

**Colonial Pipeline Company**

**Section 3**  
**Product Codes and Specifications**  
*(Effective date January 1, 2010)*

January 2010

# Colonial Pipeline Company

## PRODUCT CODES - SUMMARY

Product

Groupings

A	CBOB - 87 Octane after blending with 10% denatured fuel Ethanol
D	CBOB - 93 Octane after blending with 10% denatured fuel Ethanol
F	RBOB - 87 Octane after blending with 10% denatured fuel Ethanol
H	RBOB - 93 Octane after blending with 10% denatured fuel Ethanol
L	Gasoline Blendstocks
M	Conventional - 87 Octane
S	Atlanta/Birmingham CBOB - 87 Octane after blending with 10% denatured fuel Ethanol
T	Atlanta/Birmingham CBOB - 93 Octane after blending with 10% denatured fuel Ethanol
V	Conventional - 93 Octane
51-58	Kerosene
59	Distillate Blendstock - Not Dyed by Colonial
61	Ultra Low Sulfur Diesel
66	Ultra Low Sulfur Diesel -NRLM -Not dyed by Colonial
70-78	Fuel Oil, Diesel Fuel, Military DFM - Not Dyed by Colonial
79	Distillate Blendstock - Not Dyed by Colonial
80-88	Fuel Oil, Diesel Fuel - Dyed by Colonial
89	Distillate Blendstock - Dyed by Colonial
90-94	Transmix

January 2010

\*Denotes Change

# Colonial Pipeline Company

## PRODUCT CODES - GASOLINE

Fungible Product Code	Segregated Product Code	Description
<b><u>CBOB - 87 octane after blending with 10% denatured fuel ethanol</u></b>		
A1	1A	8.8 psi RVP
A2	2A	10.0 psi RVP
A3	3A	12.5 psi RVP
A4	4A	14.5 psi RVP
A5	5A	16.0 psi RVP
<b><u>CBOB - 93 octane after blending with 10% denatured fuel ethanol</u></b>		
D1	1D	8.8 psi RVP
D2	2D	10.0 psi RVP
D3	3D	12.5 psi RVP
D4	4D	14.5 psi RVP
D5	5D	16.0 psi RVP
<b><u>RBOB - 87 octane after blending with 10% denatured fuel ethanol</u></b>		
F1	1F	Region 1 VOC controlled RBOB for blending with 10% denatured fuel ethanol
F2	2F	Region 2 VOC controlled RBOB for blending with 10% denatured fuel ethanol
F3	3F	11.5 psi RVP RBOB for blending with 10% denatured fuel ethanol
F4	4F	13.5 psi RVP RBOB for blending with 10% denatured fuel ethanol
F5	5F	15.0 psi RVP RBOB for blending with 10% denatured fuel ethanol
<b><u>RBOB - 93 octane after blending with 10% denatured fuel ethanol</u></b>		
H1	1H	Region 1 VOC controlled RBOB for blending with 10% denatured fuel ethanol
H2	2H	Region 2 VOC controlled RBOB for blending with 10% denatured fuel ethanol
H3	3H	11.5 psi RVP RBOB for blending with 10% denatured fuel ethanol
H4	4H	13.5 psi RVP RBOB for blending with 10% denatured fuel ethanol
H5	5H	15.0 psi RVP RBOB for blending with 10% denatured fuel ethanol

Notes:

1. Delivery of certain products may be limited by facilities.
2. See product specifications for detailed transfer document information.

January 2010

# Colonial Pipeline Company

## PRODUCT CODES - GASOLINE

<u>Fungible Product Codes</u>	<u>Segregated Product Codes</u>	<u>Description</u>
<u>Gasoline Blendstocks - Segregated Only</u>		
	1L	Low Octane (Octane R+M/2 <83)
	2L	Regular (83< Octane R+M/2 <87)
	3L	Mid-grade (87< Octane R+M/2 <93)
	4L	Premium (Octane R+M/2 >93)
<u>Conventional Gasoline - 87 Octane</u>		
M0	0M	7.0 psi RVP
M1	1M	7.8 psi RVP (Without Ethanol) 8.8 RVP (With Ethanol)
M2	2M	9.0 psi RVP
M3	3M	11.5 psi RVP
M4	4M	13.5 psi RVP
M5	5M	15.0 psi RVP
<u>*Atlanta/Birmingham CBOB - 87 octane after blending with 10% denatured fuel ethanol</u>		
S0	0S	8.0 psi RVP
S1	1S	8.8 psi RVP
S2	2S	10.0 psi RVP
S3	3S	12.5 psi RVP
S4	4S	14.5 psi RVP
<u>*Atlanta/Birmingham CBOB - 93 octane after blending with 10% denatured fuel ethanol</u>		
T0	0T	8.0 psi RVP
T1	1T	8.8 psi RVP
T2	2T	10.0 psi RVP
T3	3T	12.5 psi RVP
T4	4T	14.5 psi RVP
<u>Conventional Gasoline - 93 Octane</u>		
V0	0V	7.0 psi RVP
V1	1V	7.8 psi RVP (Without Ethanol) 8.8 RVP (With Ethanol)
V2	2V	9.0 psi RVP
V3	3V	11.5 psi RVP
V4	4V	13.5 psi RVP
V5	5V	15.0 psi RVP

Notes:

1. Delivery of certain products may be limited by facilities.
2. See product specifications for detailed transfer document information.

January 2010

\*Denotes Change

# Colonial Pipeline Company

Fungible Product Codes	Segregated Product Codes	<u>PRODUCT CODES - DISTILLATE</u> <u>Description</u>
51		<u>Ultra Low Sulfur Kerosene</u> Ultra Low Sulfur Kerosene
52		<u>Kerosene</u> Military Jet JP-5
54	53	Aviation Kerosene
55		Aviation Kerosene
56		Aviation Kerosene/K-1
56		Bonded Aviation Kerosene
58	57	Aviation Kerosene
58		Military Jet JP-8
	59	Distillate Blendstock - Not Dyed by Colonial
		<u>Ultra Low Sulfur Diesel Fuel - Not Dyed by Colonial</u>
61		Ultra Low Sulfur Diesel Fuel
66		Ultra Low Sulfur Diesel -NRLM
		<u>Fuel Oils, Diesel Fuels, Military DFM – Not Dyed by Colonial</u>
70		Dyed Heating Oil - 2000 ppmwt - Intraharbor Only
	71	Undyed, Distillate Fuel for Export Only - 2000 ppmwt sulfur
	72	Low Dyed, Low Sulfur NRLM Diesel Fuel - 500 ppmwt sulfur
	73	Undyed Low Sulfur Diesel Fuel - 500 ppmwt sulfur
74		Undyed Low Sulfur Highway Diesel Fuel - 420 ppmwt sulfur
	75	Low Dyed, High Sulfur NRLM Diesel Fuel - 5000 ppmwt sulfur
76		Undyed NRLM Diesel Fuel - 420 ppmwt sulfur
77		Low Dyed Heating Oil - 2000 ppmwt sulfur
78		Undyed Military Diesel Fuel Marine
	79	Distillate Blendstock - Low Dyed unless waived by Q.A.
		<u>Fuel Oils, Diesel Fuels, Military DFM - Dyed by Colonial</u>
80		Dyed NRLM Diesel Fuel - 420 ppmwt sulfur
	82	Dyed Low Sulfur NRLM Diesel Fuel - 500 ppmwt sulfur
84		Dyed Low Sulfur Diesel Fuel - 420 ppmwt sulfur
	85	Dyed High Sulfur NRLM Diesel Fuel - 5000 ppmwt sulfur
88		Dyed Heating Oil - 2000 ppmwt sulfur
	89	Distillate Blendstock
		<u>Transmix - Fungible Only</u>
90		Distillate - Conventional Gasoline
91		Distillate RFG - VOC Controlled
92		Distillate RFG - Non-VOC Controlled
93		Distillate RBOB - VOC Controlled
94		Distillate RBOB - Non-VOC Controlled

Notes:

1. Delivery of certain products may be limited by facilities.
2. See product specifications for detailed transfer document information.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS INDEX

\*3.1.1

### Product Specifications

This section contains specifications for products that are handled on a segregated and fungible (common-stream) basis. A "fungible batch" is defined as a batch of petroleum product meeting carrier's established specifications that may be commingled with other quantities of petroleum product meeting the same specifications. A "segregated batch" is defined as a batch of petroleum product being the property of a single shipper and meeting carrier's established specifications.

Delivery of batches may be limited by facilities.

For gasoline product codes the order of the letter and number designates whether the product is fungible or segregated. Gasoline product codes that begin with a letter are fungible and with a number are segregated.

### Section

3.1	Index
3.2	Additive Requirements/Restrictions
3.3	A grades (1-5) - CBOB 87 octane after blending with 10.0% denatured fuel ethanol
3.4	D grades (1-5) - CBOB 93 octane after blending with 10.0% denatured fuel ethanol
3.5	F grades (1-5) - RBOB 87 octane after blending with 10.0% denatured fuel ethanol
3.6	H grades (1-5) - RBOB 93 octane after blending with 10.0% denatured fuel ethanol
3.7	L grades (1-4) - Gasoline blendstocks
3.8	M grades (0-5) - 87 octane non-oxygenated conventional gasoline
*3.9	S grades (0-4) - Atlanta/Birmingham CBOB 87 octane after blending with 10.0% denature
*3.1	T grades (0-4) - Atlanta/Birmingham CBOB 93 octane after blending with 10.0% denature
3.11	V grades (0-5) - 93 octane non-oxygenated conventional gasoline

January 2010

\*Denotes Change

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS INDEX

3.1.2

### Product Specifications

#### Section

3.12	Grade 51 - Fungible Ultra Low Sulfur Kerosene
3.13	Grade 52 - Fungible military JP-5
3.14	Grade 53 - Segregated aviation kerosene
3.15	Grade 54 - Fungible aviation kerosene
3.16	Grade 55 - Fungible aviation kerosene/1-K
3.17	Grade 56 - Fungible bonded aviation kerosene.
3.18	Grade 57 - Segregated aviation kerosene - 500 ppmwt sulfur
3.19	Grade 58 - Fungible military JP-8
3.20	Grade 59 - Segregated undyed distillate blendstock
3.21	Grade 61 - Fungible ultra low sulfur diesel fuel
3.22	Grade 63 - Reserved for future use
3.23	Grade 66 - Fungible Ultra Low Sulfur Diesel -NRLM (not dyed by Colonial) 15 ppmwt sulfur
3.24	Grade 70 – Fungible dyed heating oil – For Intraharbor movements only
3.25	Grade 71 - Segregated high sulfur distillate fuel for export only - 2000 ppmwt sulfur
3.26	Grade 72 - Segregated Low Dyed, Low Sulfur NRLM Diesel Fuel - 500 ppmwt sulfur
3.27	Grade 73 - Segregated undyed low sulfur diesel fuel - 500 ppmwt sulfur
3.28	Grade 74 - Fungible undyed low sulfur highway diesel fuel - 420 ppmwt sulfur
3.29	Grade 75 - Segregated low dyed high sulfur NRML diesel fuel - 5000 ppmwt sulfur
3.30	Grade 76 - Fungible undyed NRML diesel fuel - 420 ppmwt sulfur
3.31	Grade 77 - Fungible low dyed heating oil - 2000 ppmwt sulfur
3.32	Grade 78 - Segregated military marine diesel fuel
3.33	Grade 79 - Segregated distillate blendstock - low dyed unless waived by Q.A.
3.34	Grade 80 - Fungible dyed NRML diesel fuel - 420 ppmwt sulfur
3.35	Grade 82 - Segregated Dyed Low Sulfur NRLM Diesel Fuel - 500 ppmwt sulfur
3.36	Grade 84 - Fungible dyed low sulfur diesel fuel - 420 ppmwt sulfur
3.37	Grade 85 - Segregated dyed high sulfur NRML diesel fuel - 5000 ppmwt sulfur
3.38	Grade 86 - Reserved for future use
3.39	Grade 88 - Fungible dyed heating oil - 2000 ppmwt sulfur
3.40	Grade 89 - Segregated distillate blendstock
3.41	Grades 90-95 - Transmix

For complete listing of all product codes, refer to individual product specifications.

