

SECTION 3 – FUNGIBLE PRODUCT SPECIFICATIONS

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

3.0 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.

3.1 GENERAL

3.1.1 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.

3.1.2 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.

3.1.3 All product shipped must be an EPA certified fuel unless it is specifically designated as a Blend Stock, Specialty Grade or Transmix.

3.1.4 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.

3.1.5 Any tests performed by Explorer are for Explorer's information and shall in no way relieve Shipper of the necessity for compliance with specifications.

3.1.6 If any of the test data obtained in the examination of scheduled shipments are questionable, a recheck will be made.

3.1.7 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 may be moved as segregated batches and the Shipper will be so advised.

- 3.1.8 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.
- 3.1.9 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. Distillates may not exceed 250 ppm of water as measured by D-6304. Gasoline may not exceed 250 ppm of water as measured by D-6304. Jet Fuel may not exceed 150 ppm of water as measured by D-6304. Explorer may require the shipper to remove the water received, and/or invoice the shipper for water disposal and associated costs.
- 3.1.10 Heavy metals are not allowed to be present.
- 3.1.11 Shipper will perform quarterly oversight testing to ensure that levels of phosphorous do not exceed allowable limits. Phosphorous, grams /gal ASTM D3231 max. 0.004. (1ppm)
- 3.1.12 Gasoline grades may not contain oxygenates, such as ethers and alcohols. The use of any non-hydrocarbon blending component is prohibited. Origin maximum for MTBE is .25 vol % before blending.
- 3.1.13 Biodiesel is not allowed to be present at origin.
- 3.1.14 Upon reasonable request by Shipper in writing, delivery test results may be obtained by Explorer, and following receipt of such test results Explorer will evaluate following ASTM D3244 to determine conformance with Explorer specifications. Such determination will be at the discretion of Explorer.

3.2 FUNGIBLE SPECIFICATIONS

CODE 1B

DILUENT

This product does not meet the requirements for gasoline.

| PRODUCT PROPERTY | ASTM TEST METHOD | SPECIFICATIONS | | ADDL SPECS |
|--------------------------------|---------------------|----------------|---------|-------------|
| | | MINIMUM | MAXIMUM | |
| Gravity, API @ 60°F | D287, D1298, D4052 | 51 | 90 | (1) (4) |
| Density Kg/m ³ | D4052 | 640 | 755 | (1) (4) |
| Color | | | UNDYED | (1) (4) |
| BS&W Vol% | D95 | | 0.5 | (1) (4) |
| Total Suspended Solids mg/l | D4807 | | 10 | (1) (4) |
| Corrosion (Cu) 3 Hrs. @ 122°F | D130 | 1a | 1 | (1) (4) |
| Corrosion (Ag) 3 Hrs. @ 122°F | D4814 | 0 | 1 | (1) (4) |
| H ₂ S Liquid wt.ppm | D5623 | | 10 | (1) (4) |
| Doctor or: | D4952 | Negative | | (1) (4) |
| Mercaptan Sulfur wt.ppm | D5623 | | 175 | (1) (4) |
| C1, C2, C3 | | | | (1) (4) |
| Sulfur, (wt.ppm) | D2622, D5453, D7039 | | 350 | (1) (4) |
| Gum, mg/100ml after washing | D381 | | 4 | (1) (4) |
| Gum, mg/100ml unwashed | D381 | Report | | (1) (4) |
| Benzene, vol. % | D3606, D4053 | | 1.6 | (1) (4) |
| Oxidation Stability - Minutes | D525 | 240 | | (1) (4) |
| Appearance @ 70°F | | | | (1) (3) (4) |
| Odor Nonoffensive | | | | (1) (4) (5) |
| Reid Vapor Pressure psi | D5191 | | 14.94 | (1) (4) |
| Saybolt Color | D156 | +20 | | (1) (4) |
| Olefins Vol % | D5443 | | .51 | (1) (4) |
| Oxygenates wt.ppm | D6729 D4815 | | 100 | (1) (4) |
| Paraffins Vol % | D5443 | | 90 | (1) (4) |
| Naphthenes Vol % | D5443 | Report | | (1) (4) |
| Aromatics Vol % | D5443 | 2 | | (1) (4) |
| Organic Chlorides wt.ppm | D4929 | | <1.0 | (1) (4) |
| Isobutane Vol % | D6730 | | 0.70 | (1) (4) |
| n-Butane Vol % | D6730 | | 03.0 | (1) (4) |
| Extract water pH | D2110 | Report | | (1) (4) |
| RON: | D2699 | Report | | (1) (4) |
| MON: | D2700 | Report | | (1) (4) |
| (R+M)/2 (AKI): | Octane | 60 | | (1) (4) |

ADDITIONAL SPECIFICATIONS:

- (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 paragraph 3.1.9.
- (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.

NOTES:

- 1B shipments may not contain any additives.

**PREMIUM CONVENTIONAL REGULAR GASOLINE BLENDSTOCK (PCBOB)
INTENDED FOR OXYGENATE BLENDING WITH BETWEEN 9 & 10%
ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
SUMMER CODES: 31, 32, 33⁷
WINTER CODES: 34, 35, 36⁸**

The following parameters apply before blending with denatured fuel ethanol unless noted:

| PRODUCT PROPERTY | ASTM TEST METHOD | SPECIFICATIONS | | ADDL SPECS |
|-------------------------------|---------------------|----------------|----------|------------|
| | | MINIMUM | MAXIMUM | |
| Gravity, API @ 60°F | D287, D1298, D4052 | | Report | (1) |
| Color | | | Undyed | (1) |
| Corrosion (Cu) 3 Hrs. @ 122°F | D130 | | 1 | (1) |
| Corrosion (Ag) 3 Hrs. @ 122°F | D7671 | | 1 | (1) |
| [N] Benzene, vol. % | [N] D3606 | | [N] 3.8 | [N] (1) |
| Gum, mg/100ml after washing | D381 | | 4 | (1) |
| Gum, mg/100ml unwashed | D381 | | Report | (1) |
| Distillation | D86 | | Report | (1) |
| Doctor | D4952 | | Negative | (1) (2) |
| or: Mercaptan Sulfur wt. % | D3227 | | 0.002 | (1) |
| Sulfur wt. (ppm wt.) | D2622, D5453, D7039 | | 80 | (1) |
| Oxidation Stability - Minutes | D525 | 240 | | (1) |
| Appearance @ 70°F | | | | (1) (3) |
| Oxygen Content, wt. % | D4815, D5599 | | 0.05 | (1) (4) |
| Odor | Nonoffensive | | | (1) (5) |

