

Section 3

FUNGIBLE PRODUCT SPECIFICATIONS

The following are instructions governing the quality of products offered for shipment as Fungible Products.

Introduction:

The American Society for Test Materials (ASTM) latest test methods will apply for all testing of products unless otherwise indicated in the specifications or required by federal, state or local regulations. .

General:

1. Workmanship -The finished product shall be free of undissolved water, sediment or other foreign materials in suspension and shall be clear and bright in origin shipping tanks. Top, middle, and bottom samples may not vary more than 1.0° API from the gravity of the composite.
The product temperature of shipping tanks must not exceed 100° F.
2. Two hours prior to lifting, Shipper will be required to furnish to Explorer a Certificate of Analysis warranting to Explorer that all the product scheduled for transportation as a Fungible product meets the required specifications established by Explorer. Explorer may sample and test shipments of Fungible products prior to acceptance, and in the event of variance between Shipper's certificate and Explorer's test, the latter shall prevail.

Acceptance of Fungible products into Explorer prior to receipt of the Certificate of Analysis or testing of products by Explorer during receipt of shipment does not constitute a waiver of product specification requirements, nor relieve the shipper of the responsibility for furnishing a Certificate of Analysis to Explorer.

3. Explorer may sample and have tested each batch of fungible products for specifications tests. **The expense of sampling and testing any off specification product will be for the Shippers account.**
4. Any tests performed by Explorer are for Explorer's information and shall not in any way relieve Shipper of the necessity for compliance with specifications.
5. If any of the test data obtained in the examination of scheduled shipments are questionable, a recheck will be made.
6. Explorer reserves the right to reject any products into their fungible stream when a sample obtained from any tank level or line sample at origins is found to deviate from the Shipper's Certificate of Analysis. Products not

meeting fungible specifications will be moved as segregated batches and the Shipper will be so advised.

7. Explorer reserves the right to sample and check the water level below any product in tankage, including tank lines, scheduled for shipment. Water in tank lines is to be drained prior to pumping.
8. Explorer reserves the right to reject gasolines, jet fuels, fuel oils and any other products scheduled for shipment that contain water or other impurities in accordance with Item 10 of current FERC tariff. This includes undissolved water, haze, or cloudy conditions present in samples from origin tankage or at points of custody transfer at origin locations. Fuel oils will be considered acceptable if they pass a maximum #2 haze (ASTM D4176) rating in origin tankage or at points of custody transfer at origin locations. Explorer may require the shipper to remove the water received, and/or invoice the shipper for water disposal and associated costs.
9. Heavy metals are not allowed to be present.
10. Gasoline grades may not contain oxygenates, such as ethers and alcohols. The use of any non-hydrocarbon blending component is prohibited. Origin max. for MTBE is .25 vol% before blending.
11. Biodiesel is not allowed to be present.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 31

CONVENTIONAL PREMIUM GASOLINE HOUSTON - DALLAS, TX AREAS

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

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS (1)</u>	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, D1298, D4052		Report
Color			Undyed
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1
Corrosion (Ag) 3 Hrs. @ 122°F	D4814		1
Gum, mg/100ml after washing	D381		4
Doctor or:	D4952		Negative (2)
Mercaptan Sulfur wt. %	D3227		0.002
Sulfur, (ppm wt.)	D2622, D5453, D7039		80
Benzene, vol. %	D3606, D4053		4.9
Oxidation Stability - Minutes	D525	240	
Appearance @ 70°F			(3)
Oxygen, wt. %	D4815, D5599		0.10 (4)
Odor	Nonoffensive		(5)

Octane:	RON: Minimum	D2699	Report
	MON: Minimum	D2700	Report
	(R+M)/2 (AKI):	Minimum	93.0

Volatility - Refer to Page			3-38
Distillation - Refer to Page			3-38
Reid Vapor Pressure -			(6)
Driveability Index (Origin) - Refer to Page			3-38
Additives: Gum Inhibitors, Metal Deactivators, Attached: Page			3-39

Explorer Pipeline

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

CODE 31

- (1) Deliveries may be higher or lower by normal testing and handling tolerance.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See Page 3-2 Paragraph 8.
- (4) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (5) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (6) For products blended to meet EPA or state imposed summer VOC requirements, test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirements.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 36

CONVENTIONAL PREMIUM GASOLINE CENTRAL MISSOURI - SOUTHERN ILLINOIS

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

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS (1)</u>	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, D1298, D4052		Report
Color			UNDYED
Corrosion, 3 Hrs. @ 122°F	D130		1
Gum, mg/100ml after washing	D381		4
Doctor or:	D4952		Negative (2)
Mercaptan Sulfur wt. %	D3227		0.002
Sulfur, (ppmw)	D2622, D5453, D7039		80
Benzene, wt. %	D3606, D4053		4.9
Oxidation Stability - Minutes	D525	240	
Appearance @ 70°F			(3)
Oxygen, wt. %	D4815, D5599	0.10	(4)
Odor	Nonoffensive		(5)

Octane:	RON: Minimum	D2699	Report
	MON: Minimum	D2700	Report
	(R+M)/2 (AKI):	Minimum	93.0

Volatility - Refer to Page			3-38
Distillation - Refer to Page			3-38
Reid Vapor Pressure -			(6)
Driveability Index (Origin) - Refer to Page			3-38
Additives: Gum Inhibitors, Metal Deactivators, Attached: Page			3-39

Explorer Pipeline

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

CODE 36

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See Page 3-2 Paragraph 8.
- (4) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (5) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (6) For products blended to meet EPA or state imposed summer requirements, test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirements.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 41

CONVENTIONAL REGULAR GASOLINE HOUSTON - DALLAS, TX AREAS

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

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS (1)</u>	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, 1298, D4052		Report
Color		UNDYED	
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1
Corrosion (Ag) 3 Hrs. @ 122°F	D4814		1
Gum, mg/100ml after washing	D381		4
Doctor	D4952		Negative (2)
or: Mercaptan Sulfur wt. %	D3227		0.002
Sulfur, (ppmwt)	D2622, D5453, D7039		80
Benzene, vol. %	D3606, D4053		4.9
Oxidation Stability - Minutes	D525	240	
Appearance @ 70°F			(3)
Oxygen, wt. %	D4815, D5599		0.10 (4)
Odor	Nonoffensive		(5)

Octane:	RON: D2699		Report
	MON: Minimum D2700		82.0
	(R+M)/2 (AKI): Minimum		87.0

Volatility - Refer to Page			3-38
Distillation - Refer to Page			3-38
Reid Vapor Pressure -			(6)
Driveability Index (Origin) - Refer to Page			3-38
Additives: Gum Inhibitors, Metal Deactivators, Attached: Page			3-39

Explorer Pipeline

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

CODE 41

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See page 3-2 Paragraph 8.
- (4) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (5) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (6) For products blended to meet EPA or state imposed summer requirements, test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirements.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 45

NORTHERN ILLINOIS - INDIANA AREAS
CENTRAL MISSOURI - SOUTHERN ILLINOIS

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

All parameters apply after blending with denatured fuel ethanol unless noted.