January 2010

\*Denotes Change

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS ADDITIVE REQUIREMENTS/RESTRICTIONS

3.2 Colonial will permit only the types and concentrations of additives detailed below; all other types and concentrations or additives are prohibited.

### 3.2.1 Gum Inhibitors and Metal Deactivators

Gasoline shipments may, but are not required to, contain the following:

N, N'di-secondary butyl para-phenylenediamine	N, N'disalicylidene-1, 2 propanediamine
N, N'di (1-ethyl-2-methylpentyl) para-phenylenediamine	2, 6-di-tertiary butyl 4 methyl phenol
N, N'di-isopropyl-para-phenylenediamine	n-Butyl para-aminophenol
N, N'bis-(1, 4-diamethylpentyl)-p-phenylenediamine	2,4,6 - tritertiary butylphenol
Ortho-tertiary butylphenol	2,4-diamethyl-6-tertiary-butylphenol
2,4-di-tertiary butylphenol	2,6-tertiary butylphenol
N,secondary butyl, N' phenyl-para-phenylenediamine	Mixed propylated and butylated phenols
Butylated ethyl,methyl and dimethyl phenols	2,4,6 tri-isopropylphenol

### 3.2.2 Corrosion Inhibitors

All products shipped on Colonial Pipeline, with the exception of all grades of Aviation Kerosine, are required to meet a minimum level of corrosion protection prior to shipment. The concentration of inhibitor dosage will be controlled to meet a minimum rating of B+ (less than 5% of test surface rusted) as determined by NACE Standard TM0172-2001, Test Method-Antirust Properties of Petroleum Products Pipeline Cargoes.

Unleaded gasolines shipped on Colonial Pipeline may contain only the following corrosion inhibitors:

Aqua Process	11CH77	Nalco	5403, 5405, 5406, EC5624A, EC5626A
Afton Chem.	HiTEC 6455	SPEC-AID	8Q22, 8Q100, 8Q101, 8Q102, 8Q103, 8Q106, 8Q109, 8Q110,8Q112ULS
Corexit	5267	Tolad	245, 249, 351, 3232, 3232D, 4410
Innospec	DCI-4A, DCI-6A, DCI-11, DCI-30.N	Unichem	7500, 7501, 7510
Ethyl HiTec	580	UOP	Unicor, Unicor J, Unicor PL
Lubrizol	8014, 8017		
MidContinental	MCC5001		
Mobil	C-605		

In addition to the above additives, the following may be used in diesel fuels and fuel oil transported by Colonial: Dupont AFA-1, Innospec DMA-4, Nalco 5400-A.

### 3.2.3 Static Dissipator Additives (Conductivity Improvers)

Product shipments may, but are not required to, contain static dissipator additive(SDA). The only approved SDA for use on Colonial Pipeline is Innospec Stadis® 450. SDA is prohibited from all aviation kerosine grades (grades 51, 53, 54, 55, 56, 57, and 59). The origin maximum concentration of Stadis® 450 is 0.75 mg/l, and the origin maximum conductivity allowed is 250 pS/m at 21°C(70°F) by ASTM D2624.

### 3.2.4 Aviation Kerosene Additives

Product may only contain antioxidants and metal deactivators specified and within the concentration noted in *Table 2: Detailed Requirements for Additives in Aviation Turbine Fuels* of latest ASTM D-1655 with advance approval from Colonial prior to shipment. Use of these additives is expected to be short term at reasonable treat levels. All other additives are prohibited. Use of these additives must be clearly indicated on Certificate of Analysis. Colonial reserves the right to deny shipment of product containing these additives.

### 3.2.5 Cloud and Pour Point Depressant Additives

Product may only contain ethylene vinyl acetate copolymer based cloud and pour point depressant additives only upon advance approval from Colonial prior to shipment. Use of these additives is expected to be short term at reasonable treat levels. Colonial reserves the right to deny shipment of product containing cloud and pour point depressant additives.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS ADDITIVE REQUIREMENTS/RESTRICTIONS

### 3.2.6 Cetane Improver Additives

Product may only contain 2-ethyl hexyl nitrate or T-butyl peroxide based cetane improver additives only upon advance approval from Colonial prior to shipment. Use of these additives is expected to be short term at reasonable treat levels. Colonial reserves the right to deny shipment of product containing cetane improver additives.

### 3.2.7 Prohibited Additives

As stated in Section 3.2 above, Colonial only permits certain types and concentrations of additives and all other types and concentrations of additives are prohibited. Prohibited additives include, but are not limited to, the following:

Lubricity additives	Port Fuel Injector(PFI) additives	Biodiesel
Intake Valve Detergent Additives	Additives containing Phosphorus	Marker Solvent Yellow 124

### 3.2.8 Additive Documentation Requirements

If present, the type and concentration of approved additives must be clearly indicated on Certificate of Analysis. Additive treat rates are acceptable for concentration reporting. Carrier may request review of volume reconciliation data to verify actual treat rates.

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.3.1

### CONVENTIONAL REGULAR GASOLINE BLENDSTOCK (CBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY) AS DEFINED IN ASTM D4806

Cancels Previous Issues of A grades

**This CBOB may not be combined with any other CBOB except CBOB having the same requirement for oxygenate type and amount.**

**All parameters must be met after blending with denatured fuel ethanol unless noted.**

#### ALL A GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

<u>Product Property</u>	<u>ASTM Test</u>		<u>Test Results</u>		<u>Note</u>
	<u>Method</u>	<u>Minimum</u>	<u>Maximum</u>		
Octane	RON	D2699	Report		
	MON	D2700	82.0		
	(R+M)/2		87.0		
Oxygen Content, weight %	D4815, D5599 GC-OFID		0.1		1,2,7
MTBE, vol.%	D4815, D5599 GC-OFID		Origin		7
			0.25		
			Delivery		
RVP (psi)	D5191		0.50		3
	<u>Grades</u>				
	A1,1A		8.8		
	A2,2A		10.0		
	A3,3A		12.5		
	A4,4A		14.5		
	A5,5A		16.0		

NOTES (Apply to Fungible and Segregated):

Heavy Metals are not allowed to be present.

Additive requirements/restrictions - refer to section 3.2.

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.

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

\*3.3.2

### CONVENTIONAL REGULAR GASOLINE BLENDSTOCK (CBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY) AS DEFINED IN ASTM D4806

Cancels Previous Issues of A grades

#### FUNGIBLE ONLY REQUIREMENTS:

<u>Product Property</u>	<u>ASTM Test Method</u>		<u>Test Results</u>		<u>Note</u>		
	<u>Minimum</u>	<u>Maximum</u>	<u>Minimum</u>	<u>Maximum</u>			
Benzene (vol%)	D3606			4.9			
Color				Undyed			
Corrosion (Cu) 3 hrs @122°F (50°C)	D130			1			
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1			1			
Doctor test	D4952			Negative (sweet)	5		
or							
Mercaptan sulfur, wt. %	D3227			0.002			
Existent Gum mg/100 ml	D381			4			
Gravity °API at 60°F	D287,D1298, D4052	Report			7		
Oxidation stability-minutes	D525	240					
Phosphorous, gms/gal	D3231			0.004			
Sulfur (ppmwt)	D2622			80	8		
	or equivalent						
Nace Corrosion	TM0172-2001	B+ (Origin)			7		
<u>Volatility:</u>							
Driveability Index	D4814			See Chart			
Distillation, °C (°F) @ %Evap.	D86						
Vapor/Liquid Ratio (V/L), °C (°F) @ 20	D5188 (See Note 6)				6		
	Driveability	10 vol%	50 vol%		90 vol%	End Pt.	*V/L
<u>Grades</u>	<u>Index</u>	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Max</u>	<u>Max</u>	<u>Min</u>
A1,A2	1250	70(158)	66(150)	121(250)	190(374)	221(430)	49(120)
A3	1230	60(140)	66(150)	116(240)	185(365)	221(430)	45(113)
A4	1220	55(131)	66(150)	113(235)	185(365)	221(430)	42(107)
A5	1200	50(122)	66(150)	110(230)	185(365)	221(430)	37(99)

- All A grades may not contain oxygenates, such as ethers and alcohols. The use of non-hydrocarbon blending components in these grades is prohibited.
- Refer to test methods published in 40 CFR Chapter 1, Part 80.46. Alternative aromatics and oxygenates test methods, ASTM D1319 and ASTM D 4815, may be used according to federal and state regulations.
- For products blended to meet EPA or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.
- Reserved
- Mercaptan Sulfur waived if fuel is negative by Doctor test.
- Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method
- Specifications must be met before blending of denatured fuel ethanol.
- Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.4.1

### CONVENTIONAL PREMIUM GASOLINE BLENDSTOCK (CBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY) AS DEFINED IN ASTM D4806

Cancels Previous Issues of D grades

**This CBOB may not be combined with any other CBOB except CBOB having the same requirement for oxygenate type and amount.**

**All parameters must be met after blending with denatured fuel ethanol unless noted.**

#### ALL D GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

<u>Product Property</u>	<u>ASTM Test</u>		<u>Test Results</u>		<u>Note</u>
	<u>Method</u>	<u>Minimum</u>	<u>Maximum</u>		
Octane	RON	D2699	Report		
	MON	D2700	Report		
	(R+M)/2		93.0		
Oxygen Content, weight %	D4815, D5599 GC-OFID		0.1		1,2,7
MTBE, vol.%	D4815, D5599 GC-OFID		Origin		7
			0.25		
			Delivery		
RVP (psi)	D5191		0.50		3
	<u>Grades</u>				
	D1,1D		8.8		
	D2,2D		10.0		
	D3,3D		12.5		
	D4,4D		14.5		
	D5,5D		16.0		

NOTES (Apply to Fungible and Segregated):

Heavy Metals are not allowed to be present.

Additive requirements/restrictions - refer to section 3.2.

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.