The following parameters apply after blending with denatured fuel ethanol:

| PRODUCT PROPERTY | ASTM TEST METHOD | SPECIFICATIONS | | ADDL SPECS |
|----------------------|---------------------|----------------|---------|------------|
| | | MINIMUM | MAXIMUM | |
| Sulfur wt. (ppm wt.) | D2622, D5453, D7039 | | 80 | (1) |
| [C] Benzene, vol. % | [C] D3606 | | [C] 3.8 | [C] (4) |
| RON: | D2699 | Report | | (1) |
| MON: | D2700 | Report | | (1) |
| (R+M)/2 (AKI): | Octane | 93.0 | | (1) |

| | Page # or Doc Name |
|--|-------------------------------|
| Volatility - Refer to Section 3 | 3-13 |
| Distillation - Refer to Section 3 | 3-13 |
| Drivability Index (Origin) – See “Documents & Forms” on Carrier’s website: https://www.expl.com/Pipeline/Shipping | RVP – Drive Index |
| Reid Vapor Pressure – See “Documents & Forms” on Carrier’s website: https://www.expl.com/Pipeline/Shipping | RVP – Vapor Pressure Schedule |
| Additives: Gum Inhibitors, Metal Deactivators | 3-15 |

ADDITIONAL SPECIFICATIONS:

- (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. See paragraph 3.1.9.
- (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 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 in-transit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations. The Reid Vapor Pressure Schedule can be found at Carrier's website www.expl.com/pipeline/shipping.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer in-transit 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

- (7) Summer CBOB - Any product with an RVP of 7.8 psi or 9.0 psi CBOB does not meet the requirements for summer reformulated or conventional gasoline.
- (8) Winter CBOB - This product does not meet the requirements for summer reformulated or conventional gasoline

NOTES:

- In accordance with 40 CFR 1090.1010(a), gasoline will be accepted when designated as E0 or E10 for oxygenate with ethanol as described by 40 CFR 1090.1110(c)(2). In accordance with 40 CFR 1090.1110(a), gasoline will be designated upon receipt as Winter CBOB or Summer CBOB (7.8 psi, 9.0 psi, or SIP-controlled) based on the RVP of the base gasoline.
- All gasoline distributed will be designated as E10 described by 40 CFR 1090.1110(c)(2).
- This product is non-additized gasoline.

**PREMIUM REFORMULATED GASOLINE BLENDSTOCK (PRBOB)
INTENDED FOR OXYGENATE BLENDING
WITH BETWEEN 9 & 10% ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
SUMMER CODES: 3C, 3S, 3U⁹
WINTER CODES: 3D, 3T, 3X¹⁰**

The following parameters apply before blending with denatured fuel ethanol:

| PRODUCT PROPERTY | ASTM TEST METHOD | SPECIFICATIONS | | ADDL SPECS |
|-------------------------------|---------------------|----------------|----------|------------|
| | | MINIMUM | MAXIMUM | |
| Gravity, API @ 60°F | D287, D1298, D4052 | | Report | (1) |
| Color | | | Undyed | (1) |
| Corrosion (Cu) 3 Hrs. @ 122°F | D130 | | 1 | (1) |
| Corrosion (Ag) 3 Hrs. @ 122°F | D7671 | | 1 | (1) |
| Gum, mg/100ml after washing | D381 | | 4 | (1) |
| Gum, mg/100ml unwashed | D381 | | Report | (1) |
| Doctor | D4952 | | Negative | (1) (2) |
| or: Mercaptan Sulfur wt. % | D3227 | | 0.002 | (1) |
| Sulfur wt. (ppm wt.) | D2622, D5453, D7039 | | 80 | (1) |
| Oxidation Stability - Minutes | D525 | 240 | | (1) |
| Appearance @ 70°F | | | | (1) (3) |
| Oxygen Content, wt. % | D4815, D5599 | | 0.05 | (1) (4) |
| Odor | Nonoffensive | | | (1) (5) |

The following parameters apply after blending with denatured fuel ethanol:

| PRODUCT PROPERTY | ASTM TEST METHOD | SPECIFICATIONS | | ADDL SPECS |
|----------------------|---------------------|----------------|-------------|-------------|
| | | MINIMUM | MAXIMUM | |
| Sulfur wt. (ppm wt.) | D2622, D5453, D7039 | | 80 | (1) |
| Benzene, vol. % | D3606 | | [W] 4.3 3.8 | (1) |
| [C] Oxygen, wt. % | [C] D4815, D5599 | [C] 4.7 | [C] 4.0 | [C] (1) (7) |
| RON: | D2699 | Report | | (1) |
| MON: | D2700 | Report | | (1) |
| (R+M)/2 (AKI): | Octane | 93.0 | | (1) (8) |

| | Page # or Doc Name |
|---|--------------------------------------|
| Volatility - Refer to Section 3 | 3-13 |
| Distillation - Refer to Section 3 | 3-13 |
| Drivability Index (Origin) – See “Documents & Forms” on Carrier’s website: https://www.expl.com/Pipeline/Shipping | <i>RVP – Drive Index</i> |
| Reid Vapor Pressure – See “Documents & Forms” on Carrier’s website: https://www.expl.com/Pipeline/Shipping | <i>RVP – Vapor Pressure Schedule</i> |
| Additives: Gum Inhibitors, Metal Deactivators | 3-15 |

NOTE: This PBOB may not be combined with any other PBOB except PBOB having the same requirement for oxygenate type and amount. “Base Gasoline” not for sale to the ultimate consumer.

ADDITIONAL SPECIFICATIONS:

- (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 paragraph 3.1.9.
- (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
- (7) Refer to test method published in 40 CFR Part 80, Appendix E, Method 3.
- (8) This product must be blended with 10% by volume Denatured Fuel Grade Ethanol.

Federal RFG maximum and minimum testing requirement will apply to the final blends of this product.