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS (1)</u>	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, D1298, D4052		Report (5)
Color			UNDYED
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1 (5)
Corrosion (Ag) 3 Hrs. @ 122°F	D4814		1 (5)
Gum, mg/100ml after washing	D381		4 (5)
Doctor	D4952		Negative (2,5)
or: Mercaptan Sulfur wt %	D3227		0.002
Sulfur, (ppmwt)	D2622, D5453, D7039		80 (5)
Phosphorous, gm/gal	D3231		0.004 (5)
Benzene, wt. %	D3606		4.90 (5)
Oxidation Stability - Minutes	D525	240	(5)
Appearance @ 70°F			(3)
Oxygen, wt%	D4815, D5599		0.10 (5)
Odor	Nonoffensive		(4)

Octane:	RON: D2699		Report
	MON: Minimum D2700		82.0
	(R+M)/2 (AKI):		87.0

Distillation	D86		
IBP Vol %	D86		Report
10% Vol %	D86		158
50% Vol %	D86	150	250
90% Vol %	D86		374
Reid Vapor Pressure			
After Ethanol Spike	D5191		Report (6)

Explorer Pipeline

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

CODE 45

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) This product shall be free from undissolved water, sediment or other foreign material in suspension.
- (4) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (5) Specifications must be met before blending with denatured fuel ethanol.
- (6) For product blended to meet state or EPA imposed summer RVP requirements, tests must be performed in accordance with the procedures described in 40 CFR, Part 80. Product must meet state, local or EPA specifications at destination.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirements

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 46

CONVENTIONAL REGULAR GASOLINE
NORTHERN ILLINOIS - INDIANA AREAS
CENTRAL MISSOURI - SOUTHERN ILLINOIS

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

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS (1)</u>	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, D1298, D4052		Report
Color			UNDYED
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1
Corrosion (Ag) 3 Hrs. @ 122°F	D4814Annex A1	1	
Gum, mg/100ml after washing	D381		4
Doctor	D4952		Negative (2)
or: Mercaptan Sulfur wt %	D3227		0.002
Sulfur, (ppmwt)	D2622, D5453, D7039		80
Benzene, wt. %	D3606, D4053		4.9
Oxidation Stability - Minutes	D525	240	
Appearance @ 70°F			(3)
Oxygen, wt%	D4815, D5599	0.10	(4)
Odor	Nonoffensive		(5)

Octane:	RON: D2699		Report
	MON: D2700		82.0
	(R+M)/2 (AKI):		87.0

Volatility - Refer to Page			3-38
Distillation - Refer to Page			3-38
Reid Vapor Pressure -			(6)
Driveability Index (Origin)- Refer to Page			3-38
Additives: Gum Inhibitors, Metal Deactivators, Attached: Page			3-39

Explorer Pipeline

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

CODE 46

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See Page 3-2 Paragraph 8.
- (4) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (5) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (6) For products blended to meet EPA or state imposed summer RVP requirements, test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirements.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 3C

REFORMULATED PREMIUM GASOLINE BLENDSTOCK (PBOB)
FOR BLENDING WITH 10% DENATURED FUEL ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
VOC-CONTROLLED REGION 1 COMPLEX MODEL PHASE II
HOUSTON-DALLAS AREA

All parameters apply after blending with denatured fuel ethanol unless noted

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS</u> (1)	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, D1298, D4052		Report (10)
Color			UNDYED
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1
Corrosion (Ag) 3 Hrs. @ 122°F	D4814		1
Gum, mg/100ml after washing	D381		4
Doctor	D4952		Negative (2)
or: Mercaptan Sulfur wt %	D3227		0.002
Sulfur, (ppmwt)	D2622, D5453, D7039		80
Benzene, wt. %	D3606		1.30
Aromatics (vol%)	D5769, D5599		50 (3)
Olefins (vol%)	D1319		25
Oxidation Stability - Minutes	D525	240	
Appearance @ 70°F			(4)
Oxygen, wt% Blended	D4815, D5599	1.7	4.0 (5)
Oxygen, wt% Neat		Report	(6, 10)
E200 (vol%)	D86	30	70
E300 (vol%)	D86	70	100
Emission Performance Reduction (%)		27.0	
Odor		Nonoffensive	(7)
Driveability Index (Origin)			1250

Octane:	RON: D2699	Report	
	MON: D2700	Report	
	(R+M)/2 (AKI):	93.0	(9)

Volatility - Refer to Page	3-38
Distillation - Refer to Page	3-38
Reid Vapor Pressure	Report (8)
Additives: Gum Inhibitors, Metal Deactivators; Attached Page	Page 3-39

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

Explorer Pipeline

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

CODE 3C

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) Refer to test methods published in 40 CFR Chapter 1, Part 80.46.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See page 3-2 Paragraph 8.
- (5) Refer to test method published in 40 CFR, Part 80, Appendix E, Method 3.
- (6) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (7) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (8) For products blended to meet EPA or state imposed summer VOC requirements, test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirement.

- (9) a. This product must be blended with 10% by volume Denatured Fuel Grade Ethanol.
 - b. Federal RFG maximum and minimum testing requirement will apply to the final blends of this product.
 - c. This product, when blended with 10% volume percent of Denatured Fuel Grade Ethanol, and must have a Benzene level of 1.3 volume % or lower and have an Oxygen content of at least 1.7% but not more than 4.0% by wt.
- (10) Specification must be met before blending with denatured fuel ethanol.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 3D

REFORMULATED PREMIUM GASOLINE BLENDSTOCK (PBOB)
FOR BLENDING WITH 10% DENATURED FUEL ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
NON-VOC-CONTROLLED REGION 1 COMPLEX MODEL PHASE II
HOUSTON-DALLAS AREA

All parameters apply after blending with denatured fuel ethanol unless noted

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS (1)</u>	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, D1298, D4052		Report (10)
Color			UNDYED
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1
Corrosion (Ag) 3 Hrs. @ 122°F	D4814		1
Gum, mg/100ml after washing	D381		4
Doctor	D4952		Negative (2)
or: Mercaptan Sulfur wt %	D3227		0.002
Sulfur, (ppmw)	D2622, D5453, D7039		80
Benzene, wt. %	D3606		1.30
Aromatics (vol %)	D5769, D5599		50.0 (3)
Olefins (vol %)	D1319	25.0	
Oxidation Stability - Minutes	D525	240	
Appearance @ 70°F			(4)
Oxygen, wt% Blended	D4815, D5599	1.7	4.0 (5)
Oxygen, wt% Neat		Report	(6, 10)
E200 (vol %)	D86	30.0	70.0
E300 (vol %)	D86	70.0	100.0
Odor		Nonoffensive	(7)

Octane:	RON:	D2699	Report
	MON:	D2700	Report
	(R+M)/2 (AKI):		93.0 (9)
<hr/>			
Volatility - Refer to Page			3-38
Distillation - Refer to Page			3-38
Reid Vapor Pressure -			Report (8)
Driveability Index (Origin) - Refer to Page			3-38
Additives: Gum Inhibitors, Metal Deactivators, Attached: Page			3-39

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

Explorer Pipeline

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

CODE 3D

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) Refer to test methods published in 40 CFR Chapter 1, Part 80.46.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See page 3-2 Paragraph 8.
- (5) Refer to test method published in 40 CFR, Part 80, Appendix E, Method 3.
- (6) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (7) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (8) For products blended to meet EPA test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirement.

