

With the exception of NON-VOC RVP limits, these limits are on the finished gasoline-ethanol blend (lab blend).

Values marked with an * indicate a different requirement than that defined by the underlying ASTM Volatility Class.

Values marked with an ** are on the clear sample (no ethanol).

Volatility dates are approximate. Shipping dates are determined by the Refinery and/or Pipeline Scheduler. The above Volatility Classes are standard as set forth by the Pipeline. Other Volatility Classes may be requested as well.

Test Methods: (latest version unless otherwise indicated)

Distillation: ASTM D86, corrected to 760 mm Hg;

Driveability Index: $(DI) = (1.5 * T10) + (3.0 * T50) + (1.0 * T90) + (2.4F * ETOH Vol\%)$, where Temps are in deg F, and ETOH Vol% = the volume of ethanol in the fuel used for the lab test. The DI specification limits are applicable at the refinery or import facility as defined by 40 CFR Part 80.2 and are not subject to correction for precision of the test method.

V/L: ASTM D5188, or the estimate method using Appendix X2 of ASTM D4814;

Vapor Pressure: ASTM D5191-01. For conventional gasoline that meets a summer RVP specification of 9.0 psi or less and which is intended for sale in the summer, EPA requires the use of the EPA equation and also requires that batch reporting of RVP be to 2 decimal places (example; 8.97 psi). For reformulated gasoline designated as VOC-controlled, EPA requires the use of the EPA equation and also requires that batch reporting of RVP be to 2 decimal places .

Effective Date: 6/1/13

Spec Ref. #: 8324

**Phillips 66 Carrier LLC
Pipeline Specifications**

Destinations:
Phillips 66 Carrier LLC Pasadena PL;
Explorer PL- VOC Chicago Region 2- Codes
3U, 3X, 4U, 4X

Sweeny to Pasadena Pipeline

Volatility Schedule, RBOB, All Grades

Month(s)	Volatility Class	Pipeline Grade(s)	RVP max, psi	VOC %	V/L Test	Drive. Index max	Distillation Requirements, °F				End Pt max	Dist Resid max, %
				Red. Max	Temp min, °F		10% max	50% min	50% max	90% max		
Jan	E-5	3X, 4X	15.0**	NA	105	1200	122	150	230	365	430*	2
Jan	D-4	3X, 4X	13.5**	NA	116	1220	131	150	235	365	430*	2
Feb	C-3	3X, 4X	11.5**	NA	124	1230	140	150	240	365	430*	2
Feb	A-3	3X, 4X	9.0**	NA	124	1220*	158	150	250	374	430*	2
Feb	AA-3	3U, 4U	Region 2	-25.4	124	1230*	158	150	250	374	430*	2
Mar - Aug	AA-3	3U, 4U	Region 2	-25.4	124	1250	158	150	250	374	430*	2
Sep	C-3	3X, 4X	11.5**	NA	124	1230	140	150	240	365	430*	2
Oct	D-4	3X, 4X	13.5**	NA	116	1220	131	150	235	365	430*	2
Nov	E-5	3X, 4X	15.0**	NA	105	1220*	122	150	230	365	430*	2
Nov - Dec	E-5	3X, 4X	15.0**	NA	105	1200	122	150	230	365	430*	2

With the exception of NON-VOC RVP limits, these limits are on the finished gasoline-ethanol blend (lab blend).

Values marked with an * indicate a different requirement than that defined by the underlying ASTM Volatility Class.

Values marked with an ** are on the clear sample (no ethanol).

Volatility dates are approximate. Shipping dates are determined by the Refinery and/or Pipeline Scheduler. The above Volatility Classes are standard as set forth by the Pipeline. Other Volatility Classes may be requested as well.

Test Methods: (latest version unless otherwise indicated)

Distillation: ASTM D86, corrected to 760 mm Hg;

Driveability Index: $(DI) = (1.5 * T10) + (3.0 * T50) + (1.0 * T90) + (2.4F * ETOH Vol\%)$, where Temps are in deg F, and ETOH Vol% = the volume of ethanol in the fuel used for the lab test. The DI specification limits are applicable at the refinery or import facility as defined by 40 CFR Part 80.2 and are not subject to correction for precision of the test method.

V/L: ASTM D5188, or the estimate method using Appendix X2 of ASTM D4814;

Vapor Pressure: ASTM D5191-01. For conventional gasoline that meets a summer RVP specification of 9.0 psi or less and which is intended for sale in the summer, EPA requires the use of the EPA equation and also requires that batch reporting of RVP be to 2 decimal places (example; 8.97 psi). For reformulated gasoline designated as VOC-controlled, EPA requires the use of the EPA equation and also requires that batch reporting of RVP be to 2 decimal places .