This product, when blended with 10% volume percent of Denatured Fuel Grade Ethanol and must have a Benzene level of [W] ~~4.3~~ 3.8 volume % or lower.

- (9) Summer RBOB - Any RBOB with an RVP of 7.4 psi with 10% ethanol does meet the requirements for summer reformulated gasoline.
- (10) Winter RBOB - This product does not meet the requirements for summer reformulated or conventional gasoline

NOTES:

- In accordance with 40 CFR 1090.1010(a), gasoline will be accepted when designated as E0 or E10 for oxygenate with ethanol as described by 40 CFR 1090.1110(c)(2). In accordance with 40 CFR 1090.1010(a), gasoline will be designated upon receipt as Winter RBOB or Summer RBOB based on the RVP of the base gasoline.
- All gasoline distributed will be designated as E10 described by 40 CFR 1090.1110(c)(2).
- Product shall meet the Reformulated Gasoline (RFG) standard of 1090.220.
- This product is non-additized gasoline.

**CONVENTIONAL REGULAR GASOLINE BLENDSTOCK (CBOB)
INTENDED FOR OXYGENATE BLENDING WITH BETWEEN 9 & 10%
ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
SUMMER CODES: 41, 42, 43⁷
WINTER CODES: 44, 45, 46⁸**

The following parameters apply before blending with denatured fuel ethanol unless noted:

| PRODUCT PROPERTY | ASTM TEST METHOD | SPECIFICATIONS | | ADDL SPECS |
|-------------------------------|---------------------|----------------|----------------|----------------|
| | | MINIMUM | MAXIMUM | |
| Gravity, API @ 60°F | D287, D1298, D4052 | | Report | (1) |
| Color | | | Undyed | (1) |
| Corrosion (Cu) 3 Hrs. @ 122°F | D130 | | 1 | (1) |
| Corrosion (Ag) 3 Hrs. @ 122°F | D7671 | | 1 | (1) |
| [N] Benzene, vol. % | [N] D3606 | | [N] 3.8 | [N] (1) |
| Gum, mg/100ml after washing | D381 | | 4 | (1) |
| Gum, mg/100ml unwashed | D381 | | Report | (1) |
| Distillation | D86 | | Report | (1) |
| Doctor | D4952 | | Negative | (1) (2) |
| or: Mercaptan Sulfur wt. % | D3227 | | 0.002 | (1) |
| Sulfur wt. (ppm wt.) | D2622, D5453, D7039 | | 80 | (1) |
| Oxidation Stability - Minutes | D525 | 240 | | (1) |
| Appearance @ 70°F | | | | (1) (3) |
| Oxygen Content, wt. % | D4815, D5599 | | 0.05 | (1) (4) |
| Odor | Nonoffensive | | | (1) (5) |

The following parameters apply after blending with denatured fuel ethanol:

| PRODUCT PROPERTY | ASTM TEST METHOD | SPECIFICATIONS | | ADDL SPECS |
|----------------------------|---------------------|----------------|----------------|----------------|
| | | MINIMUM | MAXIMUM | |
| Sulfur wt. (ppm wt.) | D2622, D5453, D7039 | | 80 | (1) |
| [C] Benzene, vol. % | [C] D3606 | | [C] 3.8 | [C] (1) |
| RON: | D2699 | Report | | (1) |
| MON: | D2700 | Report | | (1) |
| (R+M)/2 (AKI): | Octane | 87.0 | | (1) |

| | Page # or Doc Name |
|--|-------------------------------|
| Volatility - Refer to Section 3 | 3-13 |
| Distillation - Refer to Section 3 | 3-13 |
| Drivability Index (Origin) – See “Documents & Forms” on Carrier’s website: https://www.expl.com/Pipeline/Shipping | RVP – Drive Index |
| Reid Vapor Pressure – See “Documents & Forms” on Carrier’s website: https://www.expl.com/Pipeline/Shipping | RVP – Vapor Pressure Schedule |
| Additives: Gum Inhibitors, Metal Deactivators | 3-15 |

ADDITIONAL SPECIFICATIONS:

- (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. See paragraph 3.1.9.
- (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 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 in-transit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations. The Reid Vapor Pressure Schedule can be found at Carrier's website www.expl.com/pipeline/shipping.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer in-transit 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

- (7) Summer CBOB - Any product with an RVP of 7.8 psi or 9.0 psi CBOB does not meet the requirements for summer reformulated or conventional gasoline.
- (8) Winter CBOB - This product does not meet the requirements for summer reformulated or conventional gasoline

NOTES:

- In accordance with 40 CFR 1090.1010(a), gasoline will be accepted when designated as E0 or E10 for oxygenate with ethanol as described by 40 CFR 1090.1110(c)(2). In accordance with 40 CFR 1090.1110(a), gasoline will be designated upon receipt as Winter CBOB or Summer CBOB (7.8 psi, 9.0 psi, or SIP-controlled) based on the RVP of the base gasoline.
- All gasoline distributed will be designated as E10 described by 40 CFR 1090.1110(c)(2).
- This product is non-additized gasoline.

**REFORMULATED REGULAR GASOLINE BLENDSTOCK (RBOB)
INTENDED FOR OXYGENATE BLENDING WITH BETWEEN 9 & 10%
ETHANOL
(92% PURITY) AS DEFINED IN ASTM D4806
SUMMER CODES: 4C, 4S, 4U⁹
WINTER CODES: 4D, 4T, 4X¹⁰**

The following parameters apply before blending with denatured fuel ethanol:

| PRODUCT PROPERTY | ASTM TEST METHOD | SPECIFICATIONS | | ADDL SPECS |
|-------------------------------|--------------------|----------------|----------|------------|
| | | MINIMUM | MAXIMUM | |
| Gravity, API @ 60°F | D287, D1298, D4052 | | Report | (1) |
| Color | | | Undyed | (1) |
| Corrosion (Cu) 3 Hrs. @ 122°F | D130 | | 1 | (1) |
| Corrosion (Ag) 3 Hrs. @ 122°F | D7671 | | 1 | (1) |
| Gum, mg/100ml after washing | D381 | | 4 | (1) |
| Gum, mg/100ml unwashed | D381 | | Report | (1) |
| Doctor | D4952 | | Negative | (1) (2) |
| or: Mercaptan Sulfur wt. % | D3227 | | 0.002 | (1) |
| Oxidation Stability - Minutes | D525 | 240 | | (1) |
| Appearance @ 70°F | | | | (1) (3) |
| Oxygen Content, wt. % | D4815, D5599 | | 0.05 | (1) (4) |
| Odor | Nonoffensive | | | (1) (5) |