- (9) a. This product must be blended with 10% by volume Denatured Fuel Grade Ethanol.
 - b. Federal RFG maximum and minimum testing requirement will apply to the final blends of this product.
 - c. This product, when blended with 10% volume percent of Denatured Fuel Grade Ethanol, and must have a Benzene level of 1.3 volume % or lower and have an Oxygen content of at least 1.7% but not more than 4.0% by wt.
- (10) Specification must be met before blending with denatured fuel ethanol.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 3S

REFORMULATED PREMIUM GASOLINE BLENDSTOCK (PBOB) **
FOR BLENDING WITH 10.0% DENATURED FUEL ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
VOC-CONTROLLED REGION 1 COMPLEX MODEL PHASE II
ST. LOUIS AREA

All parameters apply after blending with denatured fuel ethanol unless noted

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS (1)</u>	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, D1298, D4052		Report (10)
Color			UNDYED
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1
Corrosion (Ag) 3 Hrs. @ 122°F	D4814Annex A1	1	
Gum, mg/100ml after washing	D381		4
Doctor	D4952		Negative (2)
or: Mercaptan Sulfur wt %	D3227		0.002
Sulfur, (ppmw)	D2622, D5453, D7039		80
Benzene, wt. %	D3606		1.30
Aromatics (vol%)	D5769, D5599		50 (3)
Olefins (vol%)	D1319		25
Oxidation Stability - Minutes	D525	240	
Appearance @ 70°F			(4)
Oxygen, wt%	D4815, D5599,	1.7	4.0 (5)
Oxygen, wt% Neat		Report	(6, 10)
E200 (vol%)	D86	30	70
E300 (vol%)	D86	70	100
Emission Performance Reduction (%)		27.0	
Odor		Nonoffensive	(7)
Driveability Index (Origin)			1250
Octane:	RON: D2699	Report	
	MON: D2700	Report	
	(R+M)/2 (AKI):	93.0	
Volatility - Refer to Page			3-38
Distillation - Refer to Page			3-38
Reid Vapor Pressure		Report	(8)
Additives: Gum Inhibitors, Metal Deactivators	Page		3-39

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

Explorer Pipeline

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

CODE 3S

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) Refer to test methods published in 40 CFR Chapter 1, Part 80.46.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See page 3-2 Paragraph 8.
- (5) Refer to test method published in 40 CFR, Part 80, Appendix E, Method 3.
- (6) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (7) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (8) For products blended to meet EPA or state imposed summer VOC requirements, test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirement.

- (9) a. This product must be blended with 10% by volume Denatured Fuel Grade Ethanol.
 - b. Federal RFG maximum and minimum testing requirement will apply to the final blends of this product.
 - c. This product, when blended with 10% volume percent of Denatured Fuel Grade Ethanol, and must have a Benzene level of 1.3 volume % or lower and have an Oxygen content of at least 1.7% but not more than 4.0% by wt.
- (10) Specification must be met before blending with denatured fuel ethanol.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 3T

REFORMULATED PREMIUM GASOLINE BLENDSTOCK (PBOB)
FOR BLENDING WITH 10.0% DENATURED FUEL ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
NON-VOC-CONTROLLED COMPLEX MODEL PHASE II
ST. LOUIS AREA

All parameters apply after blending with denatured fuel ethanol unless noted

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS (1)</u>	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, D1298, D4052		Report (10)
Color			UNDYED
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1
Corrosion (Ag) 3 Hrs. @ 122°F	D4814		1
Gum, mg/100ml after washing	D381		4
Doctor	D4952		Negative (2)
or: Mercaptan Sulfur wt %	D3227		0.002
Sulfur, (ppmw)	D2622, D5453, D7039		80
Benzene, wt. %	D3606		1.30
Aromatics (vol %)	D5769, D5599		50.0 (3)
Olefins (vol %)	D1319		25.0
Oxidation Stability - Minutes	D525	240	
Appearance @ 70°F			(4)
Oxygen, wt% Blended	D4815, D5599	1.7	4.0 (5)
Oxygen, wt% Neat		Report	(6, 10)
E200 (vol %)	D86	30.0	70.0
E300 (vol %)	D86	70.0	100.0
Odor		Nonoffensive	(7)

Octane:	RON: D2699	Report	
	MON: D2700	Report	
	(R+M)/2 (AKI):	93.0	(9)
<hr/>			
Volatility - Refer to Page		3-38	
Distillation - Refer to Page		3-38	
Reid Vapor Pressure -		Report	(8)
Driveability Index (Origin)- Refer to Page		3-38	
Additives: Gum Inhibitors, Metal Deactivators, Attached: Page		3-39	

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

Explorer Pipeline

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

CODE 3T

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) Refer to test methods published in 40 CFR Chapter 1, Part 80.46.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See Page 3-2 Paragraph 8.
- (5) Refer to test method published in 40 CFR, Part 80, Appendix E, Method 3.
- (6) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (7) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (8) For products blended to meet EPA test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirement.

- (9) a. This product must be blended with 10% by volume Denatured Fuel Grade Ethanol.
 - b. Federal RFG maximum and minimum testing requirement will apply to the final blends of this product.
 - c. This product, when blended with 10% volume percent of Denatured Fuel Grade Ethanol, and must have a Benzene level of 1.3 volume % or lower and have an Oxygen content of at least 1.7% but not more than 4.0% by wt.
- (10) Specification must be met before blending with denatured fuel ethanol.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 3U

REFORMULATED PREMIUM GASOLINE BLENDSTOCK (PBOB)
FOR BLENDING WITH 10% DENATURED FUEL ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
VOC-CONTROLLED REGION 2 COMPLEX MODEL PHASE II
CHICAGO AREA

All parameters apply after blending with denatured fuel ethanol unless noted

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS</u> (1)	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, D1298, D4052		Report (10)
Color			UNDYED
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1
Corrosion (Ag) 3 Hrs. @ 122°F	D4814		1
Gum, mg/100ml after washing	D381		4
Doctor	D4952		Negative (2)
or: Mercaptan Sulfur wt %	D3227		0.002
Sulfur, (ppmwt)	D2622, D5453, D7039		80
Benzene, wt. %	D3606		1.30
Aromatics (vol%)	D5769, D5599		50 (3)
Olefins (vol%)	D1319		25
Oxidation Stability - Minutes	D525	240	
Appearance @ 70°F			(4)
Oxygen, wt% Blended	D4815, D5599	1.7	4.0 (5)
Oxygen, wt% Neat		Report	(6, 10)
E200 (vol%)	D86	30	70
E300 (vol%)	D86	70	100
Emission Performance Reduction (%)		25.4	
Odor		Nonoffensive	(7)
Driveability Index (Origin)			1250

Octane:	RON: D2699	Report	
	MON: D2700	Report	
	(R+M)/2 (AKI):	93.0	(9)

Volatility - Refer to Page			3-38
Distillation - Refer to Page			3-38
Reid Vapor Pressure		Report	(8)
Additives: Gum Inhibitors, Metal Deactivators Refer to Page			3-39

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

Explorer Pipeline

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

CODE 3U

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) Refer to test methods published in 40 CFR Chapter 1, Part 80.46.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See Page 3-2 Paragraph 8.
- (5) Refer to test method published in 40 CFR, Part 80, Appendix E, Method 3.
- (6) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (7) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (8) For products blended to meet EPA or state imposed summer VOC requirements, test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirement.