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

\*3.4.2

### CONVENTIONAL PREMIUM GASOLINE BLENDSTOCK (CBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY) AS DEFINED IN ASTM D4806

Cancels Previous Issues of D grades

#### FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test		Test Results		Note		
	Method	Minimum	Maximum				
Benzene (vol%)	D3606		4.9				
Color			Undyed				
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1				
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1		1				
Doctor test	D4952		Negative (sweet)		5		
or							
Mercaptan sulfur, wt. %	D3227		0.002				
Existent Gum mg/100 ml	D381		4				
Gravity °API at 60°F	D287,D1298, D4052	Report			7		
Oxidation stability-minutes	D525	240					
Phosphorous, gms/gal	D3231		0.004				
Sulfur (ppmwt)	D2622		80		8		
	or equivalent						
Nace Corrosion	TM0172-2001	B+ (Origin)			7		
<u>Volatility:</u>							
Driveability Index	D4814		See Chart				
Distillation, °C (°F) @ %Evap.	D86						
Vapor/Liquid Ratio (V/L), °C (°F) @ 20	D5188 (See Note 6)				6		
		Driveability	10 vol%	50 vol%	90 vol%	End Pt.	*V/L
<u>Grades</u>	<u>Index</u>	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Max</u>	<u>Max</u>	<u>Min</u>
D1,D2	1250	70(158)	66(150)	121(250)	190(374)	221(430)	49(120)
D3	1230	60(140)	66(150)	116(240)	185(365)	221(430)	45(113)
D4	1220	55(131)	66(150)	113(235)	185(365)	221(430)	42(107)
D5	1200	50(122)	66(150)	110(230)	185(365)	221(430)	37(99)

- All D grades may not contain oxygenates, such as ethers and alcohols. The use of non-hydrocarbon blending components in these grades is prohibited.
- Refer to test methods published in 40 CFR Chapter 1, Part 80.46. Alternative aromatics and oxygenates test methods, ASTM D1319 and ASTM D 4815, may be used according to federal and state regulations.
- For products blended to meet EPA or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.
- Reserved.
- Mercaptan Sulfur waived if fuel is negative by Doctor test.
- Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method
- Specifications must be met before blending of denatured fuel ethanol.
- Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.5.1

### REFORMULATED REGULAR GASOLINE BLENDSTOCK (RBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY) AS DEFINED IN ASTM D4806

Cancels Previous Issues of F grades

**This RBOB may not be combined with any other RBOB except RBOB having the same requirement for oxygenate type and amount.**

**All parameters must be met after blending with denatured fuel ethanol unless noted.**

#### ALL F GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

<u>Product Property</u>	<u>ASTM Test</u>		<u>Test Results</u>		<u>Note</u>
	<u>Method</u>		<u>Minimum</u>	<u>Maximum</u>	
Benzene (vol%)	D3606			1.30	
Octane	RON	D2699	Report		
	MON	D2700	82.0		
	(R+M)/2		87.0		
Oxygen Content, weight %	D5599, GC-OFID(See Note)				1,2,7,8
Aromatics (vol%)	D5769, D5599, GC-OFID (See Note)		50		2
E200 (vol%)	D86		30	70	
E300 (vol%)	D86		70	100	
Olefins (vol%)	D1319			25	
Sulfur (ppmwt)	D2622			80	9
Non-VOC Controlled Requirements					
RVP (psi)	D5191				3
<u>Grades</u>					
	F3,3F (Non-VOC Controlled)			11.5	
	F4,4F (Non-VOC Controlled)			13.5	
	F5,5F (Non-VOC Controlled)			15.0	
VOC Controlled Requirements					
	(Grades F1,F2,1F,2F, only)				2
RVP (psi)	D5191			Report	3
Emissions Performance Reductions (%)					
Region 1 (Grades F1,1F)		Origin:		-28.0% (cycles 16 through 18)	
				-27.0%	
		Delivery:		-25.0%	
Region 2 (Grades F2,2F)		Origin:		-26.4% (cycles 16 through 18)	
				-25.4%	
		Delivery:		-23.4%	

January 2010



# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.5.3

### **REFORMULATED REGULAR GASOLINE BLENDSTOCK (RBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY) AS DEFINED IN ASTM D4806**

Cancels Previous Issues of F grades

NOTES (Apply to Fungible and Segregated):

4. Emissions reductions must be calculated using EPA guidelines.
5. Mercaptan Sulfur waived if fuel is negative by Doctor test.
6. Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method
7. Specifications must be met before blending of denatured fuel ethanol.
8. Oxygen content must meet a minimum of 1.7 wt.% and a maximum of 4.0 wt.% after blending of denatured fuel ethanol.
9. Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.6.1

### REFORMULATED PREMIUM GASOLINE BLENDSTOCK (RBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY) AS DEFINED IN ASTM D4806

Cancels Previous Issues of H grades

**This RBOB may not be combined with any other RBOB except RBOB having the same requirement for oxygenate type and amount.**

**All parameters must be met after blending with denatured fuel ethanol unless noted.**

#### ALL H GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

<u>Product Property</u>	<u>ASTM Test</u>		<u>Test Results</u>		<u>Note</u>
	<u>Method</u>	<u>Minimum</u>	<u>Maximum</u>		
Benzene (vol%)	D3606		1.30		
Octane	RON	D2699	Report		
	MON	D2700	Report		
	(R+M)/2		93.0		
Oxygen Content, weight %	D5599, GC-OFID(See Note)				1,2,7,8
Aromatics (vol%)	D5769, D5599, GC-OFID (See Note)			50	2
E200 (vol%)	D86	30	70		
E300 (vol%)	D86	70	100		
Olefins (vol%)	D1319		25		
Sulfur (ppmwt)	D2622		80		9
Non-VOC Controlled Requirements					
RVP (psi)	D5191				3
<u>Grades</u>					
	H3,3H (Non-VOC Controlled)			11.5	
	H4,4H (Non-VOC Controlled)			13.5	
	H5,5H (Non-VOC Controlled)			15.0	
VOC Controlled Requirements					
	(Grades H1,H2,1H,2H, only)				2
RVP (psi)	D5191		Report		3
Emissions Performance Reductions (%)					
Region 1 (Grades H1,1H)		Origin:		-28.0% (cycles 15 through 17)	
				-27.0%	
		Delivery:		-25.0%	
Region 2 (Grades H2,2H)		Origin:		-26.4% (cycles 15 through 17)	
				-25.4%	
		Delivery:		-23.4%	

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.6.2

### REFORMULATED PREMIUM GASOLINE BLENDSTOCK (RBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY) AS DEFINED IN ASTM D4806

Cancels Previous Issues of H grades

#### FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test Method	Minimum	Test Results		Note		
			Maximum				
Color			Undyed				
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1				
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1		1				
Doctor test	D4952		Negative (sweet)		5		
or							
Mercaptan sulfur, wt. %	D3227		0.002				
Existent Gum mg/100 ml	D381		4				
Gravity °API at 60°F	D287,D1298, D4052	Report			7		
Oxidation stability-minutes	D525	240					
Phosphorous, gms/gal	D3231		0.004				
Nace Corrosion	TM0172-2001	B+ (Origin)			7		
<u>Volatility:</u>							
Driveability Index	D4814		See Chart				
Distillation, °C (°F) @ %Evap.	D86						
Vapor/Liquid Ratio (V/L), °C (°F) @ 20					6		
	D5188 (See Note 6)						
	Driveability	10 vol%	50 vol%		90 vol%	End Pt.	V/L
<u>Grades</u>	<u>Index</u>	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Max</u>	<u>Max</u>	<u>Min</u>
H1,H2	1250	70(158)	77(170)	121(250)	190(374)	221(430)	56(133)
H3	1230	60(140)	77(170)	116(240)	185(365)	221(430)	51(124)
H4	1220	55(131)	66(150)	113(235)	185(365)	221(430)	47(116)
H5	1200	50(122)	66(150)	110(230)	185(365)	221(430)	41(105)

NOTES (Apply to Fungible and Segregated):

Heavy Metals are not allowed to be present.

Additive requirements/restrictions - refer to section 3.2.

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.

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

1. All H grades may not contain oxygenates, such as ethers and alcohols. The use of non-hydrocarbon blending components in these grades is prohibited. Origin maximum MTBE .25 vol. %.

Delivery maximum MTBE .50 vol. %.

2. Refer to test methods published in 40 CFR Chapter 1, Part 80.46. Alternative aromatics and oxygenates test methods, ASTM D1319 and ASTM D 4815, may be used according to federal and state regulations.

3. For products blended to meet EPA or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.6.3

### **REFORMULATED PREMIUM GASOLINE BLENDSTOCK (RBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY) AS DEFINED IN ASTM D4806**

Cancels Previous Issues of H grades

NOTES (Apply to Fungible and Segregated):

4. Emissions reductions must be calculated using EPA guidelines.
5. Mercaptan Sulfur waived if fuel is negative by Doctor test.
6. Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method
7. Specifications must be met before blending of denatured fuel ethanol.
8. Oxygen content must meet a minimum of 1.7 wt.% and a maximum of 4.0 wt.% after blending of denatured fuel ethanol.
9. Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS BLENDSTOCKS

3.7

Cancels Previous Issues of L Grades

### ALL L GRADE REQUIREMENTS (SEGREGATED ONLY)

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of their knowledge the following information:

- Octane
- Oxygen Content, weight %
- RVP (psi)
- Any other product property that does not meet Colonial's fungible specification for M grades

The Pre-shipment/Transfer Document must be received before shipment with the actual results.

<u>Product Property</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Gravity °API at 60°F	D287,D1298, D4052	48	80	
Benzene (vol%)	D3606		4.9	
Nace Corrosion	TM0172-2001	B+ (origin)		
Sulfur, (ppmw)	D2622 or equivalent		Report	
RVP (psi)	D5191	4.0		

### Grades

- 1L This product code is intended for the shipment of low octane (<83 R+M/2) gasoline blendstocks. Nomination and shipment of a buffer batch is required with the batch. All interfaces will be cut into the 1L product in order to protect other batches. The nomination volumes of the the buffer batch and 1L product will be adjusted to reflect actual barrels delivered.
- 2L This product code is intended for the shipment of >83 and <87 R+M/2 gasoline blendstocks. This product does not require a buffer batch and will be handled with normal procedures.
- 3L This product code is intended for the shipment of >87 and <93 R+M/2 gasoline blendstocks. This product does not require a buffer batch and will be handled with normal procedures.
- 4L This product code is intended for the shipment of >93 R+M/2 gasoline blendstocks. This product does not require a buffer batch and will be handled with normal procedures.

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

Additive requirements/restrictions - refer to section 3.2.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.8.1

### SPECIFICATIONS FOR 87 OCTANE INDEX CONVENTIONAL GASOLINE

Cancels Previous Issues of M Grades

This product does not meet requirements for reformulated gasoline, and may not be used in any reformulated gasoline covered area.

#### ALL M GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

<u>Product Property</u>	<u>ASTM Test</u>		<u>Test Results</u>		<u>Note</u>
	<u>Method</u>	<u>Minimum</u>	<u>Maximum</u>		
Octane	RON	D2699	Report		
	MON	D2700	82.0		
	(R+M)/2		87.0		
Oxygen Content, weight %		D4815, D5599 GC-OFID	0.1		1
MTBE, vol.%		D4815, D5599 GC-OFID	Origin		
			0.25		
			Delivery		3
			0.50		
RVP (psi)		D5191			2
	<u>Grades</u>		Without	With	
			Ethanol	Ethanol	
	M0,0M		7.0	X	
	M1,1M		7.8	8.8	7
	M2,2M		9.0	X	
	M3,3M		11.5	X	
	M4,4M		13.5	X	
	M5,5M		15.0	X	

Heavy Metals are not allowed to be present.

Additive requirements/restrictions - refer to section 3.2.

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.