The following parameters apply after blending with denatured fuel ethanol:

| PRODUCT PROPERTY | ASTM TEST METHOD | SPECIFICATIONS | | ADDL SPECS |
|----------------------|---------------------|----------------|-------------|-------------|
| | | MINIMUM | MAXIMUM | |
| Sulfur wt. (ppm wt.) | D2622, D5453, D7039 | | 80 | (1) |
| Benzene, vol. % | D3606 | | [W] 4.3 3.8 | (1) |
| [C] Oxygen, wt. % | [C] D4815, D5599 | [C] 4.7 | [C] 4.0 | [C] (4) (7) |
| RON: | D2699 | Report | | (1) |
| MON: | D2700 | 82.0 | | (1) |
| (R+M)/2 (AKI): | Octane | 87.0 | | (1) (8) |

| | Page # or Doc Name |
|---|-------------------------------|
| Volatility - Refer to Section 3 | 3-13 |
| Distillation - Refer to Section 3 | 3-13 |
| Drivability Index (Origin) – See “Documents & Forms” on Carrier’s website: https://www.expl.com/Pipeline/Shipping | RVP – Drive Index |
| Reid Vapor Pressure – See “Documents & Forms” on Carrier’s website: https://www.expl.com/Pipeline/Shipping | RVP – Vapor Pressure Schedule |
| Additives: Gum Inhibitors, Metal Deactivators | 3-15 |

NOTE: This RBOB may not be combined with any other RBOB except RBOB having the same requirement for oxygenate type and amount. “Base Gasoline” not for sale to the ultimate consumer.

ADDITIONAL SPECIFICATIONS:

- (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 paragraph 3.1.9.
- (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
- (7) Refer to test method published in 40 CFR, Part 80, Appendix E, Method 3.
- (8) This product must be blended with 10% by volume Denatured Fuel Grade Ethanol.

Federal RFG maximum and minimum testing requirement will apply to the final blends of this product.

This product, when blended with 10% volume percent of Denatured Fuel Grade Ethanol, and must have a Benzene level of [W] ~~1.3-3.8~~ volume % or lower.

- (9) Summer RBOB - Any RBOB with an RVP of 7.4 psi with 10% ethanol does meet the requirements for summer reformulated gasoline.
- (10) Winter RBOB - This product does not meet the requirements for summer reformulated or conventional gasoline

NOTES:

- In accordance with 40 CFR 1090.1010(a), gasoline will be accepted when designated as E0 or E10 for oxygenate with ethanol as described by 40 CFR 1090.1110(c)(2). In accordance with 40 CFR 1090.1010(a), gasoline will be designated upon receipt as Winter RBOB or Summer RBOB based on the RVP of the gasoline.
- All gasoline distributed will be designated as E10 described by 40 CFR 1090.1110(c)(2).
- Product shall meet the Reformulated Gasoline (RFG) standard of 1090.220.
- This product is non-additized gasoline.

3.3 DISTILLATION AND VOLATILITY REQUIREMENTS AFTER BLENDING WITH 10% ETHANOL

| Distillation: ASTM D86 | CLASS | | | | | | |
|---------------------------|-----------|----------|----------|----------|----------|----------|----------|
| | <u>AA</u> | <u>A</u> | <u>A</u> | <u>B</u> | <u>C</u> | <u>D</u> | <u>E</u> |
| 10% Evap. °F Max | 158 | 158 | 158 | 149 | 140 | 131 | 122 |
| 50% Evap. °F Min | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 50% Evap. °F Max | 250 | 250 | 250 | 245 | 240 | 235 | 230 |
| 90% Evap. °F Max | 374 | 374 | 374 | 374 | 365 | 365 | 365 |
| End Point, °F Max | 430 | 430 | 430 | 430 | 430 | 430 | 430 |
| Residue, % Max | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| *Vapor Pressure (VP) Neat | 7.8 | REPORT | 9.0 | 10.0 | 11.5 | 13.5 | 15.0 |
| *Vapor Pressure | 8.8 | 7.4 | 10.0 | 11.0 | 12.5 | 14.5 | 15.5 |
| Drivability Index, °F Max | 1250 | 1250 | 1250 | 1240 | 1230 | 1220 | 1200 |

| **V/L @ 20, Min. Temp °F ASTM D5188 | | | | | |
|--|---------|---------|---------|---------|---------|
| Blended: | | | | | |
| 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.

- 3.4** 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 in-transit times for destinations, Explorer will publish Reid Vapor Pressure schedules by cycle number for origin locations. The Reid Vapor Pressure Schedule can be found at Carrier's website www.expl.com/pipeline/shipping.

The Reid Vapor Pressures published by cycle number are estimations based on Explorer in-transit 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.

3.5 ADDITIVES FOR GASOLINE

3.5.1 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'disalicydene-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-dimethyl-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

3.5.2 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 or D7548, 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 | Mid | MCC |
| Aqua | 11CH7 | Mobil | C- |
| Corexi | 526 | Nalco | 5403,5405,EC5624A |
| Ethyl | 58 | Spec-Aid | 8Q22,8Q1018Q123ULS |
| Innospec | DCI-4A, DCI6A,DCI-11,DCI30 | Tola | 245, 249, 351, 3232, 3232D |
| Lubrizol | 8014 | Uniche | 7500, 7501, 751 |
| | | UO | Unicor |

- 3.5.3 The use of Port Fuel Injections (PFI) and intake valve detergent additives is prohibited.
- 3.5.4 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.
- 3.5.5 All Explorer Fungible Gasolines are “Bases-Gasoline and are not for sale to the ultimate consumer.”