- (9) a. This product must be blended with 10% by volume Denatured Fuel Grade Ethanol.
 - b. Federal RFG maximum and minimum testing requirement will apply to the final blends of this product.
 - c. This product, when blended with 10% volume percent of Denatured Fuel Grade Ethanol, and must have a Benzene level of 1.3 volume % or lower and have an Oxygen content of at least 1.7% but not more than 4.0% by wt.
- (10) Specification must be met before blending with denatured fuel ethanol.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 3X

REFORMULATED PREMIUM GASOLINE BLENDSTOCK (PBOB)
FOR BLENDING WITH 10% DENATURED FUEL ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
NON-VOC-CONTROLLED COMPLEX MODEL PHASE II
CHICAGO AREA

All parameters apply after blending with denatured fuel ethanol unless noted

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS</u> (1)	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, D1298, D4052		Report (10)
Color			UNDYED
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1
Corrosion (Ag) 3 Hrs. @ 122°F	D4814		1
Gum, mg/100ml after washing	D381		4
Doctor	D4952		Negative (2)
or: Mercaptan Sulfur wt %	D3227		0.002
Sulfur, (ppmw)	D2622, D5453, D7039		80
Benzene, wt. %	D3606		1.30
Aromatics (vol %)	D5769, D5599		50.0 (3)
Olefins (vol %)	D1319		25.0
Oxidation Stability - Minutes	D525	240	
Appearance @ 70°F			(4)
Oxygen, wt% Blended	D4815, D5599	1.7	4.0 (5)
Oxygen, wt% Neat		Report	(6, 10)
E200 (vol %)	D86	30.0	70.0
E300 (vol %)	D86	70.0	100.0
Odor		Nonoffensive	(7)

Octane:	RON:	D2699	Report
	MON:	D2700	Report
	(R+M)/2 (AKI):		93.0 (9)
<hr/>			
Volatility - Refer to Page			3-38
Distillation - Refer to Page			3-38
Reid Vapor Pressure -			Report (8)
Driveability Index (Origin)- Refer to Page			3-38
Additives: Gum Inhibitors, Metal Deactivators, Attached: Page			3-39

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

Explorer Pipeline

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

CODE 3X

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) Refer to test methods published in 40 CFR Chapter 1, Part 80.46.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See Page 3-2 Paragraph 8.
- (5) Refer to test method published in 40 CFR, Part 80, Appendix E, Method 3.
- (6) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (7) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (8) For products blended to meet EPA test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirement.

- (9) a. This product must be blended with 10% by volume Denatured Fuel Grade Ethanol.
 - b. Federal RFG maximum and minimum testing requirement will apply to the final blends of this product.
 - c. This product, when blended with 10% volume percent of Denatured Fuel Grade Ethanol, and must have a Benzene level of 1.3 volume % or lower and have an Oxygen content of at least 1.7% but not more than 4.0% by wt.
- (10) Specification must be met before blending with denatured fuel ethanol.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 4C

REFORMULATED REGULAR GASOLINE BLENDSTOCK (RBOB)
FOR BLENDING WITH 10.0% DENATURED FUEL ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
VOC-CONTROLLED REGION 1 COMPLEX MODEL PHASE II
HOUSTON-DALLAS AREA

All parameters apply after blending with denatured fuel ethanol unless noted

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS</u> (1)	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, D1298, D4052		Report (10)
Color			UNDYED
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1
Corrosion (Ag) 3 Hrs. @ 122°F	D4814		1
Gum, mg/100ml after washing	D381		4
Doctor	D4952		Negative (2)
or: Mercaptan Sulfur wt %	D3227		0.002
Sulfur, (ppmwt)	D2622, D5453, D7039		80
Benzene, wt. %	D3606		1.30
Aromatics (vol%)	D5599, D5769		50 (3)
Olefins (vol%)	D1319		25
Oxidation Stability - Minutes	D525	240	
Appearance @ 70°F			(4)
Oxygen, wt% Blended	D4815, D5599	1.7	4.0 (5)
Oxygen, wt% Neat		Report	(6, 10)
E200 (vol%)	D86	30	70
E300 (vol%)	D86	70	100
Emission Performance Reduction (%)		27.0	
Odor		Nonoffensive	(7)
Driveability Index (Origin)			1250

Octane:	RON:	D2699	Report
	MON:	D2700	82.0
	(R+M)/2 (AKI):		87.0 (9)
<hr/>			
Volatility - Refer to Page			3-38
Distillation - Refer to Page			3-38
Reid Vapor Pressure			Report (8)
Additives: Gum Inhibitors, Metal Deactivators			Page 3-39

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

Explorer Pipeline

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

CODE 4C

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) Refer to test methods published in 40 CFR Chapter 1, Part 80.46.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See page 3-2 Paragraph 8.
- (5) Refer to test method published in 40 CFR, Part 80, Appendix E, Method 3.
- (6) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (7) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (8) For products blended to meet EPA or state imposed summer VOC requirements, test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirement.

- (9) a. This product must be blended with 10% by volume Denatured Fuel Grade Ethanol.
 - b. Federal RFG maximum and minimum testing requirement will apply to the final blends of this product.
 - c. This product, when blended with 10% volume percent of Denatured Fuel Grade Ethanol, and must have a Benzene level of 1.3 volume % or lower and have an Oxygen content of at least 1.7% but not more than 4.0% by wt.
- (10) Specification must be met before blending with denatured fuel ethanol.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 4D

REFORMULATED REGULAR GASOLINE BLENDSTOCK (RBOB)
FOR BLENDING WITH 10% DENATURED FUEL ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
NON-VOC-CONTROLLED REGION 1 COMPLEX MODEL PHASE II
HOUSTON-DALLAS AREA

All parameters apply after blending with denatured fuel ethanol unless noted

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS</u> (1)	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, D1298, D4052		Report (10)
Color			UNDYED
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1
Corrosion (Ag) 3 Hrs. @ 122°F	D4814		1
Gum, mg/100ml after washing	D381		4
Doctor	D4952		Negative (2)
or: Mercaptan Sulfur wt %	D3227		0.002
Sulfur, (ppmwt)	D2622, D5453, D7039		80
Benzene, wt. %	D3606		1.30
Aromatics (vol %)	D5769, D5599		50.0 (3)
Olefins (vol %)	D1319		25.0
Oxidation Stability - Minutes	D525	240	
Appearance @ 70°F			(4)
Oxygen, wt% Blended	D4815, D5599	1.7	4.0 (5)
Oxygen, wt% Neat		Report	(6, 10)
E200 (vol %)	D86	30.0	70.0
E300 (vol %)	D86	70.0	100.0
Odor		Nonoffensive	(7)

Octane:	RON:	D2699	Report
	MON:	D2700	82.0
	(R+M)/2 (AKI):		87.0 (9)
Volatility - Refer to Page			3-38
Distillation - Refer to Page			3-38
Reid Vapor Pressure -			Report (8)
Driveability Index (Origin) - Refer to Page			3-38
Additives: Gum Inhibitors, Metal Deactivators, Attached: Page			3-39

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

Explorer Pipeline

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

CODE 4D

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) Refer to test methods published in 40 CFR Chapter 1, Part 80.46.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See page 3-2 Paragraph 8.
- (5) Refer to test method published in 40 CFR, Part 80, Appendix E, Method 3.
- (6) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (7) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (8) For products blended to meet EPA or state imposed RVP requirements, test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirement.