#### **Delivery of any M grade to final destinations in Virginia and Maryland may contain MTBE.**

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.8.2

### SPECIFICATIONS FOR 87 OCTANE INDEX CONVENTIONAL GASOLINE

Cancels Previous Issues of M Grades

**FUNGIBLE ONLY REQUIREMENTS:**

<u>Product Property</u>	<u>ASTM Test Method</u>	<u>Minimum</u>	<u>Test Results Maximum</u>	<u>Note</u>			
Benzene, vol. %	D3606, D4053		4.9				
Color			Undyed				
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1				
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1		1				
Doctor test	D4952		Negative (sweet)	4			
or							
Mercaptan sulfur, wt. %	D3227		0.002				
Existent Gum mg/100 ml	D381		4				
Gravity °API at 60°F	D287,D1298, D4052	Report					
Oxidation stability-minutes	D525	240					
Phosphorous, gms/gal	D3231		0.004				
Sulfur (ppmw)	D2622 or equivalent		80	6			
Nace Corrosion	TM0172-2001	B+ (Origin)					
<u>Volatility:</u>							
Driveability Index	D4814		See Chart				
Distillation, °C (°F) @ %Evap.	D86						
Vapor/Liquid Ratio (V/L), °C (°F) @ 20	D5188 (See Note 5)			5			
	Driveability	10 vol%	50 vol%	90 vol%	End Pt.	V/L	
<u>Grades</u>	<u>Index</u>	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Max</u>	<u>Min</u>	
M0,M1,M2	1250	70(158)	77(170)	121(250)	190(374)	221(430)	56(133)
M3	1230	60(140)	77(170)	116(240)	185(365)	221(430)	51(124)
M4	1220	55(131)	77(170)	113(235)	185(365)	221(430)	47(116)
M5	1200	50(122)	77(170)	110(230)	185(365)	221(430)	41(105)

NOTES (Apply to Fungible and Segregated):

1. Non-oxygenated is defined as having no more than 0.1 wt.% oxygen. The use of oxygenated and/or non-hydrocarbon blending components in these grades is prohibited.
2. For products blended to meet EPA or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.
3. Delivery of any M grade to final destinations in Virginia and Maryland may contain MTBE.
4. Mercaptan Sulfur waived if fuel is negative by Doctor test.
5. Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method
6. Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.
7. M1 is the only RVP volatility class that requires dual certification on certificate of analysis for RVP

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

\*3.9.1

### CONVENTIONAL REGULAR GASOLINE BLENDSTOCK (CBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY) AS DEFINED IN ASTM D4806 ATLANTA/BIRMINGHAM GASOLINE

Cancels Previous Issues of S grades

**This CBOB may not be combined with any other CBOB except CBOB having the same requirement for oxygenate type and amount.**

**All parameters must be met after blending with denatured fuel ethanol unless noted.**

#### ALL S GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

<u>Product Property</u>	<u>ASTM Test</u>		<u>Test Results</u>		<u>Note</u>
	<u>Method</u>	<u>Minimum</u>	<u>Maximum</u>		
Octane	RON	D2699	Report		
	MON	D2700	82.0		
	(R+M)/2		87.0		
Oxygen Content, weight %		D4815, D5599 GC-OFID	0.1		1,2,7
MTBE, vol.%		D4815, D5599 GC-OFID	Origin		7
			0.25		
			Delivery		
RVP (psi)		D5191	0.50		3
	<u>Grades</u>				
	S0,0S			8.0	
	S1,1S			8.8	
	S2,2S			10.0	
	S3,3S			12.5	
	S4,4S			14.5	

NOTES (Apply to Fungible and Segregated):

Heavy Metals are not allowed to be present.

Additive requirements/restrictions - refer to section 3.2.

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.

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

\*3.9.2

### CONVENTIONAL REGULAR GASOLINE BLENDSTOCK (CBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY) AS DEFINED IN ASTM D4806 ATLANTA/BIRMINGHAM GASOLINE

Cancels Previous Issues of S grades

#### FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test		Test Results		Note		
	Method	Minimum	Maximum				
Benzene (vol%)	D3606		4.9				
Color			Undyed				
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1				
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1		1				
Doctor test	D4952		Negative (sweet)		5		
or							
Mercaptan sulfur, wt. %	D3227		0.002				
Existent Gum mg/100 ml	D381		4				
Gravity °API at 60°F	D287,D1298, D4052	Report			7		
Oxidation stability-minutes	D525	240					
Phosphorous, gms/gal	D3231		0.004				
Sulfur (ppmwt)	D2622		80		8		
	or equivalent						
Nace Corrosion	TM0172-2001	B+ (Origin)			7		
<u>Volatility:</u>							
Driveability Index	D4814		See Chart				
Distillation, °C (°F) @ %Evap.	D86						
Vapor/Liquid Ratio (V/L), °C (°F) @ 20	D5188 (See Note 6)				6		
	Driveability	10 vol%	50 vol%		90 vol%	End Pt.	V/L
<u>Grades</u>	<u>Index</u>	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Max</u>	<u>Max</u>	<u>Min</u>
S0,S1,S2	1250	70(158)	66(150)	121(250)	190(374)	221(430)	49(120)
S3	1230	60(140)	66(150)	116(240)	185(365)	221(430)	45(113)
S4	1220	55(131)	66(150)	113(235)	185(365)	221(430)	42(107)

- All S grades may not contain oxygenates, such as ethers and alcohols. The use of non-hydrocarbon blending components in these grades is prohibited.
- Refer to test methods published in 40 CFR Chapter 1, Part 80.46. Alternative aromatics and oxygenates test methods, ASTM D1319 and ASTM D 4815, may be used according to federal and state regulations.
- For products blended to meet EPA or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.
- Reserved
- Mercaptan Sulfur waived if fuel is negative by Doctor test.
- Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method
- Specifications must be met before blending of denatured fuel ethanol.
- Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.

**Cycles 22 through 49, grade S2 is not designated as Atlanta/Birmingham gasoline**

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

\*3.10.1

### CONVENTIONAL PREMIUM GASOLINE BLENDSTOCK (CBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY) AS DEFINED IN ASTM D4806 ATLANTA/BIRMINGHAM GASOLINE

Cancels Previous Issues of T grades

**This CBOB may not be combined with any other CBOB except CBOB having the same requirement for oxygenate type and amount.**

**All parameters must be met after blending with denatured fuel ethanol unless noted.**

#### ALL T GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

<u>Product Property</u>	<u>ASTM Test</u>		<u>Test Results</u>		<u>Note</u>
	<u>Method</u>	<u>Minimum</u>	<u>Maximum</u>		
Octane	RON	D2699	Report		
	MON	D2700	Report		
	(R+M)/2		93.0		
Oxygen Content, weight %	D4815, D5599 GC-OFID		0.1		1,2,7
MTBE, vol.%	D4815, D5599 GC-OFID		Origin		7
			0.25		
			Delivery		
RVP (psi)	D5191		0.50		3
	<u>Grades</u>				
	T0,0T		8.0		
	T1,1T		8.8		
	T2,2T		10.0		
	T3,3T		12.5		
	T4,4T		14.5		

NOTES (Apply to Fungible and Segregated):

Heavy Metals are not allowed to be present.

Additive requirements/restrictions - refer to section 3.2.

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.

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

\*3.10.2

### CONVENTIONAL PREMIUM GASOLINE BLENDSTOCK (CBOB) FOR BLENDING WITH 10% DENATURED FUEL ETHANOL (92% PURITY) AS DEFINED IN ASTM D4806 ATLANTA/BIRMINGHAM GASOLINE

Cancels Previous Issues of T grades

#### FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test		Test Results		Note	
	Method	Minimum	Maximum			
Benzene (vol%)	D3606		4.9			
Color			Undyed			
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1			
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1		1			
Doctor test	D4952		Negative (sweet)		5	
or						
Mercaptan sulfur, wt. %	D3227		0.002			
Existent Gum mg/100 ml	D381		4			
Gravity °API at 60°F	D287,D1298, D4052	Report			7	
Oxidation stability-minutes	D525	240				
Phosphorous, gms/gal	D3231		0.004			
Sulfur (ppmwt)	D2622		80		8	
	or equivalent					
Nace Corrosion	TM0172-2001	B+ (Origin)			7	
<u>Volatility:</u>						
Driveability Index	D4814		See Chart			
Distillation, °C (°F) @ %Evap.	D86					
Vapor/Liquid Ratio (V/L), °C (°F) @ 20	D5188 (See Note 6)				6	
	Driveability	10 vol%	50 vol%	90 vol%	End Pt.	V/L
<u>Grades</u>	<u>Index</u>	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Max</u>	<u>Min</u>
T0,T1,T2	1250	70(158)	66(150) 121(250)	190(374)	221(430)	49(120)
T3	1230	60(140)	66(150) 116(240)	185(365)	221(430)	45(113)
T4	1220	55(131)	66(150) 113(235)	185(365)	221(430)	42(107)

- All T grades may not contain oxygenates, such as ethers and alcohols. The use of non-hydrocarbon blending components in these grades is prohibited.
- Refer to test methods published in 40 CFR Chapter 1, Part 80.46. Alternative aromatics and oxygenates test methods, ASTM D1319 and ASTM D 4815, may be used according to federal and state regulations.
- For products blended to meet EPA or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.
- Reserved.
- Mercaptan Sulfur waived if fuel is negative by Doctor test.
- Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method
- Specifications must be met before blending of denatured fuel ethanol.
- Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.

**Cycles 22 through 49, grade T2 is not designated as Atlanta/Birmingham gasoline**

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.11.1

### SPECIFICATIONS FOR 93 OCTANE INDEX CONVENTIONAL GASOLINE

Cancels Previous Issues of V Grades

This product does not meet requirements for reformulated gasoline, and may not be used in any reformulated gasoline covered area.

#### ALL V GRADE REQUIREMENTS (SEGREGATED AND FUNGIBLE)

<u>Product Property</u>	<u>ASTM Test</u>		<u>Test Results</u>		<u>Note</u>			
	<u>Method</u>	<u>Minimum</u>	<u>Maximum</u>					
Octane	RON	D2699	Report					
	MON (R+M)/2	D2700	Report 93.0					
Oxygen Content, weight %	D4815, D5599 GC-OFID		0.1		1			
MTBE, vol.%	D4815, D5599 GC-OFID		Origin					
			0.25					
			Delivery		3			
RVP (psi)	D5191		0.50					
					2			
					Without	With		
					Ethanol	Ethanol		
					V0,0V		X	
					V1,1V	7.8	8.8	7
					V2,2V	9.0	X	
					V3,3V	11.5	X	
		V4,4V	13.5	X				
		V5,5V	15.0	X				

Heavy Metals are not allowed to be present.

Additive requirements/restrictions - refer to section 3.2.

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.

**Delivery of any V grade to final destinations in Virginia and Maryland may contain MTBE.**

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.11.2

### SPECIFICATIONS FOR 93 OCTANE INDEX CONVENTIONAL GASOLINE

Cancels Previous Issues of V Grades

#### FUNGIBLE ONLY REQUIREMENTS:

Product Property	ASTM Test		Test Results		Note	
	Method	Minimum	Maximum			
Benzene, vol. %	D3606, D4053		4.9			
Color			Undyed			
Corrosion (Cu) 3 hrs @122°F (50°C)	D130		1			
Corrosion (Ag) 3 hrs @122°F (50°C)	D4814-04b Annex A1		1			
Doctor test	D4952		Negative (sweet)		4	
or						
Mercaptan sulfur, wt. %	D3227		0.002			
Existent Gum mg/100 ml	D381		4			
Gravity °API at 60°F	D287,D1298, D4052	Report				
Oxidation stability-minutes	D525	240				
Phosphorous, gms/gal	D3231		0.004			
Sulfur (ppmw)	D2622		80		6	
	or equivalent					
Nace Corrosion	TM0172-2001	B+ (Origin)				
<u>Volatility:</u>						
Driveability Index	D4814		See Chart			
Distillation, °C (°F) @ %Evap.	D86					
Vapor/Liquid Ratio (V/L), °C (°F) @ 20					5	
	D5188 (See Note 5)					
	Driveability	10 vol%	50 vol%	90 vol%	End Pt.	V/L
<u>Grades</u>	<u>Index</u>	<u>Max</u>	<u>Min</u>	<u>Max</u>	<u>Max</u>	<u>Min</u>
V1,V2	1250	70(158)	77(170) 121(250)	190(374)	221(430)	56(133)
V3	1230	60(140)	77(170) 116(240)	185(365)	221(430)	51(124)
V4	1220	55(131)	77(170) 113(235)	185(365)	221(430)	47(116)
V5	1200	50(122)	77(170) 110(230)	185(365)	221(430)	41(105)

NOTES (Apply to Fungible and Segregated):