**FUNGIBLE AVIATION TURBINE FUEL
JET A**

| | | EXPLORER ORIGIN SPECIFICATIONS | | |
|---|----------------------------|--------------------------------|-----------|-------------|
| PRODUCT PROPERTY | ASTM TEST METHOD | MINIMUM | MAXIMUM | ADDL SPECS |
| General Properties | | | | |
| Gravity, °API @ 60°F | D287, D1298, D4052 | 37 | 51 | (1) |
| Net Heat of Combustion, BTU/Pound | D3338, D4529, D4809 | 18,400 | | (1) (2) |
| Corrosion, Copper Strip, 2 Hrs. @ 212°F | D130 | | No. 1 | (1) |
| MSEP (WSIM) Origin | D3948, D7224 | 85 | | (1) |
| Destination | | 75 | | (1) |
| Electrical Conductivity | D2624 | | 10 | (1) |
| Particulate contaminant Mg/Gal | D2276, D5452 | | Report | (1) |
| Water Reaction: | D1094 | | | (1) |
| Interface Rating | | | 1b | (1) |
| Color, Saybolt (Origin) | D156, D6045 | 20 | | (1) |
| Total Sulfur, ppm | D4294, D2622, D5453, D7039 | | 1500 | (1) |
| Color, Saybolt (Destination) | D156, D6045 | 18 | | (1) |
| Appearance | | | | (1) (3) |
| Additives | | | | (1) (4) (5) |
| Low Temperature Properties | | | | |
| Freezing Point, °C | D2386, D5972 | | -40.0 | (1) |
| Viscosity, cSt 104°F (40°C) | D445 D7042 | 1.0 | 1.9 | (1) |
| Viscosity, cSt -4°F (-20°C) | D445 D7042 | | 8.0 | (1) |
| Volatility | | | | |
| Flash Point, °F Origin | D56, D3828 | 108 | | (1) (6) |
| Destination | | 100 | | (1) |
| Distillation, Temp., C °(F) | D86 | | | (1) (9) |
| 10% Recovered | | | 205 (400) | (1) |
| 50% Recovered | | | Report | (1) |
| 90% Recovered | | | 288 (550) | (1) |
| Final Boiling Point, °F | | | 300 (572) | (1) |
| Distillation Residue, Vol. % | | | 1.5 | (1) |
| Distillation Loss, Vol. % | | | 1.5 | (1) |

| | | EXPLORER ORIGIN SPECIFICATIONS | | |
|---|----------------------------------|--------------------------------|----------|------------|
| PRODUCT PROPERTY | ASTM TEST METHOD | MINIMUM | MAXIMUM | ADDL SPECS |
| <u>Stability</u> | | | | |
| Existent Gum, mg/100 ml | D381 | | 7.0 | (1) |
| Thermal Stability at 275 origin | D3241 | | | (1) (7) |
| Filter Pressure Drop. mm Hg | | | 25 | (1) |
| Tube Deposit | VTR | | <3 | (1) |
| | ITR or ETR rating | | 85 | (1) |
| No Peacock or Abnormal Color Deposits | | | | |
| <u>Composition Properties</u> | | | | |
| Sulfur, Total wt.% | D7039 or D5453 D2622 or D4294 | | 0.150 | (1) |
| Doctor Test | D4952 | | Negative | (1) |
| Sulfur, Mercaptan | D3227 | | 0.003 | (1) |
| Aromatics, Vol. % | D1319 / D6379 | | 25/26.5 | (1) |
| Acidity, Total Max, mg KOH/g | D3242 | | 0.1 | (1) |
| Nitrogen ppm (m/m) | D4629 | | Report | (1) |
| <u>Combustion Properties</u> | | | | |
| One of the following requirements shall be met: | | | | |
| (1) Luminometer No. | D1740 | 45 | | (1) |
| (2) Smoke Point, mm | D1322 | 25.0 | | (1) |
| (3) Smoke Point, mm | D1322 | 18.0 | | (1) |
| AND | | | | (1) |
| Naphthalenes, Vol. % | D1840 | | 3.0 | (1) |

ADDITIONAL SPECIFICATIONS:

- (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) 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.
- (3) Product shall be clear and bright and free of suspended water and sediment. See paragraph 3.1.9.
- (4) No additives other than antioxidants and metal deactivators as set forth in ASTM D1655 (latest edition) Section 6.2 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.
- (5) No rust inhibitor shall be injected into this product unless approved by all shippers.
- (6) Method D56 is the preferred method. In case of a dispute D56 will apply.
- (7) 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. Annex A2 ITR or Annex nm average over an area of 2.5mm². Refer to ASTM D1655 note M for referee method.
- (8) The Mercaptan Sulfur determination may be waived if the fuel is considered sweet by the doctor test described in 4.2 of ASTM D235.
- (9) Simulated distillation (D2887) can be used but must be correlated to D86.

NOTES:

- In accordance with 40 CFR 1090.1015(a) this fuel is designated as Jet fuel and may not be redesignated as ULSD without recertification.
- Jet Fuel (max 1500 ppm sulfur). Not for use in highway vehicles or engines or off road, locomotive or marine engines.

**FUNGIBLE AVIATION TURBINE FUEL
JET A**

| | | EXPLORER ORIGIN SPECIFICATIONS | | |
|---|----------------------------|--------------------------------|-----------|-------------|
| PRODUCT PROPERTY | ASTM TEST METHOD | MINIMUM | MAXIMUM | ADDL SPECS |
| General Properties | | | | |
| Gravity, °API @ 60°F | D287, D1298, D4052 | 37 | 51 | (1) |
| Net Heat of Combustion, BTU/Pound | D3338, D4529, D4809 | 18,400 | | (1) (2) |
| Corrosion, Copper Strip, 2 Hrs. @ 212°F | D130 | | No. 1 | (1) |
| MSEP (WSIM) Origin | D3948, D7224 | 85 | | (1) |
| Destination | | 75 | | (1) |
| Electrical Conductivity | D2624 | | 10 | (1) |
| Particulate contaminant Mg/Gal | D2276 | | Report | (1) |
| Water Reaction: | D1094 | | | (1) |
| Interface Rating | | | 1b | (1) |
| Color, Saybolt (Origin) | D156, D6045 | 20 | | (1) |
| Total Sulfur, ppm | D4294, D2622, D5453, D7039 | | 11 | (1) |
| Color, Saybolt (Destination) | D156, D6045 | 18 | | (1) |
| Appearance | | | | (1) (3) |
| Additives | | | | (1) (4) (5) |
| Low Temperature Properties | | | | |
| Freezing Point, °C | D2386, D5972 | | -40.0 | (1) |
| Viscosity, cSt 104°F (40°C) | D445 D7042 | 1.0 | 1.9 | (1) |
| Viscosity, cSt -4°F (-20°C) | D445 D7042 | | 8.0 | (1) |
| Volatility | | | | |
| Flash Point, °F Origin | D56, D3828 | 108 | | (1) (6) |
| Destination | | 100 | | (1) |
| Distillation, Temp., C °(F) | D86 | | | (1) (9) |
| 10% Recovered | | | 205 (400) | (1) |
| 50% Recovered | | | Report | (1) |
| 90% Recovered | | | 288 (550) | (1) |
| Final Boiling Point, °F | | | 300 (572) | (1) |
| Distillation Residue, Vol. % | | | 1.5 | (1) |
| Distillation Loss, Vol. % | | | 1.5 | (1) |