- (9) a. This product must be blended with 10% by volume Denatured Fuel Grade Ethanol.
 - b. Federal RFG maximum and minimum testing requirement will apply to the final blends of this product.
 - c. This product, when blended with 10% volume percent of Denatured Fuel Grade Ethanol, and must have a Benzene level of 1.3 volume % or lower and have an Oxygen content of at least 1.7% but not more than 4.0% by wt.
- (10) Specification must be met before blending with denatured fuel ethanol.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 4X

REFORMULATED REGULAR GASOLINE BLENDSTOCK (RBOB)
FOR BLENDING WITH 10% DENATURED FUEL ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
NON-VOC-CONTROLLED COMPLEX MODEL PHASE II
CHICAGO AREA

All parameters apply after blending with denatured fuel ethanol unless noted

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS</u> (1)	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, D1298, D4052		Report (10)
Color			UNDYED
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1
Corrosion (Ag) 3 Hrs. @ 122°F	D4814		1
Gum, mg/100ml after washing	D381		4
Doctor	D4952		Negative (2)
or: Mercaptan Sulfur wt %	D3227		0.002
Sulfur, (ppmw)	D2622, D5453, D7039		80
Benzene, wt. %	D3606		1.30
Aromatics (vol %)	D5769, D5599		50.0 (3)
Olefins (vol %)	D1319		25.0
Oxidation Stability - Minutes	D525	240	
Appearance @ 70°F			(4)
Oxygen, wt% Blended	D4815, D5599	1.7	4.0 (5)
Oxygen, wt% Neat		Report	(6, 10)
E200 (vol %)	D86	30.0	70.0
E300 (vol %)	D86	70.0	100.0
Odor		Nonoffensive	(7)

Octane:	RON:	D2699	Report
	MON:	D2700	82.0
	(R+M)/2 (AKI):		87.0 (9)
Volatility - Refer to Page			3-38
Distillation - Refer to Page			3-38
Reid Vapor Pressure -			Report (8)
Driveability Index (Origin)- Refer to Page			3-38
Additives: Gum Inhibitors, Metal Deactivators, Attached: Page			3-39

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

Explorer Pipeline

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

CODE 4X

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) Refer to test methods published in 40 CFR Chapter 1, Part 80.46.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See page 3-2 Paragraph 8.
- (5) Refer to test method published in 40 CFR, Part 80, Appendix E, Method 3.
- (6) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (7) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (8) For products blended to meet EPA or state imposed RVP requirements, test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirement.

- (9) a. This product must be blended with 10% by volume Denatured Fuel Grade Ethanol.
 - b. Federal RFG maximum and minimum testing requirement will apply to the final blends of this product.
 - c. This product, when blended with 10% volume percent of Denatured Fuel Grade Ethanol, and must have a Benzene level of 1.3 volume % or lower and have an Oxygen content of at least 1.7% but not more than 4.0% by wt.
- (10) Specification must be met before blending with denatured fuel ethanol.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 4U

REFORMULATED REGULAR GASOLINE BLENDSTOCK (RBOB)
FOR BLENDING WITH 10.0% DENATURED FUEL ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
VOC-CONTROLLED REGION 2 COMPLEX MODEL PHASE II
CHICAGO AREA

All parameters apply after blending with denatured fuel ethanol unless noted

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS</u>		(1)
		<u>MINIMUM</u>	<u>MAXIMUM</u>	
Gravity, API @ 60°F	D287, D1298, D4052		Report	(10)
Color			UNDYED	
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1	
Corrosion (Ag) 3 Hrs. @ 122°F	D4814		1	
Gum, mg/100ml after washing	D381		4	
Doctor	D4952		Negative	(2)
or: Mercaptan Sulfur wt %	D3227		0.002	
Sulfur, (ppmw)	D2622, D5453, D7039		80	
Benzene, wt. %	D3606		1.30	
Aromatics (vol%)	D5769, D5599		50	(3)
Olefins (vol%)	D1319		25	
Oxidation Stability - Minutes	D525	240		
Appearance @ 70°F				(4)
Oxygen, wt% Blended	D4815, D5599	1.7	4.0	(5)
Oxygen, wt% Neat		Report		(6, 10)
E200 (vol%)	D86	30	70	
E300 (vol%)	D86	70	100	
Emission Performance Reduction (%)		25.4		
Odor		Nonoffensive		(7)
Driveability Index (Origin)			1250	

Octane:	RON:	D2699	Report	
	MON:	D2700	82.0	
	(R+M)/2 (AKI)		87.0	(9)

Volatility - Refer to Page			3-38	
Distillation - Refer to Page			3-38	
Reid Vapor Pressure –			Report	(8)
Additives: Gum Inhibitors, Metal Deactivators, Attached: Page			3-39	

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

Explorer Pipeline

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

CODE 4U

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) Refer to test methods published in 40 CFR Chapter 1, Part 80.46.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See Page 3-2 Paragraph 8.
- (5) Refer to test method published in 40 CFR, Part 80, Appendix E, Method 3.
- (6) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (7) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (8) For products blended to meet EPA or state imposed summer VOC requirements, test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirement.

- (9) a. This product must be blended with 10% by volume Denatured Fuel Grade Ethanol.
 - b. Federal RFG maximum and minimum testing requirement will apply to the final blends of this product.
 - c. This product, when blended with 10% volume percent of Denatured Fuel Grade Ethanol, and must have a Benzene level of 1.3 volume % or lower and have an Oxygen content of at least 1.7% but not more than 4.0% by wt.
- (10) Specification must be met before blending with denatured fuel ethanol.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 4S

REFORMULATED REGULAR GASOLINE BLENDSTOCK (RBOB)
FOR BLENDING WITH 10.0% DENATURED FUEL ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
VOC-CONTROLLED REGION 1 COMPLEX MODEL PHASE II
ST. LOUIS AREA

All parameters apply after blending with denatured fuel ethanol unless noted

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS</u> (1)	
		<u>MINIMUM</u>	<u>MAXIMUM</u>
Gravity, API @ 60°F	D287, D1298, D4052		Report (10)
Color			UNDYED
Corrosion (Cu) 3 Hrs. @ 122°F	D130		1
Corrosion (Ag) 3 Hrs. @ 122°F	D4814		1
Gum, mg/100ml after washing	D381		4
Doctor	D4952		Negative (2)
or: Mercaptan Sulfur wt %	D3227		0.002
Sulfur, (ppmwt)	D2622, D5453, D7039		80
Benzene, wt. %	D3606		1.30
Aromatics (vol%)	D5769, D5599		50 (3)
Olefins (vol%)	D1319		25
Oxidation Stability - Minutes	D525	240	
Appearance @ 70°F			(4)
Oxygen, wt% Blended	D4815, D5599	1.7	4.0 (5)
Oxygen, wt% Neat		Report	(6, 10)
E200 (vol%)	D86	30	70
E300 (vol%)	D86	70	100
Emission Performance Reduction (%)		27.0	
Odor		Nonoffensive	(7)
Driveability Index (Origin)			1250