1. Non-oxygenated is defined as having no more than 0.1 wt.% oxygen. The use of oxygenated and/or non-hydrocarbon blending components in these grades is prohibited.
2. For products blended to meet EPA or state imposed summer VOC requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80.
3. Delivery of any V grade to final destinations in Virginia and Maryland may contain MTBE.
4. Mercaptan Sulfur waived if fuel is negative by Doctor test.
5. Computer and Linear methods may be used to determine V/L value. D5188 will be the referee method
6. Refer to 40 CFR Part 80.195 (d)(2). Alternative sulfur test methods, ASTM D 5453 and D 7039, may be used according to federal and state regulations.
7. V1 is the only RVP volatility class that requires dual certification on certificate of analysis for RVP

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

\*3.12.1

### SPECIFICATIONS FOR FUNGIBLE ULTRA LOW SULFUR KEROSENE GRADE 51

**EPA Designation: MVNRLM, Motor vehicle diesel fuel, #1D, 15 ppm sulfur motor vehicle diesel fuel**

Cancels Previous Issues of Grade 51

<u>Product Property</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
<u>General Properties</u>				
Gravity	D287, D1298, D4052	37	51	
Net Heat of combustion BTU/Pound	D3338, D4529, D4809	18,400		
Corrosion 2 hrs. @ 212°F (100°C)	D130		1	
*Cetane Number	D613, D6890, D7170	40		6
MSEP: Origin	D3948	85		
MSEP: Delivery	D3948	75		
<u>Electrical</u>				
Conductivity, pS/m @ 21°C(70°F)	D2624		Report	
Ash, wt.%	D482		0.01	
Determination of Filtration Time or Volume Total Solids or Particulate	MIL-T-5624P, D5452		Report Report	3
<u>Low Temperature Properties</u>				
Freezing Point, °C	D2386, D5972, D7153, D7154		-40	7
Viscosity, cSt @ 104°F (40°C)	D445	1.3	1.9	
Viscosity, cSt @ -4°F (-20°C)	D445		8.0	
<u>Volatility</u>				
Flash Point, °F	D56, D3828	123		
Distillation, °C(°F)	D86			8
10% recovered			205(400)	
50% recovered		Report		
90% recovered			288(550)	
End Point			300(572)	
Residue, %			1.5	
Loss, %			1.5	
or Simulated Distillation, °C(°F)	D2887			8
10% recovered			185(365)	
50% recovered		Report		
90% recovered			304(579)	
End Point			340(644)	
<u>Stability</u>				
Existent Gum, mg/100 ml	D381, IP540		7.0	
Thermal Stability @ 275°C	D3241			Origin
Pres. drop in mm/Hg			25	
Tube deposit less than code			Code 3	

No Peacock or Abnormal Color Deposits

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

### 3.12.2 SPECIFICATIONS FOR FUNGIBLE ULTRA LOW SULFUR KEROSENE GRADE 51

Cancels Previous Issues of Grade 51

<u>Product Property</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
<u>Stability (continued)</u>				
Thermal Stability @ 260°C	D3241			Delivery
Pres. drop in mm/Hg			25	
Tube deposit less than code			Code 3	
		No Peacock or Abnormal Color Deposits		
Carbon Residue: Ramsbottom on 10% bottom	D524		0.15	
<u>Composition Properties</u>				
Total Sulfur, ppmwt	D2622, D5453 D7039, other		10 14	4 Origin Delivery
Aromatics, vol. %	D1319		25	
Mercaptan Sulfur, wt. % OR	D3227		0.003	5
Doctor test	D4952		Negative (sweet)	
Acidity total max, mg KOH/g	D3242		0.1	
<u>Combustion Properties</u>				
Smoke point, mm OR	D1322	25		
Smoke point, mm and Naphthalenes, vol. %	D1322 D1840	18	3.0	

**NOTES:**

1. Product shall be clear and bright and free of suspended matter.
2. Additive requirements/restrictions - refer to section 3.2.
3. At this time, the test limits described in MIL-T-5624P, Appendix A, parts 70.a(1) and 70.b will not be imposed.
4. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
5. Mercaptan Sulfur waived if fuel is negative by Doctor test.
6. Where cetane number by test method D613 is not available, test method D4737A can be used as an approximation.
7. The referee method will be D2386
8. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE MILITARY JP-5

3.13

**EPA Designation: Exempt distillate covered by national security exemption under 80.606**

Cancels Previous Issues of Grade 52

Shipments of grade 52 must meet the latest military specification for JP-5

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.14

### SPECIFICATIONS FOR SEGREGATED KEROSENE GRADE 53

**EPA Designation: Kerosene**

Cancels Previous Issues of Grade 53

<u>Product Property</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Gravity	D287, D1298, D4052	37	51	
Flash Point, °F	D56, D3828	100		
Sulfur, ppmwt	D2622, D5453 D1266, D4294		3000	3
Electrical				
Conductivity, pS/m @ 21°C(70°F)	D2624		Report	

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge any product property that does not meet our fungible specifications for 54 grade.

**NOTES:**

1. Product shall be clear and bright and free of suspended matter.
2. The pre-shipment documentation with the actual results must be received before shipment.
3. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
4. Additive requirements/restrictions - refer to section 3.2.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.15.1

### SPECIFICATIONS FOR FUNGIBLE AVIATION KEROSENE GRADE 54

**EPA Designation: Jet Fuel**

Cancels Previous Issues of Grade 54

<u>Product Property</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
<u>General Properties</u>				
Gravity	D287, D1298, D4052	37	51	
Net Heat of combustion BTU/Pound	D3338, D4529, D4809	18,400		
Corrosion 2 hrs. @ 212°F (100°C)	D130		1	
MSEP: Origin	D3948	85		
MSEP: Delivery	D3948	75		
<u>Electrical</u>				
Conductivity, pS/m @ 21°C(70°F)	D2624		Report	
Determination of Filtration Time or Volume Total Solids or Particulate	MIL-T-5624P, D5452		Report Report	3
<u>Low Temperature Properties</u>				
Freezing Point, °C	D2386, D5972, D7153, D7154		-40	5
Viscosity, cSt @ -4°F (-20°C)	D445		8.0	
<u>Volatility</u>				
Flash Point, °F	D56, D3828	108		
Physical Distillation, °C(°F)	D86			7
10% recovered			205(400)	
50% recovered		Report		
90% recovered		Report		
End Point			300(572)	
Residue, %			1.5	
Loss, %			1.5	
or Simulated Distillation, °C(°F)	D2887			7
10% recovered			185(365)	
50% recovered		Report		
90% recovered		Report		
End Point			340(644)	
<u>Stability</u>				
Existent Gum, mg/100 ml	D381, IP540		7.0	
Thermal Stability @ 275°C	D3241			Origin
Pres. drop in mm/Hg			25	
Tube deposit less than code			Code 3	
		No Peacock or Abnormal Color Deposits		

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.15.2

### SPECIFICATIONS FOR FUNGIBLE AVIATION KEROSENE GRADE 54

Cancels Previous Issues of Grade 54

<u>Product Property</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
<u>Stability</u>				
Thermal Stability @ 260°C	D3241			Delivery
Pres. drop in mm/Hg			25	
Tube deposit less than code			Code 3	
No Peacock or Abnormal Color Deposits				
<u>Composition Properties</u>				
Sulfur, ppmwt	D2622, D5453			6
	D1266, D4294		3000	
Mercaptan Sulfur, wt.%	D3227		0.003	4
OR				
Doctor test	D4952		Negative (sweet)	
Aromatics, vol.%	D1319		25	
Acidity total max, mg KOH/g	D3242		0.1	
<u>Combustion Properties</u>				
Smoke point, mm	D1322	25		
OR				
Smoke point, mm and	D1322	18		
Naphthalenes, vol.%	D1840		3.0	

#### NOTES:

1. Product shall be clear and bright and free of suspended matter.
2. Additive requirements/restrictions - refer to section 3.2.
3. At this time, the test limits described in MIL-T-5624P, Appendix A, parts 70.a(1) and 70.b will not be imposed.
4. Mercaptan Sulfur waived if fuel is negative by Doctor test.
5. The referee method will be D2386
6. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
7. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

\*3.16.1

## SPECIFICATIONS FOR FUNGIBLE AVIATION KEROSENE GRADE 55

### EPA Designation: Kerosene

Cancels Previous Issues of Grade 55

<u>Product Property</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
<u>General Properties</u>				
Color: Origin	D156,D6045	21		
Color: Delivery	D156,D6045	18		
Gravity	D287, D1298, D4052	37	51	
Net Heat of combustion BTU/Pound	D3338, D4529, D4809	18,400		
Corrosion 2 hrs. @ 212°F (100°C)	D130		1	
*Cetane Index	D613, D6890,D7170,D4737A	40		
MSEP: Origin	D3948	85		
MSEP: Delivery	D3948	75		
<u>Electrical</u>				
Conductivity, pS/m @ 21°C(70°F)	D2624		Report	
Ash, wt.%	D482		0.01	
Determination of Filtration Time or Volume Total Solids or Particulate	MIL-T-5624P, D5452		Report Report	3
<u>Low Temperature Properties</u>				
Freezing Point, °C	D2386, D5972, D7153, D7154		-40	7
Viscosity, cSt @ 104°F (40°C)	D445	1.3	1.9	
Viscosity, cSt @ -4°F (-20°C)	D445		8.0	
<u>Volatility</u>				
Flash Point, °F	D56, D3828	123		
Distillation, °C(°F)	D86			8
10% recovered			205(400)	
50% recovered		Report		
90% recovered			288(550)	
End Point			300(572)	
Residue, %			1.5	
Loss, %			1.5	
or Simulated Distillation, °C(°F)	D2887			8
10% recovered			185(365)	
50% recovered		Report		
90% recovered			304(579)	
End Point			340(644)	
<u>Stability</u>				
Existent Gum, mg/100 ml	D381,IP540		7.0	
Thermal Stability @ 275°C	D3241			Origin
Pres. drop in mm/Hg			25	
Tube deposit less than code			Code 3	
No Peacock or Abnormal Color Deposits				

January 2010

\*Denotes Change

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.16.2

### SPECIFICATIONS FOR FUNGIBLE AVIATION KEROSENE GRADE 55

Cancels Previous Issues of Grade 55

<u>Product Property</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Stability (continued)				
Thermal Stability @ 260°C	D3241			Delivery
Pres. drop in mm/Hg			25	
Tube deposit less than code			Code 3	
		No Peacock or Abnormal Color Deposits		
Carbon Residue: Ramsbottom on 10% bottom	D524		0.15	
<u>Composition Properties</u>				
Sulfur, ppmwt	D2622, D5453			4
	D7039		400	
Aromatics, vol. %	D1319		25	
Mercaptan Sulfur, wt. %	D3227		0.003	5
OR				
Doctor test	D4952		Negative (sweet)	
Acidity total max, mg KOH/g	D3242		0.1	
<u>Combustion Properties</u>				
Smoke point, mm	D1322	25		
OR				
Smoke point, mm and	D1322	18		
Naphthalenes, vol. %	D1840		3.0	
<u>Burning Quality</u>	D187	Report		6

**NOTES:**

1. Product shall be clear and bright and free of suspended matter.
2. Additive requirements/restrictions - refer to section 3.2.
3. At this time, the test limits described in MIL-T-5624P, Appendix A, parts 70.a(1) and 70.b will not be imposed.
4. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
5. Mercaptan Sulfur waived if fuel is negative by Doctor test.
6. Typical results pass according to Paragraph 4.2 of ASTM D3699 Standard Specifications for kerosine.
7. The referee method will be D2386
8. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.17

### SPECIFICATIONS FOR BONDED AVIATION KEROSENE GRADE 56

#### **EPA Designation: Jet Fuel**

Cancels Previous Issues of Grade 56

Shipments of Grade 56 must meet specifications for Fungible Aviation Kerosine Grade 54.