| | | EXPLORER ORIGIN SPECIFICATIONS | | |
|---|----------------------------------|--------------------------------|----------|------------|
| PRODUCT PROPERTY | ASTM TEST METHOD | MINIMUM | MAXIMUM | ADDL SPECS |
| Stability | | | | |
| Existent Gum, mg/100 ml | D381 | | 7.0 | (1) |
| Thermal Stability at 275 origin | D3241 | | | (1) (7) |
| Filter Pressure Drop. mm Hg | | | 25 | (1) |
| Tube Deposit | VTR | | <3 | (1) |
| | ITR or ETR rating | | 85 | (1) |
| No Peacock or Abnormal Color Deposits | | | | |
| Composition Properties | | | | |
| Sulfur, Total wt. % | D7039 or D5453 D2622 or D4294 | | 0.0011 | (1) |
| Doctor Test | D4952 | | Negative | (1) |
| Sulfur, Mercaptan | D3227 | | 0.003 | (1) (8) |
| Aromatics, Vol. % | D1319 / D6379 | | 25/26.5 | (1) |
| Acidity, Total Max, mg KOH/g | D3242 | | 0.1 | (1) |
| Nitrogen ppm (m/m) | D4629 | | Report | (1) |
| Combustion Properties | | | | |
| One of the following requirements shall be met: | | | | |
| (1) Luminometer No. | D1740 | 45 | | (1) |
| (2) Smoke Point, mm | D1322 | 25.0 | | (1) |
| (3) Smoke Point, mm | D1322 | 18.0 | | (1) |
| AND | | | | (1) |
| Naphthalenes, Vol. % | D1840 | | 3.0 | (1) |

ADDITIONAL SPECIFICATIONS:

- (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) 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.
- (3) Product shall be clear and bright and free of suspended water and sediment. See paragraph 3.1.9.
- (4) No additives other than antioxidants and metal deactivators as set forth in ASTM D1655 (latest edition) Section 6.2 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.
- (5) No rust inhibitor shall be injected into this product unless approved by all shippers.
- (6) Method D56 is the preferred method. In case of a dispute D56 will apply.
- (7) 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.
- (8) The Mercaptan Sulfur determination may be waived if the fuel is considered sweet by the doctor test described in 4.2 of ASTM D235.
- (9) Simulated distillation (D2887) can be used but must be correlated to D86.

NOTES:

- In accordance with 40 CFR 1090.1015(a) this fuel is designated as Jet fuel and may not be redesignated as ULSD without recertification.
- Jet Fuel (max 15 ppm sulfur). Not for use in highway vehicles or engines or off road, locomotive or marine engines.

FUNGIBLE SPECIFICATIONS

CODES 75, 7V, 7R

**ULTRA LOW SULFUR DIESEL
FUNGIBLE ULTRA LOW SULFUR DIESEL**

| | | EXPLORER ORIGIN SPECIFICATIONS | | |
|---|---------------------------------|--------------------------------|---------------|----------------------------|
| PRODUCT PROPERTY | ASTM TEST METHOD | MINIMUM | MAXIMUM | ADDL SPECS |
| General Properties | | | | |
| Gravity, °API | D287, D4052 | 30 | | (1) (6) |
| Flash Point, °F Pensky-Marten | D93 | 135 | | (1) (6) |
| Distillation C (F) | D86 | | | (1) (6) (7) |
| 50% | | Report | | (1) (6) |
| 90% | | 282 (540) | 338 (640) | (1) (6) |
| End Point | | | 366 (690) | (1) (6) |
| Color, ASTM | D1500, D6045 | | 2.5 | (1) (6) |
| Color, Visual | | Undyed | | (1) (6) |
| Viscosity, cSt @ 104°F (40°C) | D445 D7042 | 1.9 | 4.1 | (1) (6) |
| Pour Point, °F | D97, D5949, D5950, D5985 | | See Page 3-29 | (1) (6) |
| Cloud Point, °F | D2500, D5771, D5772, D5773 | | See Page 3-29 | (1) (6) |
| Corrosion, 3 Hrs. @ 122 °F | D130 | | 1 | (1) (6) |
| Total Sulfur, % by wt. | D4294, D2622, D5453, D7039 | | | (1) (6) |
| All Origins | | | 0.0011 | (1) (2) (6) |
| Port Neches | | | 0.0011 | (1) (2) (6) |
| [C] Cetane Index | [C] D976 | [C] 40 | | [C] (1)-(6) |
| [C] Cetane Index | [C] D4737 | | | [C] (1) (3) (6) |
| | [C] Procedure A | [C] 40.0 | | [C] (1)-(6) |
| Cetane Number | D613, [C] D6890 | 40.0 | | (1) (6) |
| [N] And one of the following conditions should be met: | | | | |
| [N] Aromatics (Vol %), OR | [N] D1319 | [N] 40.0 | | [N] (1) (6) |
| [N] Cetane Index | [N] D976 | [N] 40.0 | | [N] (1) (6) |
| Ash, % by wt. | D482 | | 0.01 | (1) (6) |
| Carbon Residue: Ramsbottom on 10% Bottom | D524 | | 0.35 | (1) (6) |
| Water & Sediment | | | | (1) (4) (6) |
| Thermal Stability mg/100ml. | D2274 | | 2.5 | (1) (6) |
| OR 300°F Pad rating, DuPont scale | | | 7 | (1) (6) |
| OR Thermal stability Reflectance | D6468 | (W) 75 OR | | (1) (6) |
| Reading Min. | | (Y) 82 | | (1) (6) |
| Haze Rating @ 77°F (25°C) | D4176 Procedure 2 | | 2 | (1) (6) |
| Additives: | Corrosion Inhibitors: Page 3-30 | | | (1) (6) |