Octane:	RON: D2699	Report	
	MON: D2700	82.0	
	(R+M)/2 (AKI):	87.0	(9)
<hr/>			
Volatility - Refer to Page			3-38
Distillation - Refer to Page			3-38
Reid Vapor Pressure		Report	(8)
Additives: Gum Inhibitors, Metal Deactivators	Page		3-39

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

Explorer Pipeline

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

CODE 4S

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) Refer to test method published in 40 CFR Chapter 1, Part 80.46. Alternative aromatics and oxygenates test methods, ASTM D1319 and ASTM D 4815, may be used in accordance with state and federal regulations.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See Page 3-2 Paragraph 8.
- (5) Refer to test method published in 40 CFR, Part 80, Appendix E, Method 3.
- (6) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (7) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (8) For products blended to meet EPA or state imposed summer VOC requirements, test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirement.

- (9) a. This product must be blended with 10% by volume Denatured Fuel Grade Ethanol.
 - b. Federal RFG maximum and minimum testing requirement will apply to the final blends of this product.
 - c. This product, when blended with 10% volume percent of Denatured Fuel Grade Ethanol, and must have a Benzene level of 1.3 volume % or lower and have an Oxygen content of at least 1.7% but not more than 4.0% by wt.
- (10) Specification must be met before blending with denatured fuel ethanol.

Explorer Pipeline

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

FUNGIBLE SPECIFICATIONS

CODE 4T

REFORMULATED REGULAR GASOLINE BLENDSTOCK (RBOB)
FOR BLENDING WITH 10.0% DENATURED FUEL ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
NON-VOC-CONTROLLED COMPLEX MODEL PHASE II
ST. LOUIS AREA

All parameters apply after blending with denatured fuel ethanol unless noted

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS (1)</u>		
		<u>MINIMUM</u>	<u>MAXIMUM</u>	
Gravity, API @ 60°F	D287, D1298, D4052			Report (10)
Color				UNDYED
Corrosion (Cu) 3 Hrs. @ 122°F	D130			1
Corrosion (Ag) 3 Hrs. @ 122°F	D4814			1
Gum, mg/100ml after washing	D381			4
Doctor	D4952			Negative (2)
or: Mercaptan Sulfur wt %	D3227			0.002
Sulfur, (ppmw)	D2622, D5453, D7039			80
Benzene, wt. %	D3606			1.30
Aromatics (vol %)	D5769, D5599			50.0 (3)
Olefins (vol %)	D1319			25.0
Oxidation Stability - Minutes	D525	240		
Appearance @ 70°F				(4)
Oxygen, wt% Blended	D4815, D5599	1.7	4.0	(5)
Oxygen, wt% Neat		Report		(6, 10)
E200 (vol %)	D86	30.0	70.0	
E300 (vol %)	D86	70.0	100.0	
Odor		Nonoffensive		(7)

Octane:	RON:	D2699	Report	
	MON:	D2700	82.0	
	(R+M)/2 (AKI):		87.0	(9)
<hr/>				
Volatility - Refer to Page			3-38	
Distillation - Refer to Page			3-38	
Reid Vapor Pressure -			Report	(8)
Driveability Index (Origin)- Refer to Page			3-38	
Additives: Gum Inhibitors, Metal Deactivators, Attached: Page			3-39	

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

Explorer Pipeline

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

CODE 4T

- (1) Deliveries may be higher or lower by normal testing and handling tolerance. All tests should be the most current version or the version specified by federal, state, or local government.
- (2) Mercaptan Sulfur waived if fuel is negative by doctor test.
- (3) Refer to test methods published in 40 CFR Chapter 1, Part 80.46.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See page 3-2 Paragraph 8.
- (5) Refer to test method published in 40 CFR, Part 80, Appendix E, Method 3.
- (6) This product must be oxygenate free. Non hydrocarbon blending components are not allowed.
- (7) Any Gasoline exhibiting an offensive odor and/or poses a personal health hazard and/or contains more than 0.30 wt. % dicyclopentadiene will not be accepted for shipment.
- (8) For products blended to meet EPA or state imposed RVP requirements, test must be performed for RVP in accordance with procedure described in 40 CFR, PART 80, Appendix E, Method 3.

Vapor pressure requirements at destination are based on ASTM Standard D4814 EPA and/or State standards. Due to intransit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer intransit time and federal and state volatility laws applicable within the designated distribution areas.

Shipper terminals should monitor inventories to ensure that motor gasolines comply with federal and state volatility requirement.

- (9) a. This product must be blended with 10% by volume Denatured Fuel Grade Ethanol.
 - b. Federal RFG maximum and minimum testing requirement will apply to the final blends of this product.
 - c. This product, when blended with 10% volume percent of Denatured Fuel Grade Ethanol, and must have a Benzene level of 1.3 volume % or lower and have an Oxygen content of at least 1.7% but not more than 4.0% by wt.
- (10) Specification must be met before blending with denatured fuel ethanol.

Explorer Pipeline

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

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Explorer Pipeline

DISTILLATION AND VOLATILITY REQUIREMENTS AFTER BLENDING WITH 10% ETHANOL

	<u>CLASS</u>					
	<u>AA</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>
Distillation: ASTM D86						
10% Evap. °F Max	158	158	149	140	131	122
50% Evap. °F Min	150	150	150	150	150	150
50% Evap. °F Max	250	250	245	240	235	230
90% Evap. °F Max	374	374	374	365	365	365
End Point, °F Max	430	430	430	430	430	430
Residue, % Max	2	2	2	2	2	2
Vapor Pressure (VP)	7.8	9.0	10.0	11.5	13.5	15.0
Does not include the 1 Lb. waiver where states allow.						
Lbs. Max* (see attached schedule) (Reg.1)(Reg.2)						
Driveability Index, °F Max	1250	1250	1240	1230	1220	1200

**V/L @ 20, Min. Temp. degree F ASTM D5188

The vapor/liquid ratio of 20:1 may be calculated by the following equation:

Where: T V/L @ 20:1 = Temperature at a V/L of 20:1

Neat Fuel T V/L @ 20:1 = 114.6 - 4.1 (VP) + 0.20 T10 + 0.17 T50

Blended T V/L=0.782(TV/L20 from first equation)+26.00 (ASTM X2.28)

VP - Vapor Pressure psi

T10 = Temperature @ 10% evaporated T50 = Temperature @ 50% evaporated

Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
129	122	116	116	105	95

Texas Specifications Per NIST Handbook 130 section 2

Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
129	122	116	107	102	95

* For products blended to meet EPA or state imposed volatility requirements, Reid Vapor Pressure (RVP) tests must be performed in accordance with methods published in 40 CFR Part 80 1476-14490 Vol. 58 No. 50

** D5188 is the referee test method.

Explorer Pipeline

DISTILLATION AND VOLATILITY REQUIREMENTS AFTER BLENDING WITH 10% ETHANOL

Explorer Pipeline

ADDITIVE REQUIREMENTS FOR GASOLINE SPECIFICATIONS

I. Gum Inhibitors and Metal Deactivators

Shipments of gasolines may, but are not required to contain the following:

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

II. Corrosion Inhibitors

All products shipped on Explorer Pipeline, with the exception of all grades of Aviation Kerosene, are required to meet a minimum level of corrosion protection. The concentration of inhibitor dosage will be controlled to meet a minimum rating of B+ (less than 5% of test surface rusted) before blending with denatured fuel ethanol (where applicable) as determined by NACE Standard TMO172, Test Method-Antirust Properties of Petroleum Products Pipeline Cargoes.