January 2010

\*Denotes Change

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.18

### SPECIFICATIONS FOR SEGREGATED KEROSENE GRADE 57

#### EPA Designation: Kerosene

Cancels Previous Issues of Grade 57

<u>Product Property</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Sulfur, ppmwt	D2622, D5453 D1266, D4294		500	1

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge the following information:

- Gravity
- Flash
- WSIM
- Electrical Conductivity
- Any other product property that does not meet our fungible specifications for 54 grades.

The pre-shipment documentation with the actual results must be received before shipment.

Notes:

1. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
2. Additive requirements/restrictions - refer to section 3.2.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE MILITARY JP-8

3.19

**EPA Designation: Except distillate covered by national security exemption under 80.606**

Cancels Previous Issues of Grade 58

Shipments of Grade 58 must meet the latest military specifications for JP-8.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.20

### SPECIFICATIONS FOR SEGREGATED DISTILLATE BLENDSTOCK GRADE 59

**EPA Designation: None Required (Product is an unfinished blendstock)**

Cancels Previous Issues of Grade 59

<u>Product Property</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Gravity	D287, D1298, D4052	37	51	
Flash Point, °F	D56, D3828	100		
Sulfur, ppmwt	D2622, D5453 D7039, D4294		3000	3
Nace Corrosion Electrical	TM0172-2001	B+ (origin)		
Conductivity, pS/m @ 21°C(70°F)	D2624		Report	

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge any product property that does not meet our fungible specifications for 54 grade.

**NOTES:**

1. Product shall be clear and bright and free of suspended matter.
2. The pre-shipment documentation with the actual results must be received before shipment.
3. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
4. Additives requirements/restrictions - refer to section 3.2.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

\*3.21.1

## SPECIFICATIONS FOR FUNGIBLE ULTRA LOW SULFUR DIESEL FUEL - GRADE 61

**EPA Designation: MVNRLM, Motor vehicle diesel fuel, #2D, 15 ppm sulfur motor vehicle diesel fuel**

Cancels Previous Issues of Grade 61

<u>PRODUCT PROPERTY</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Gravity API	D287, D1298, D4052	30		
Flash Point, °F				
Pensky-Martin	D93	130		
Physical Distillation, °C(°F)	D86			5
50%			Report	
90%		282(540)	338(640)	
End Point			366(690)	
or Simulated Distillation, °C(°F)	D2887			5
50% recovered			Report	
90% recovered		300(572)	356(673)	
End Point			421(790)	
Color ASTM	D1500, D6045		2.5	
Color Visual		Undyed		
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4	
Pour Point	D97, D5949, D5950, D5985			2
Cloud Point	D2500, D5771, D5772, D5773			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D2622, D5453 D7039, other		10 14	Origin Delivery 3
*Cetane Number	D613, D6890, D7170	40		4
Aromatics (Volume %)	D1319		31.7	
or Aromatics by Cetane Index	D976	40		
Ash, wt. %	D482		0.01	
Carbon Residue: Ramsbottom				
on 10% Bottom	D524		0.35	
BS&W, vol. %	D2709			
	or equivalent		< 0.05	
Thermal stability, 90 minutes				
150°C Pad rating,				
DuPont scale			7	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
Haze rating @ 25°C (77°F)	D4176			
	Procedure 2		2	
Nace Corrosion	TM0172-2001	B+ (Origin)		
Electrical				
Conductivity, pS/m @ 21°C (70°F)	D2624		250	

January 2010

\*Denotes Change

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

### 3.21.2 SPECIFICATIONS FOR FUNGIBLE ULTRA LOW SULFUR DIESEL FUEL - GRADE 61

Cancels Previous Issues of Grade 61

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

#### NOTES:

1. Additive requirements/restrictions - refer to section 3.2.
2. This schedule denotes the fluidity of the distillate at the time and place of origin.

Pour Point – August 1st through March 14th	Maximum: -18°C (0°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)

Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
---	-----------------------

Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)
--	-----------------------

The referee method will be Pour point D97 and Cloud point D2500

3. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
4. Where cetane number by test method D613 is not available, test method D4737B can be used as an approximation.
5. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

\*3.23.1

### SPECIFICATIONS FOR FUNGIBLE ULTRA LOW SULFUR DIESEL FUEL NONROAD, LOCOMOTIVE, & MARINE GRADE - GRADE 66

**EPA Designation: MVNRLM 15 ppm sulfur NRLM diesel fuel**

<u>PRODUCT PROPERTY</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Gravity API	D287, D1298, D4052	30		
Flash Point, °F				
Pensky-Martin	D93	130		
Physical Distillation, °C(°F)	D86			5
50%			Report	
90%		282(540)	338(640)	
End Point			366(690)	
or Simulated Distillation, °C(°F)	D2887			5
50% recovered			Report	
90% recovered		300(572)	356(673)	
End Point			421(790)	
Color ASTM	D1500, D6045		2.5	
Color Visual		Undyed		
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4	
Pour Point	D97, D5949, D5950, D5985			2
Cloud Point	D2500, D5771, D5772, D5773			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D2622, D5453 D7039, other		10 14	Origin Delivery 3
*Cetane Number	D613, D6890, D7170	40		4
Aromatics (Volume %)	D1319		31.7	
or Aromatics by Cetane Index	D976	40		
Ash, wt. %	D482		0.01	
Carbon Residue: Ramsbottom				
on 10% Bottom	D524		0.35	
BS&W, vol. %	D2709			
	or equivalent		< 0.05	
Thermal stability, 90 minutes				
150°C Pad rating, DuPont scale			7	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
Haze rating @ 25°C (77°F)	D4176			
	Procedure 2		2	
Nace Corrosion	TM0172-2001	B+ (Origin)		
Electrical				
Conductivity, pS/m @ 21°C(70°F)	D2624		250	

January 2010

\*Denotes Change

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.23.2

### SPECIFICATIONS FOR FUNGIBLE ULTRA LOW SULFUR DIESEL FUEL NONROAD, LOCOMOTIVE, & MARINE GRADE - GRADE 66

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

#### NOTES:

1. Additive requirements/restrictions - refer to section 3.2.
2. This schedule denotes the fluidity of the distillate at the time and place of origin.

Pour Point – August 1st through March 14th	Maximum: -18°C (0°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

3. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
4. Where cetane number by test method D613 is not available, test method D4737B can be used as an approximation.
5. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.
6. ASTM color measurement before addition of dye

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.24

### SPECIFICATIONS FOR SEGREGATED DYED HEATING OIL FOR INTRAHARBOR MOVEMENTS ONLY GRADE 70

**EPA Designation:** Heating Oil

Cancels Previous Issues of Grade 70

**This product is for Intraharbor movements only.**

<u>Product property</u>	<u>Method</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Note</u>
Total Sulfur, ppmwt	D2622, D5453 D7039		2000	1
Nace Corrosion	TM0172-2001	B+ (origin)		

#### Dye Requirement

This product must contain red dye at a minimum concentration, or spectral equivalence of 3.9 pounds of Solid Red #26 per 1,000 barrels.

Grade 70 Fuel Oil must meet all specifications for Grade 88 Heating Oil, with the exception of the dye requirement above. Colonial will not add dye to Grade 70.

#### Notes:

1. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
2. Additives requirements/restrictions - refer to section 3.2.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.25

### SPECIFICATIONS FOR SEGREGATED HIGH SULFUR DISTILLATE FUEL FOR EXPORT ONLY - GRADE 71

**EPA Designation:** Distillate fuel for export only

Cancels Previous Issues of Grade 71

<u>Product property</u>	<u>Method</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Note</u>
Total Sulfur, ppmwt	D2622, D5453 D7039		2000	1
Nace Corrosion Electrical	TM0172-2001	B+ (origin)		
Conductivity, pS/m @ 21°C(70°F)	D2624		250	

This product is for export only and is not required to contain dye. It may not be used in the continental U.S. without the addition of dye to meet domestic fuel oil requirements.

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge the following information:

Gravity

Flash

Sulfur

Any other product property that does not meet our fungible specifications for 75 grade.

The pre-shipment documentation with the actual results must be received before shipment.

Notes:

1. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
2. Additive requirements/restrictions - refer to section 3.2.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS SPECIFICATIONS FOR SEGREGATED LOW SULFUR NRLM DIESEL FUEL GRADE 72

3.26

**EPA Designation: MVNRLM, 500 ppm sulfur NRLM diesel fuel**

Cancels Previous Issues of Grade 72

<u>Product property</u>	<u>Method</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Notes</u>
Sulfur, ppmwt	D2622, D5453 D7039, D6920		500	1
Color Visual		Undyed		
Nace Corrosion	TM0172-2001	B+ (origin)		
Electrical				
Conductivity, pS/m @ 21°C(70°F)	D2624		250	

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge the following information:

Gravity

Flash

Any other product property that does not meet our fungible specifications for 74 grade.

The pre-shipment documentation with the actual results must be received before shipment.

Notes:

1. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
2. Additive requirements/restrictions - refer to section 3.2.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS SPECIFICATIONS FOR SEGREGATED LOW SULFUR HIGHWAY DIESEL FUEL GRADE 73

3.27

**EPA Designation: MVNRLM, Motor vehicle diesel fuel, #2D, 500 ppm sulfur motor vehicle diesel fuel**

Cancels Previous Issues of Grade 73

<u>Product property</u>	<u>Method</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Notes</u>
Sulfur, ppmwt	D2622, D5453 D7039, D6920		500	1
Nace Corrosion Electrical	TM0172-2001	B+ (origin)		
Conductivity, pS/m @ 21°C(70°F)	D2624		250	

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge the following information:

Gravity

Flash

Any other product property that does not meet our fungible specifications for 74 grade.

The pre-shipment documentation with the actual results must be received before shipment.

Notes:

1. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
2. Additive requirements/restrictions - refer to section 3.2.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE LOW SULFUR HIGHWAY DIESEL FUEL GRADE 74

\*3.28.1

**EPA Designation: MVNRLM, Motor vehicle diesel fuel, #2D, 500 ppm sulfur motor vehicle diesel fuel**

Cancels Previous Issues of Grade 74

<u>PRODUCT PROPERTY</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Gravity API	D287, D1298, D4052	30		
Flash Point, °F				
Pensky-Martin	D93	130		
Physical Distillation, °C(°F)	D86			5
50%			Report	
90%		282(540)	338(640)	
End Point			366(690)	
or Simulated Distillation, °C(°F)	D2887			5
50% recovered			Report	
90% recovered		300(572)	356(673)	
End Point			421(790)	
Color ASTM	D1500,D6045		2.5	
Color Visual		Undyed		
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4	
Pour Point	D97, D5949, D5950, D5985			2
Cloud Point	D2500, D5771, D5772, D5773			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D2622, D5453 D7039, D6920		420 500	Origin Delivery 3
*Cetane Number	D613, D6890, D7170	40		4
Aromatics (Volume %)	D1319		31.7	
or Aromatics by Cetane Index	D976	40		
Ash, wt.%	D482		0.01	
Carbon Residue: Ramsbottom				
on 10% Bottom	D524		0.35	
BS&W, vol.%	D2709			
	or equivalent		< 0.05	
Thermal stability, 90 minutes				
150°C Pad rating,				
DuPont scale			7	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
Haze rating @ 25°C (77°F)	D4176			
	Procedure 2		2	
Nace Corrosion	TM0172-2001	B+ (Origin)		
Electrical				
Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE LOW SULFUR HIGHWAY DIESEL FUEL GRADE 74

3.28.2

Cancels Previous Issues of Grade 74

### NOTES:

1. Additive requirements/restrictions - refer to section 3.2.
2. This schedule denotes the fluidity of the distillate at the time and place of origin.