ADDITIONAL SPECIFICATIONS:

- (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) **[C]** ~~Aromatics by D1319 of 35 vol% max. may be used as an alternative.~~ **[N]** Reserved.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See paragraph 3.1.9.
- (5) On System #10 the Houston to Dallas 10" pipeline, diesel fuel may contain up to 5% Bio-Diesel. Locations affected are: North Houston (NH1), Bryan Terminal (BR1), Hearne Terminal (HR1), Waco Terminal (WA2 & WA4), Arlington Terminal (AR1 & AT1), Fort Worth Terminals (FT1, FM1, and FW1), Grapevine/Southlake Terminals (GR1, GR3, GR5) and Dallas/Singleton Terminals (DT1 & DT2).
- (6) 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.
- (7) Simulated distillation (D2887) can be used but must be correlated to D86.

NOTES:

- 75 complies with the ULSD standards of 40 CFR 1090.305.
- 75 is designated as ULSD in accordance with 40 CFR 1090.1115.
- 75 Undyed ULSD (max 15 ppm sulfur). For use in all diesel vehicles and engines.
- 7V Undyed Certified Non-Transportation Distillate Fuel (max 15 ppm sulfur).

FUNGIBLE SPECIFICATIONS ULTRA LOW SULFUR FUEL OIL

CODE 77

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

| | | EXPLORER ORIGIN SPECIFICATIONS | | |
|---|-----------------------------------|--------------------------------|---------------|------------------------|
| PRODUCT PROPERTY | ASTM TEST METHOD | MINIMUM | MAXIMUM | ADDL SPECS |
| General Properties | | | | |
| Gravity, °API | D287, D4052, D1298 | 30 | | (1) (6) |
| Flash Point, °F Pensky-Marten | D93 | 135 | | (1) (6) |
| Distillation C (F) | D86 | | | (1) (6) (7) |
| 50% | | Report | | (1) (6) |
| 90% | | 282 (540) | 338 (640) | (1) (6) |
| End Point | | | 366 (690) | (1) (6) |
| Color, ASTM | D1500, D6045 | | 2.5 | (1) (6) |
| Color, Visual | | Undyed | | (1) (6) |
| Viscosity, cSt @ 104°F (40°C) | D445 D7042 | 1.9 | 4.1 | (1) (6) |
| Pour Point, °F | D97, D5949, D5950, D5985 | | See Page 3-29 | (1) (6) |
| Cloud Point, °F | D2500, D5771, D5772, D5773 | | See Page 3-29 | (1) (6) |
| Corrosion, 3 Hrs. @ 122 °F | D130 | | 1 | (1) (6) |
| Total Sulfur, % by wt. | D4294, D2622, D5453, D7039 | | | (1) (6) |
| 28" Origin | | | 0.0011 | (1) (2) (6) |
| Lake Charles, Port Neches | | | 0.0011 | (1) (2) (6) |
| [C] Cetane Index | [C] D976 | [C] 48.0 | | [C] (1) (3) (6) |
| [C] Cetane Index | [C] D4737 | | | [C] (1) (6) |
| | [C] Procedure A | [C] 48.0 | | [C] (1) (6) |
| Cetane Number | D613, [C] D6890 | 48.0 | | (1) (6) |
| [N] And one of the following conditions should be met: | | | | |
| [N] Aromatics (Vol %), OR | [N] <u>D1319</u> | [N] <u>40.0</u> | | [N] (1) (6) |
| [N] Cetane Index | [N] <u>D976</u> | [N] <u>40.0</u> | | [N] (1) (6) |
| Ash, % by wt. | D482 | | 0.01 | (1) (6) |
| Carbon Residue: Ramsbottom on 10% Bottom | D524 | | 0.35 | (1) (6) |
| Water & Sediment | | | | (1) (4) (6) |
| Thermal Stability mg/100ml. | D2274 | | 2.5 | (1) (6) |
| OR 300°F Pad rating, DuPont scale | | | 7 | (1) (6) |
| OR Thermal stability Reflectance | D6468 | (W) 75 OR | | (1) (6) |
| Reading Min. | | (Y) 82 | | (1) (6) |
| Haze Rating @ 77°F (25°C) | D4176 Procedure 2 | | 2 | (1) (6) |
| Additives: | Corrosion Inhibitors: Page 3-30 | | | (1) (6) |

ADDITIONAL SPECIFICATIONS:

- (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) **[C]** ~~Aromatics by D1319 of 35 vol% max. may be used as an alternative.~~ **[N]** Reserved.
- (4) This product shall be free from undissolved water, sediment or other foreign materials in suspension. See paragraph 3.1.9.
- (5) On System #10 the Houston to Dallas 10" pipeline, diesel fuel may contain up to 5% Bio-Diesel. Locations affected are: North Houston (NH1), Bryan Terminal (BR1), Hearne Terminal (HR1), Waco Terminal (WA2 & WA4), Arlington Terminal (AR1 & AT1), Fort Worth Terminals (FT1, FM1, and FW1), Grapevine/Southlake Terminals (GR1, GR3, GR5) and Dallas/Singleton Terminals (DT1 & DT2).
- (6) 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.
- (7) Simulated distillation (D2887) can be used but must be correlated to D86.

NOTES:

- 77 complies with the ULSD standards of 40 CFR 1090.305.
- 77 is designated as ULSD in accordance with 40 CFR 1090.1115.
- 15 ppm sulfur (maximum) Undyed Ultra-Low Sulfur Diesel Fuel. For use in all diesel vehicles and engines. This product is Texas low emission diesel and may be used as fuel for diesel engines in any Texas county requiring the use of low emission diesel fuel.