Unleaded Gasolines shipped on Explorer Pipeline may contain only the following corrosion inhibitors:

Afton	Hi TEC	Nalco	5403, 5405,
Aqua	11CH7		EC5624A,
Corexi	526	SPEC-	8Q22, 8Q100,
Ethyl	58		8Q102,
Innospe	DCI-4A, DCI-6A, DCI-11, DCI-30.	Tola	245,249,351,3232
Lubrizol	8014,	Uniche	7500,7501,751
Mid	MCC	UO	Unicor,
Mobi	C-		Unicor

Explorer Pipeline

ADDITIVE REQUIREMENTS FOR GASOLINE SPECIFICATIONS

- III. The use of Port Fuel Injections (PFI) and intake valve detergent additives is prohibited.
- IV. No additives or corrosion inhibitors containing phosphorus may be used in the gasoline. Phosphorous, as measured by ASTM D3231 shall not exceed 0.004 gms/gal.
- V. All Explorer Fungible Gasolines are “Bases-Gasoline and are not for sale to the ultimate consumer.”

Explorer Pipeline

JET FUEL A

FUNGIBLE SPECIFICATIONS		CODES	51 54	
<u>FUNGIBLE AVIATION TURBINE FUEL</u>				
<u>JET A</u>				
<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS (1)</u>		<u>NOTES</u>
		<u>MINIMUM</u>	<u>MAXIMUM</u>	
<u>General Properties</u>				
Gravity, °API @ 60°F	D287, D1298, D4052	37	51	
Net Heat of Combustion, BTU/Pound	D3338, D4529, D4809	18,400		a.
Corrosion, Copper Strip, 2 Hrs. @ 212°F	D130		No. 1	
MSEP (WSIM) Origin Destination	D3948	85 75		
Electrical Conductivity	D2624		10	Report
Particulate contaminant Mg/Gal	D2276			Report
Water Reaction: Interface Rating	D1094		1b	
Color, Saybolt (Origin)	D156, D6045	20		
Color, Saybolt (Destination)	D156, D6045	18		
Appearance				b.
Additives				c. & d.
<u>Low Temperature Properties</u>				
Freezing Point, °C	D2386, D5972		-40.0	
Viscosity, cSt 104°F (40°C)	D445		1.9	
Viscosity, cSt -4°F (-20°C)	D445		8.0	
<u>Volatility</u>				
Flash Point, °F Origin Destination	D56, D3828	108 100		e.
Distillation, Temp., C °(F)	D86			h.
10% Recovered			205 (400)	
50% Recovered			Report	
90% Recovered			288 (550)	
Final Boiling Point, °F			300 (572)	
Distillation Residue, Vol. %			1.5	
Distillation Loss, Vol. %			1.5	

Explorer Pipeline

JET FUEL A

		CODES	51	
			54	
<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS (1)</u>		
		<u>MINIMUM</u>	<u>MAXIMUM</u>	<u>NOTES</u>
or Simulated Distillation C (F)	D2887			h.
<u>10% recovery</u>			185 (365)	
<u>50% recovery</u>		report		
<u>90% recovery</u>			304 (579)	
<u>End Point</u>			340 (644)	
<u>Stability</u>				
Existent Gum, mg/100 ml	D381		7.0	
Thermal Stability:	D3241			f.
Filter Pressure Drop, mm Hg			25	
Tube Deposit Less Than			Code 3	
		No Peacock or Abnormal Color Deposits		
<u>Composition Properties</u>				
Sulfur, Total wt%	D7039 or D5453		0.30	
	D2622 or D4294			
Doctor Test	D4952		Negative	
Sulfur, Mercaptan	D3227		0.003	g.
Aromatics, Vol. %	D1319		25	
Acidity, Total Max, mg KOH/g	D3242		0.1	
<u>Combustion Properties</u>				
One of the following requirements shall be met:				
(1) Luminometer No.	D1740	45		
(2) Smoke Point, mm	D1322	25		
(3) Smoke Point, mm	D1322	18		
AND				
Naphthalenes, Vol. %	D1840		3.0	

Explorer Pipeline

JET FUEL A

CODES 51
54

- (1) Deliveries may be higher or lower by normal testing and handling tolerance.
- (a.) For all grades use either Eq 1 or Table 1 in test method D 4529 or Eq 2 in Test Method D 3338. Test Method D 4809 may be used as an alternative. In case of dispute, Test Method D4809 shall be used.
- (b.) Product shall be clear and bright and free of suspended water and sediment. See Page 3-2 paragraph 8.
- (c.) No additives other than anti-oxidants and metal deactivators as set forth in ASTM D1655 (latest edition) Section 5.2.1 and 5.2.2 shall be permitted. The use of these additives requires advance approval from Explorer Pipeline prior to delivery into the pipeline. The use of these additives must be clearly stated on the C of A. Explorer Pipeline reserves the right to refuse shipment of product containing these additives. The use of any other additives is prohibited.
- (d.) No rust inhibitor shall be injected into this product unless approved by all shippers.
- (e.) Method D56 is the preferred method. In case of a dispute D56 will apply.
- (f.) **At origin, Thermal Stability test (JFTOT) shall be conducted for 2.5 hours at a control temperature of 275° C. At destination, test shall be conducted for 2.5 hours at a control temperature of 260°C.** Tube deposits shall always be reported by Visual Method: a rating by the Tube Deposit Rating (TDR) optical density method is desirable, but not mandatory.
- (g.) The Mercaptan Sulfur determination may be waived if the fuel is considered sweet by the doctor test described in 4.2 of ASTM D235.
- (h.) Physical or Simulated distillation can be used. ASTM D 86 will be the referee test method.