Pour Point – August 1st through March 14th	Maximum: -18°C (0°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

3. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
4. Where cetane number by test method D613 is not available, test method D4737B can be used as an approximation.
5. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

\*3.29.1

### SPECIFICATIONS FOR SEGREGATED HIGH SULFUR NONROAD, LOCOMOTIVE AND MARINE DIESEL FUEL GRADE 75

**EPA Designation:** MVNRLM, NRLM diesel fuel, High sulfur

Cancels Previous Issues of Grade 75

<u>PRODUCT PROPERTY</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Gravity API	D287, D1298, D4052	30		
Flash Point, °F				
Pensky-Martin	D93	130		
Physical Distillation, °C(°F)	D86			7
50%			Report	
90%		282(540)	338(640)	
End Point			366(690)	
or Simulated Distillation, °C(°F)	D2887			7
50% recovered			Report	
90% recovered		300(572)	356(673)	
End Point			421(790)	
Color ASTM	D1500,D6045		2.5	5
Color Visual		Dyed		
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4	
Pour Point	D97, D5949, D5950, D5985			2
Cloud Point	D2500, D5771, D5772, D5773			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D2622, D5453 D7039		5000	4
*Cetane Number	D613, D6890 , D7170	40		6
Ash, wt.%	D482		0.01	
Carbon Residue: Ramsbottom on 10% Bottom	D524		0.35	
BS&W, vol.%	D2709 or equivalent		< 0.05	
Thermal stability, 90 minutes 150°C Pad rating, DuPont scale			7	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
Haze rating @ 25°C (77°F)	D4176			
Procedure 2			2	
Nace Corrosion	TM0172-2001	B+ (Origin)		
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.29.2

### SPECIFICATIONS FOR SEGREGATED HIGH SULFUR NONROAD, LOCOMOTIVE AND MARINE DIESEL FUEL GRADE 75

Cancels Previous Issues of Grade 75

#### NOTES:

1. Additive requirements/restrictions - refer to section 3.2.

2. This schedule denotes the fluidity of the distillate at the time and place of origin.

Pour Point – August 1st through March 14th

Maximum: -18°C (0°F).

Pour Point – March 15th through July 31st

Maximum: -12°C (+10°F)

Cloud Point – August 1st through March 14th

Maximum: -9°C (+15°F)

Cloud Point – March 15th through July 31st

Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

3. Dye Requirement:

This product must exhibit visual evidence that red dye is present. The maximum allowable concentration, or spectral equivalence, is 0.75 pounds of Solid Red #26 per 1,000 barrels.

This product does not meet IRS excise tax requirements for dye.

4. Certain states and localities north of Virginia have sulfur limits that are less than 0.50 wt. %. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.

5. ASTM color measurement before addition of dye.

6. Where cetane number by test method D613 is not available, test method D4737A can be used as an approximation.

7. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE LOW SULFUR NONROAD, LOCOMOTIVE & MARINE GRADE 76

\*3.30.1

**EPA Designation: MVNRLM, 500 ppm sulfur NRLM diesel fuel**

Cancels Previous Issues of Grade 76

<u>PRODUCT PROPERTY</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Gravity API	D287, D1298, D4052	30		
Flash Point, °F Pensky-Martin	D93	130		
Physical Distillation, °C(°F) 50% 90% End Point	D86		Report 282(540) 338(640) 366(690)	6
or Simulated Distillation, °C(°F) 50% recovered 90% recovered End Point	D2887		Report 300(572) 356(673) 421(790)	6
Color ASTM Color Visual	D1500, D6045		2.5 Undyed	3
Viscosity, cSt @ 40°C (104°F) Pour Point	D445 D97, D5949, D5950, D5985,	1.9	3.4	2
Cloud Point	D2500, D5771, D5772, D5773			2
Corrosion, 3 hrs. @ 50°C (122°F) Total Sulfur, ppmwt	D130 D2622, D5453 D7039, D6920		1 420 500	5 Origin Delivery
*Cetane Number Aromatics (Volume %) or Aromatics by Cetane Index Ash, wt.% Carbon Residue: Ramsbottom on 10% Bottom BS&W, vol.%	D613, D6890, D7170 D1319 D976 D482 D524 D2709 or equivalent	40 40	31.7 0.01 0.35 < 0.05	4
Thermal stability, 90 minutes 150°C Pad rating, DuPont scale OR			7	
Oxidation stability, mg/100 ml Haze rating @ 25°C (77°F)	D2274 D4176 Procedure 2		2.5 2	
Nace Corrosion Electrical Conductivity, pS/m @ 21°C(70°F)	TM0172-2001 D2624	B+ (Origin)	250	

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE LOW SULFUR NONROAD, LOCOMOTIVE & MARINE GRADE 76

3.30.2

Cancels Previous Issues of Grade 76

### NOTES:

1. Additives requirements/restrictions - refer to section 3.2.

2. This schedule denotes the fluidity of the distillate at the time and place of origin.

Pour Point – August 1st through March 14th

Maximum: -18°C (0°F).

Pour Point – March 15th through July 31st

Maximum: -12°C (+10°F)

Cloud Point – August 1st through March 14th

Maximum: -9°C (+15°F)

Cloud Point – March 15th through July 31st

Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

3. ASTM color measurement before addition of dye.

4. Where cetane number by test method D613 is not available, test method D4737B can be used as an approximation.

5. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.

6. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE HIGH SULFUR LOW DYED HEATING OIL GRADE 77

3.31.1

### EPA Designation: Heating Oil

Cancels Previous Issues of Grade 77

<u>PRODUCT PROPERTY</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Gravity API	D287, D1298, D4052	30		
Flash Point, °F				
Pensky-Martin	D93	130		
Physical Distillation, °C(°F)	D86			6
50%			Report	
90%		282(540)	338(640)	
End Point			366(690)	
or Simulated Distillation, °C(°F)	D2887			6
50% recovered			Report	
90% recovered		300(572)	356(673)	
End Point			421(790)	
Color ASTM	D1500,D6045		2.5	4
Color Visual				
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4	
Pour Point	D97, D5949, D5950, D5985			2
Cloud Point	D2500, D5771, D5772, D5773			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D2622, D5453 D7039, D4294		2000	5
Ash, wt.%	D482		0.01	
Carbon Residue: Ramsbottom				
on 10% Bottom	D524		0.35	
BS&W, vol.%	D2709 or equivalent		< 0.05	
Thermal stability, 90 minutes				
150°C Pad rating, DuPont scale			7	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
Haze rating @ 25°C (77°F)	D4176 Procedure 2		2	
Nace Corrosion	TM0172-2001	B+ (Origin)		
Electrical				
Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE HIGH SULFUR LOW DYED HEATING OIL GRADE 77

3.31.2

Cancels Previous Issues of Grade 77

### NOTES:

1. Additive requirements/restrictions - refer to section 3.2.

2. This schedule denotes the fluidity of the distillate at the time and place of origin.

Pour Point – August 1st through March 14th

Maximum: -18°C (0°F).

Pour Point – March 15th through July 31st

Maximum: -12°C (+10°F)

Cloud Point – August 1st through March 14th

Maximum: -9°C (+15°F)

Cloud Point – March 15th through July 31st

Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

3. Dye Requirement:

This product must exhibit visual evidence that red dye is present. The maximum allowable concentration, or spectral equivalence, is 0.75 pounds of Solid Red #26 per 1,000 barrels.

This product does not meet IRS excise tax requirements for dye.

4. ASTM color measurement before addition of dye

5. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.

6. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.32

### SPECIFICATIONS FOR FUNGIBLE MILITARY DIESEL FUEL MARINE GRADE 78

**EPA Designation: Except distillate covered by national security exemption under 80.606**

Cancels Previous Issues of Grade 78

Shipments of Grade 78 must meet the latest military specification for DFM.

January 2010

\*Denotes Change

57

78 Grade Page 1 of 1

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.33

### SPECIFICATIONS FOR SEGREGATED DISTILLATE BLENDSTOCKS GRADE 79

**EPA Designation: None Required (Product is an unfinished blendstock)**

Cancels Previous Issues of Grade 79

<u>Product property</u>	<u>Method</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Note</u>
Gravity API	D287, D1298, D4052	25	42	
Flash Point, °F Pensky-Martin	D93	100		
Nace Corrosion	TM0172-2001	B+ (origin)		
Total Sulfur, ppmwt	D2622,D5453 D7039		10000	2
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

#### Dye Requirement

This product must exhibit visual evidence that red dye is present. The maximum allowable concentration, or spectral equivalence, is 0.75 pounds of Solid Red #26 per 1,000 barrels. This product does not meet IRS excise tax requirements for dye.

A waiver from Quality Assurance for the dye requirement will be given if the source and ultimate destination are refineries.

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge the following information:

#### NOTE:

The pre-shipment documentation with the actual results must be received before shipment.

2. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.

3. Additive requirements/restrictions - refer to section 3.2.

January 2010

# Colonial Pipeline Company

**PRODUCT SPECIFICATIONS**  
**SPECIFICATIONS FOR FUNGIBLE LOW SULFUR NONROAD,**  
**LOCOMOTIVE & MARINE DIESEL FUEL - DYED BY CPC - GRADE 80**

\*3.34.1

**EPA Designation: MVNRLM, 500 ppm sulfur NRLM diesel fuel**

Cancels Previous Issues of Grade 80

<u>PRODUCT PROPERTY</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Gravity API	D287, D1298, D4052	30		
Flash Point, °F				
Pensky-Martin	D93	130		
Physical Distillation, °C(°F)	D86			7
50%			Report	
90%		282(540)	338(640)	
End Point			366(690)	
or Simulated Distillation, °C(°F)	D2887			7
50% recovered			Report	
90% recovered		300(572)	356(673)	
End Point			421(790)	
Color ASTM	D1500, D6045		2.5	4
Color Visual				
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4	
Pour Point	D97, D5949, D5950, D5985			2
Cloud Point	D2500, D5771, D5772, D5773			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D2622, D5453 D7039, D6920		420 500	6 Origin Delivery
*Cetane Number	D613, D6890, D7170	40		5
Aromatics (Volume %)	D1319		31.7	
or Aromatics by Cetane Index	D976	40		
Ash, wt. %	D482		0.01	
Carbon Residue: Ramsbottom				
on 10% Bottom	D524		0.35	
BS&W, vol. %	D2709 or equivalent		< 0.05	
Thermal stability, 90 minutes				
150°C Pad rating,				
DuPont scale			7	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
Haze rating @ 25°C (77°F)	D4176 Procedure 2		2	
Nace Corrosion	TM0172-2001	B+ (Origin)		
Electrical				
Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

3.34.2

### SPECIFICATIONS FOR FUNGIBLE LOW SULFUR NONROAD, LOCOMOTIVE & MARINE DIESEL FUEL - DYED BY CPC - GRADE 80

Cancels Previous Issues of Grade 80

#### NOTES:

1. Additive requirements/restrictions - refer to section 3.2.

2. This schedule denotes the fluidity of the distillate at the time and place of origin.

Pour Point – August 1st through March 14th

Maximum: -18°C (0°F).

Pour Point – March 15th through July 31st

Maximum: -12°C (+10°F)

Cloud Point – August 1st through March 14th

Maximum: -9°C (+15°F)

Cloud Point – March 15th through July 31st

Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

3. Dye Requirement:

Origin: This product may not exhibit visual evidence that red dye is present.

Delivery: This product will be dyed by CPC to meet a minimum dye concentration, or spectral equivalence, of 3.9 pounds of Solid Red #26 per 1,000 barrels.

4. ASTM color measurement before addition of dye

5. Where cetane number by test method D613 is not available, test method D4737B can be used as an approximation.

6. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.

7. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

January 2010

# Colonial Pipeline Company

3.35

## PRODUCT SPECIFICATIONS SPECIFICATIONS FOR SEGREGATED LOW SULFUR NRLM DIESEL FUEL GRADE 82

**EPA Designation: MVNRLM, 500 ppm sulfur NRLM diesel fuel**

Cancels Previous Issues of Grade 82

<u>Product property</u>	<u>Method</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Notes</u>
Sulfur, ppmwt	D2622, D5453 D7039, D6920		500	1
Color Visual				2
Nace Corrosion	TM0172-2001	B+ (origin)		
Electrical				
Conductivity, pS/m @ 21°C(70°F)	D2624		250	

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge the following information:

Gravity

Flash

Any other product property that does not meet our fungible specifications for 74 grade.

The pre-shipment documentation with the actual results must be received before shipment.

Notes:

1. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
2. Dye Requirement  
Origin: This product may not exhibit visual evidence that red dye is present.  
Delivery: This product will be dyed by CPC to meet a minimum dye concentration, or spectral equivalence, of 3.9 pounds of Solid Red #26 per 1,000 barrels.
2. Additive requirements/restrictions - refer to section 3.2.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

### \*3.36.1 SPECIFICATIONS FOR FUNGIBLE DYED LOW SULFUR DIESEL FUEL GRADE 84

**EPA Designation: MVNRLM, Motor vehicle diesel fuel, #2D, 500 ppm sulfur motor vehicle diesel fuel**

Cancels Previous Issues of Grade 84

<u>PRODUCT PROPERTY</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Gravity API	D287, D1298, D4052	30		
Flash Point, °F				
Pensky-Martin	D93	130		
Physical Distillation, °C(°F)	D86			6
50%			Report	
90%		282(540)	338(640)	
End Point			366(690)	
or Simulated Distillation, °C(°F)	D2887			6
50% recovered			Report	
90% recovered		300(572)	356(673)	
End Point			421(790)	
Color ASTM	D1500, D6045		2.5	
Color Visual				3
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4	
Pour Point	D97, D5949, D5950, D5985,			2
Cloud Point	D2500, D5771, D5772, D5773			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D2622, D5453 D7039, D6920		420 500	Origin Delivery 4
*Cetane Number	D613, D6890, D7170	40		5
Aromatics (Volume %)	D1319		31.7	
or Aromatics by Cetane Index	D976	40		
Ash, wt. %	D482		0.01	
Carbon Residue: Ramsbottom				
on 10% Bottom	D524		0.35	
BS&W, vol. %	D2709			
	or equivalent		< 0.05	
Thermal stability, 90 minutes				
150°C Pad rating, DuPont scale			7	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
Haze rating @ 25°C (77°F)	D4176			
	Procedure 2		2	
Nace Corrosion	TM0172-2001	B+ (Origin)		
Electrical				
Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

### 3.36.2 SPECIFICATIONS FOR FUNGIBLE DYED LOW SULFUR DIESEL FUEL GRADE 84

Cancels Previous Issues of Grade 84

#### NOTES:

1. Additive requirements/restrictions - refer to section 3.2.

2. This schedule denotes the fluidity of the distillate at the time and place of origin.

Pour Point – August 1st through March 14th

Maximum: -18°C (0°F).

Pour Point – March 15th through July 31st

Maximum: -12°C (+10°F)

Cloud Point – August 1st through March 14th

Maximum: -9°C (+15°F)

Cloud Point – March 15th through July 31st

Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

3. Dye Content:

Origin: This product may not exhibit visual evidence that red dye is present.

Delivery: This product will be dyed by CPC to meet a minimum dye concentration, or spectral equivalence, of 3.9 pounds of Solid Red #26 per 1,000 barrels.

4. Origin laboratory certifying sulfur content must qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.

5. Where cetane number by test method D613 is not available, test method D4737B can be used as an approximation.

6. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

\*3.37.1

### SPECIFICATIONS FOR SEGREGATED DYED HIGH SULFUR NONROAD, LOCOMOTIVE & MARINE DIESEL FUEL GRADE 85

**EPA Designation:** MVNRLM, NRLM diesel fuel, High sulfur

Cancels Previous Issues of Grade 85

<u>PRODUCT PROPERTY</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Gravity API	D287, D1298, D4052	30		
Flash Point, °F				
Pensky-Martin	D93	130		
Physical Distillation, °C(°F)	D86			7
50%			Report	
90%		282(540)	338(640)	
End Point			366(690)	
or Simulated Distillation, °C(°F)	D2887			7
50% recovered			Report	
90% recovered		300(572)	356(673)	
End Point			421(790)	
Color ASTM	D1500,D6045		2.5	5
Color Visual				
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4	
Pour Point	D97, D5949, D5950, D5985			2
Cloud Point	D2500, D5771, D5772, D5773			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D2622, D5453 D7039		5000	4
*Cetane Number	D613, D6890, D7170	40		6
Ash, wt.%	D482		0.01	
Carbon Residue: Ramsbottom				
on 10% Bottom	D524		0.35	
BS&W, vol.%	D2709 or equivalent		< 0.05	
Thermal stability, 90 minutes				
150°C Pad rating, DuPont scale			7	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
Haze rating @ 25°C (77°F)	D4176 Procedure 2		2	
Nace Corrosion	TM0172-2001	B+ (Origin)		
Electrical				
Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

### 3.37.2 SPECIFICATIONS FOR SEGREGATED DYED HIGH SULFUR NONROAD, LOCOMOTIVE & MARINE DIESEL FUEL GRADE 85

Cancels Previous Issues of Grade 85

#### NOTES:

1. Additive requirements/restrictions - refer to section 3.2.

2. This schedule denotes the fluidity of the distillate at the time and place of origin.

Pour Point – August 1st through March 14th	Maximum: -18°C (0°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

3. Dye Requirement:

Origin: This product must exhibit visual evidence that red dye is present. The maximum allowable concentration, or spectral equivalence, is 0.75 pounds of Solid Red #26 per 1,000 barrels.

Delivery: This product will be dyed by CPC to meet a minimum dye concentration, or spectral equivalence, of 3.9 pounds of Solid Red #26 per 1,000 barrels.

4. Certain states and localities north of Virginia have sulfur limits that are less than 0.50 wt. %. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.

5. ASTM color measurement before addition of dye

6. Where cetane number by test method D613 is not available, test method D4737A can be used as an approximation.

7. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

January 2010

# Colonial Pipeline Company

3.39.1

## PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE HIGH SULFUR HEATING OIL GRADE 88

### EPA Designation: Heating Oil

Cancels Previous Issues of Grade 88

<u>PRODUCT PROPERTY</u>	<u>ASTM Test Method</u>	<u>Test Results</u>		<u>Note</u>
		<u>Minimum</u>	<u>Maximum</u>	
Gravity API	D287, D1298, D4052	30		
Flash Point, °F				
Pensky-Martin	D93	130		
Physical Distillation, °C(°F)	D86			6
50%			Report	
90%		282(540)	338(640)	
End Point			366(690)	
or Simulated Distillation, °C(°F)	D2887			6
50% recovered			Report	
90% recovered		300(572)	356(673)	
End Point			421(790)	
Color ASTM	D1500, D6045		2.5	4
Color Visual				
Viscosity, cSt @ 40°C (104°F)	D445	1.9	3.4	
Pour Point	D97, D5949, D5950, D5985			2
Cloud Point	D2500, D5771, D5772, D5773			2
Corrosion, 3 hrs. @ 50°C (122°F)	D130		1	
Total Sulfur, ppmwt	D2622, D5453 D7039, D4294		2000	5
Ash, wt. %	D482		0.01	
Carbon Residue: Ramsbottom				
on 10% Bottom	D524		0.35	
BS&W, vol. %	D2709			
	or equivalent		< 0.05	
Thermal stability, 90 minutes				
150°C Pad rating, DuPont scale			7	
OR				
Oxidation stability, mg/100 ml	D2274		2.5	
Haze rating @ 25°C (77°F)	D4176			
	Procedure 2		2	
Nace Corrosion	TM0172-2001	B+ (Origin)		
Electrical				
Conductivity, pS/m @ 21°C(70°F)	D2624		250	

Delivery test results may vary by the smaller of ASTM reproducibility for a given test or any test tolerance as allowed by state or EPA regulations at the point of delivery.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE HIGH SULFUR HEATING OIL GRADE 88

3.39.2

Cancels Previous Issues of Grade 88

### NOTES:

1. Additive requirements/restrictions - refer to section 3.2.
2. This schedule denotes the fluidity of the distillate at the time and place of origin.

Pour Point –August 1st through March 14th	Maximum: -18°C (0°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)

The referee method will be Pour point D97 and Cloud point D2500

### 3. Dye Requirement:

Origin: This product must exhibit visual evidence that red dye is present. The maximum allowable concentration, or spectral equivalence, is 0.75 pounds of Solid Red #26 per 1,000 barrels.

Delivery: This product will be dyed by CPC to meet a minimum dye concentration, or spectral equivalence, of 3.9 pounds of Solid Red #26 per 1,000 barrels.

4. ASTM color measurement before addition of dye
5. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.
6. Either physical or simulated distillation can be used. The referee test method will be ASTM D 86.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS

### 3.40 SPECIFICATIONS FOR SEGREGATED DISTILLATE BLENDSTOCKS GRADE 89

**EPA Designation: None Required (Product is an unfinished blendstock)**

Cancels Previous Issues of Grade 89

<u>Product property</u>	<u>Method</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Note</u>
Gravity API	D287, D1298, D4052	25	42	
Flash Point, °F Pensky-Martin	D93	100		
Nace Corrosion	TM0172-2001	B+ (origin)		
Total Sulfur, ppmwt	D2622, D5453 D7039, D4294		10,000	2
Electrical Conductivity, pS/m @ 21°C(70°F)	D2624		250	

**Dye Requirement**

**Origin:** This product must exhibit visual evidence that red dye is present. The maximum allowable concentration, or spectral equivalence, is 0.75 pounds of Solid Red #26 per 1,000 barrels.

**Delivery:** This product will be dyed by CPC to meet a minimum dye concentration, or spectral equivalence, of 3.9 pounds of Solid Red #26 per 1,000 barrels.

A waiver from Quality Assurance for the dye requirement will be given if the source and ultimate destination are refineries.

In order to allow for the proper placement of the batch in our sequence, when nominating the batch, the shipper must supply to the best of his knowledge the following information:

**NOTE:**

1. This schedule denotes the fluidity of the distillate at the time and place of origin.

Pour Point –August 1st through March 14th	Maximum: -18°C (0°F).
Pour Point – March 15th through July 31st	Maximum: -12°C (+10°F)
Cloud Point – August 1st through March 14th	Maximum: -9°C (+15°F)
Cloud Point – March 15th through July 31st	Maximum: -7°C (+20°F)

The pre-shipment documentation with the actual results must be received before shipment.

2. Origin laboratory certifying sulfur content can qualify the test method used per EPA Performance Based Testing Criteria (see CFR 80.584). The referee test method will be ASTM D5453.

3. Additive requirements/restrictions - refer to section 3.2.

January 2010

# Colonial Pipeline Company

## PRODUCT SPECIFICATIONS SPECIFICATIONS FOR FUNGIBLE TRANSMIX

3.41

Cancels Previous Issues of Grade 90-94

Each grade can consist of varying concentrations of the following distillate and gasoline:

<u>Grade</u>	<u>Distillate</u>	<u>Gasoline</u>
90	Distillate	Conventional
91	Distillate	RFG - VOC Controlled
92	Distillate	RFG - Non-VOC Controlled
93	Distillate	RBOB - VOC Controlled
94	Distillate	RBOB - Non-VOC Controlled

January 2010