FUNGIBLE SPECIFICATIONS

BIODIESEL

| | | EXPLORER ORIGIN SPECIFICATIONS | | |
|---|------------------|--------------------------------|-----------|------------|
| PRODUCT PROPERTY | ASTM TEST METHOD | MINIMUM | MAXIMUM | ADDL SPECS |
| <u>General Properties</u> | | | | |
| Gravity, °API | D1298, D4052 | Report | Report | (1) |
| Distillation °C (°F) | | | | (1) |
| 90% | D1160 | | 360 (680) | (1) |
| Corrosion, 3 Hrs @ 50°C | D130 | | 1B | (1) |
| Cloud Point, °C (°F) | D2500 | | | (1) |
| Summer | | | 10 (50) | (1) (2) |
| Winter | | | 2 (35.6) | (1) (2) |
| Water & Sediment | D2709 | | 0.05 | (1) |
| Haze Rating @ 77°F (25°C) | D4176 | | | (1) |
| | Procedure 2 | | 1 | (1) |
| Viscosity, cSt @ 104°F (40°C) | D445, D7042 | 1.9 | 6.0 | (1) |
| Carbon Residue, mass % | D4951 | | 0.05 | (1) |
| Phosphorous, mass% | D4951 | | 0.001 | (1) |
| Sulphur, ppm | | | 11 | (1) |
| Cetane number | D613, D6304 | 47 | | (1) |
| Water, mass% | E203 | | 0.035 | (1) |
| Free glycerin, mass% | D6584 | | 0.020 | (1) |
| Monoglyceride content, mass% | D6584 | | | (1) |
| Summer | | | 0.700 | (1) (2) |
| Winter | | | 0.400 | (1) (2) |
| Total Glycerin, mass% | D6584 | | 0.240 | (1) |
| Acid Number, mg KOH/g | D664 | | 0.5 | (1) |
| Cold Soak Filterability, seconds | D7501 | | | (1) |
| Summer | | | 360 | (1) (2) |
| Winter | | | 200 | (1) (2) |
| Sulfated Ash, mass% | D874 | | 0.020 | (1) |
| Alcohol Control, one of the following: | | | | (1) |
| 1. Methanol Content, mass% | EN14110 | 130°C | 0.200 | (1) |
| 2. Flashpoint, °C (°F) | D93 | (266°F) 93°C | | (1) |
| Flashpoint (closed cup), °C (°F) | D93 | (199°F) | | (1) |
| Oxidation Stability hrs @ 110°C (230°F) | EN15751 | 6 | | (1) |
| Sodium & Potassium combined ppm (µg/g) | EN14538 | | 5 | (1) |
| Calcium & Magnesium combined ppm (µg/g) | En14538 | | 5 | (1) |

ADDITIONAL SPECIFICATIONS - BIODIESEL:

- (1) Product must pass ASTM D6751 standards.
(Distilled ME from palm oil, UCO and DCO upon approval)
- (2) No methyl esters derived from palm oil, brown grease, or yellow grease.
- (3) Supplier must be BQ9000 certified.
- (4) All product must pass through a 20 micron filter at loading.
- (5) All product must be undyed.

NOTES:

1. This shall be the referee method. Others as allowable under ASTM D6751.

| | | |
|-----------|--------|---|
| January | Winter | |
| February | Winter | |
| March* | Summer | Transition month: Product cannot be 100% summer specification |
| April | Summer | |
| May | Summer | |
| June | Summer | |
| July | Summer | |
| August | Summer | |
| September | Summer | |
| October | Summer | |
| November* | Summer | Transition month: Product cannot be 100% summer specification |
| December | Winter | |

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 ---- 06 | 0 | +15 |
| Feb. | 07----- 12 | 0 | +15 |
| Mar. | 13----- 18 | 0 | +15 |
| Apr. | 19----- 24 | +10 | +20 |
| May | 25----- 30 | +10 | +20 |
| Jun. | 31----- 36 | +10 | +20 |
| Jul. | 37----- 42 | +10 | +20 |
| Aug. | 43----- 48 | +10 | +20 |
| Sep. | 49----- 54 | 0 | +15 |
| Oct. | 55----- 60 | 0 | +15 |
| Nov. | 61----- 66 | 0 | +15 |
| Dec. | 67----- 72 | 0 | +15 |

3.6 ADDITIVE REQUIREMENTS FOR FUEL OIL DISTILLATE SPECIFICATIONS

3.6.1 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 | 8014 | SPEC-AID | 8Q110 ULS |
| Tolad | 4415 | Lubrizol | 8017 | SPEC-AID | 8Q123 ULS |
| Corexit | 5267 | Mobil | C-605 | SPEC-AID | 8Q22 |
| DuPont | DCI-4A | Nalco | 5403 | Tolad | 245 |
| DuPont | DCI-6 | Nalco | 5405 | Tolad | 249 |
| DuPont | DCI-6A | Nalco | 5406 | Unichem | 7500 |
| DuPont | DCI-11 | Nalco | 5400-A | Unichem | 7501 |
| DuPont | DCI-17 | Nalco | EC5414A | Unichem | 7510 |
| DuPont | AFA-1 | Nalco | EC5415A | UOP Unicor | |
| DuPont | DMA-4 | Nalco | EC5416A | UOP Unicor J | |
| Ethyl HI Tec | 580 | | | UOP Unicor PL | |
| MidContinental Chemical | MCC5001 | | | | |

3.6.2 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.

TRANSMIX

| | | EXPLORER ORIGIN SPECIFICATIONS | | ADDL SPECS |
|---|------------------|--------------------------------|----------------|------------|
| PRODUCT PROPERTY | ASTM TEST METHOD | MINIMUM | MAXIMUM | |
| General Properties | | | | |
| Particulate Contamination (mg/Gal)(Dry) | D2276, D5452 | | B6 | (1) |
| Appearance, 1 Foot Bottom Sample | D4176 | | Clear & Bright | (1) |
| Distillation | D86 | | Report | (1) |
| DVPE (EPA) | D5191 | | Report | (1) |
| Total Sulfur, % by wt. | D2622, D5453 | | Report | (1) |
| NACE Corrosion | TM0172-01, D7548 | B+ | | (1) |

ADDITIONAL SPECIFICATIONS:

- (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.

NOTES:

- Transmix Gasoline Product—not for use as gasoline.