Explorer Pipeline

FUNGIBLE SPECIFICATIONS

CODES 75
7V

ULTRA LOW SULFUR FUEL OIL FUNGIBLE ULTRA LOW SULFUR FUEL OIL

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS (1)</u>		
		<u>MINIMUM</u>	<u>MAXIMUM</u>	<u>NOTES</u>
Gravity, API	D287, D4052	30		
Flash Point, °F				
Pensky-Marten	D93	130		
Distillation C (F)	D86			
50%		Report		
90%		282 (540)	338 (640)	
End Point			366 (690)	
Or Simulated Distillation C (F)	D2887			
50% recovered			Report	
90% recovered		300 (572)	356 (673)	
End Point			421 (790)	
Color, ASTM	D1500, D6045		2.5	
Color, Visual		Undyed		
Viscosity, cSt @ 104°F (40°C)	D445	1.9	4.1	
Pour Point, °F	D97, D5949, D5950, D5985		See Page 3-50	
Cloud Point, °F	D2500, D5771 D5772, D5773		See Page 3-50	
Corrosion, 3 Hrs. @ 122 °F	D130		1	
Total Sulfur, % by wt.	D4294, D2622, D5453, D7039			
28" Origin			0.0010	(2)
Lake Charles, Port Neches			0.0010	(2)
Cetane Index	D976	40		
Cetane Index	D4737			
	Procedure A	40.0		(3)
Cetane Number	D613, D6890	40.0		
Ash, % by wt.	D482		0.01	
Carbon Residue: Ramsbottom				
on 10% Bottom	D524		0.35	
Water & Sediment				(4)
Thermal Stability	D2274			
300°F Pad rating, DuPont scale			7	
Thermal stability Reflectance	D6468	(W) 75		
Reading Min.		(Y) 82		
Oxidation Stability	D2274			
mg/100 ml			2.5	
Haze Rating @ 77°F (25°C)	D4176			
	Procedure 2		2	

Additives: Corrosion Inhibitors: Page 3-51

Explorer Pipeline

CODES 75
7V

NOTES:

- (1) Ultra Low Sulfur Diesel Fuel to meet EPA Standards.
- (2) Per 40 CFR 80.580 (b) (3) any method certified under 80.585 may be used. Explorer will accept any EPA qualified method.
- (3) Aromatics by D1319 of 35 vol% max. may be used as an alternative.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See Page 3-2 Paragraph 8.

Explorer Pipeline

FUNGIBLE SPECIFICATIONS ULTRA LOW SULFUR FUEL OIL CODE 77

FUNGIBLE ULTRA LOW SULFUR FUEL OIL BLENDSTOCK FOR BLENDING TO MEET TEXAS L.E.D. SPECIFICATIONS

<u>PRODUCT PROPERTY</u>	<u>ASTM TEST METHOD</u>	<u>EXPLORER ORIGIN SPECIFICATIONS (1)</u>		
		<u>MINIMUM</u>	<u>MAXIMUM</u>	<u>NOTES</u>
Gravity, API	D287, D4052, D1298		30	
Flash Point, °F				
Pensky-Marten	D93	130		
Distillation C (F)	D86			
50%		Report		
90%		282 (540)	338 (640)	
End Point			366 (690)	
Or Simulated Distillation C (F)	D2887			
50% recovered			Report	
90% recovered		300 (572)	356 (673)	
End Point			421 (790)	
Color, ASTM	D1500, D6045		2.5	
Color, Visual		Undyed		
Viscosity, cSt @ 104°F (40°C)	D445	1.9	4.1	
Pour Point, °F	D97, D5949, D5950, D5985		See Page 3-50	
Cloud Point, °F	D2500, D5771, D5772, D5773		See Page 3-50	
Corrosion, 3 Hrs. @ 122 °F	D130		1	
Total Sulfur, % by wt.	D4294, D2622, D5453, D7039			
28" Origin			0.0010	(2)
Lake Charles, Port Neches			0.0010	(2)
Cetane Index	D976	40		
Cetane Index	D4737			
	Procedure A	40.0		(3)
Cetane Number	D613, D6890	40.0		
Ash, % by wt.	D482		0.01	
Carbon Residue: Ramsbottom				
on 10% Bottom	D524		0.35	
Water & Sediment				(4)
Thermal Stability	D2274			
300°F Pad rating,				
DuPont scale			7	
Thermal stability Reflectance	D6468	(W) 75		
Reading Min.		(Y) 82		
Oxidation Stability	D2274			
mg/100 ml			2.5	
Haze Rating @ 77°F (25°C)	D4176			
	Procedure 2		2	

Additives: Corrosion Inhibitors: Page 3-51

Explorer Pipeline

CODE 77

NOTES:

- (1) Ultra Low Sulfur Diesel Fuel to meet EPA Standards.
- (2) Per 40 CFR 80.580 (b) (3) any method certified under 80.585 may be used. Explorer will accept any EPA qualified method.
- (3) Aromatics by D1319 of 35 vol% max. may be used as an alternative
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See Page 3-2 Paragraph 8

Explorer Pipeline

FUNGIBLE SPECIFICATIONS

CODES: 75, 77, 7V

SPECIFICATIONS FOR POUR POINT & CLOUD POINT

<u>MONTH</u>	<u>CYCLE</u>	<u>POUR PT. °F MAX.</u>	<u>CLOUD PT. °F MAX.</u>
Jan.	01, 02, 03	0	+15
Feb.	04, 05, 06	0	+15
Mar.	07, 08, 09	0	+15
Apr.	10, 11, 12	+10	+20
May	13, 14, 15	+10	+20
Jun.	16, 17, 18	+10	+20
Jul.	19, 20, 21	+10	+20
Aug.	22, 23, 24	+10	+20
Sep.	25, 26, 27	0	+15
Oct.	28, 29, 30	0	+15
Nov.	31, 32, 33	0	+15
Dec.	34, 35, 36	0	+15

Explorer Pipeline

CODES 74, 75, 77, 7V

ADDITIVE REQUIREMENTS FOR FUEL OIL DISTILLATE SPECIFICATIONS

I. Corrosion Inhibitors

All products shipped on Explorer Pipeline, with the exception of all grades of Aviation Kerosene, are required to meet a minimum level of corrosion protection. 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 Standards TMO172, Test Method-Antirust Properties of Petroleum Products Pipeline Cargoes.

Fuel Oil Distillate shipped on Explorer Pipeline may contain only the following corrosion inhibitors:

Tolad	4410	Lubrizol	8017	SPEC-AID	8Q106
Tolad	4415	Mobil	C-605	SPEC-AID	8Q109
Corexit	5267	Nalco	5403	SPEC-AID	8Q110
Dupont	DCI-4A	Nalco	5405	SPEC-AID	8Q22
Dupont	DCI-6	Nalco	5406	Tolad	245
Dupont	DCI-6A	Nalco	5400-A	Tolad	249
Dupont	DCI-11	Nalco	EC5414A	Unichem	7500
Dupont	DCI-17	Nalco	EC5415A	Unichem	7501
Dupont	AFA-1	Nalco	EC5416A		
Dupont	DMA-4	SPEC-AID	8Q100	Unichem	7510
Ethyl HiTec	580	SPEC-AID	8Q101	UOP Unisor	
Lubrizol	8014	SPEC-AID	8Q102	UOP Unisor J	
MidContinental Chemical	MCC5001	SPEC-AID	8Q103	UOP Unisor PL	

II. Static Dissipater Additives

Fuel Oil shipments may, but are not required to, contain static dissipater additive. The only approved SDA for use on Explorer Pipeline is "Innospec Stadis 450". SDA is prohibited from all Kerosene grades. The origin maximum concentration of Stadis 450 is 0.75 mg/l, and the origin maximum conductivity allowed is 250 pS/m at 21 degrees C (70 F) by ASTM D2624.