



## STATE OF CALIFORNIA

**Bid Specification  
Biodiesel Blend (B20)**

9108-2988

- 1.0 SCOPE:** This specification covers a biodiesel fuel (B20) blend containing 20% biodiesel, with the remainder being ultra low sulfur petroleum diesel.
- 2.0 APPLICABLE LAWS and INDUSTRY STANDARDS:** Specifications, standards, and codes referenced in this document in effect on the opening of the 'Invitation For Bid', form a part of this specification.
- 2.1** Fuel shall meet the requirements of Low Carbon Fuel Standard (LCFS), Title 17, Article 4 of California Code of Regulations (CCR), Sections 95480 through 95490 (collectively referred to as "LCFS" ) applies to any transportation fuel, as defined in section 95481, that is sold, supplied, or offered for sale in California, and to any person who, as a "regulated party" defined in section 95481 and specified in section 95484(a), is responsible for a transportation fuel in calendar year. LCFS regulation became effective on January 12, 2010.  
Note: State is end user and will not assume the role as a "regulated party".

**3.0 TECHNICAL REQUIREMENTS:**

- 3.1 Material, Chemical and Physical Properties:** The biodiesel fuel (B20) blend containing 20% biodiesel shall meet all of the following requirements:

3.1.1 The petroleum diesel fuel used for the blending process shall be ultra low sulfur No. 1-D diesel fuel, ultra low sulfur No. 2-D diesel fuel, or combination of grade No.1 and grade No. 2-D diesel fuel. It shall meet or exceed the requirements of the latest edition of ASTM D975 and shall meet sulfur content and the aromatic content in California Code of Regulations, Title 13, section 2281 and section 2282.

3.1.2 The biodiesel fuel blend stock (B100) used for blending process shall meet or exceed the requirements of the latest edition of ASTM D6751 except for properties shown in the table-1. It shall contain less than 10% aromatics; it shall be clear, bright, and visually free from un-dissolved water, sediment, and suspended matter according to ASTM D4176 Procedure 1 Test Method.

| Table-1 |                     |        |             |           |
|---------|---------------------|--------|-------------|-----------|
| No.     | Property            | Unit   | Test Method | Value     |
| 1       | Sulfated Ash        | % mass | ASTM D874   | 0.005 max |
| 2       | Oxidation Stability | hours  | EN14112     | 6 min     |
| 3       | Mono Glyceride      | % m/m  | ASTM D6584  | 0.80 max  |
| 4       | Di-Glyceride        | % m/m  | ASTM D6584  | 0.20 max  |
| 5       | Tri-Glyceride       | % m/m  | ASTM D6584  | 0.20 max  |
| 6       | Density             | gm/ml  | ASTM D4052  | Report    |

- 3.1.3 The biodiesel blend shall consist of 20.0 +0/-2.0 % by volume Biodiesel Fuel Blend Stock (B100), measured per EN 14078 or ASTM D7371. The remainder of the fuel shall be ultra low sulfur No. 1-D diesel fuel, ultra low sulfur No. 2-D diesel fuel, or combination of grade No.1 and grade No. 2-D diesel fuel.
- 3.1.4 Cloud point of blended B20 fuel shall be -5 °C or lower.
- 3.1.5 Finished biodiesel fuel blends shall meet the specifications set forth by ASTM International in the latest edition of "Standard Specifications for Diesel Fuel Oil, Biodiesel Blend (B6 to B20) D7467".
- 3.1.6 The chemical and physical requirements of the furnished fuel shall meet the requirements of the California Code of Regulations, Title 13, section 2281 (sulfur content) and section 2282 (aromatic content).
- 3.1.7 Biodiesel blend and biodiesel blend stock shall also comply with "California Air Resources Board Guidance on Biodiesel Use" Regulatory Guidance issued dated October, 2011 or latest.

#### **4.0 QUALITY ASSURANCE PROVISIONS:**

- 4.1 The delivered product may be inspected and tested prior to acceptance according to ASTM standards for Sulfur, and Aromatics and other test methods specified in ASTM D975 and ASTM D6751, including but not limited to Cloud Point and Acid Number or other test method specified in section 3.
- 4.2 Supplier shall ensure that all trucks, railcars and vessels are drained completely and inspected prior to loading if the previous load contained a product that would contaminate the biodiesel (e.g., gasoline, ethanol, methanol, lube oils, raw vegetable oil or animal fats) including dyed products and products in excess of 15 ppm sulfur.
- 4.3 Producer of the biodiesel shall be certified to BQ-9000 by National Biodiesel Board (NBB) or shall have internal Quality Control System (QCS). At a minimum, the following elements shall be part of QCS:
  - 4.3.1 Document Control: Producer of biodiesel shall maintain document control system. Only approved processing and operating procedures shall be used. Documents shall be approved by Quality Control Manager of the company or similar authority.
  - 4.3.2 Lot Traceability. All delivered lots to customer shall be traceable to its source and its feedstock.
  - 4.3.3 Record keeping: Producer of biodiesel shall maintain record of analyst's training, equipment calibration, and test results. Records shall be kept at least for five years. State shall have the right to review the records.

- 4.3.4 Sampling: Production lot shall be sampled as per ASTM D4057. Portion of sample shall be kept for a minimum of 60 days.
- 4.3.5 All production lot samples shall be tested to ensure that product meets or exceeds the bid specifications.
- 4.3.6 Storage Tank: If a biodiesel storage tank has no activity for thirty days, sample shall be taken and tested for water, sediment and oxidation stability ensuring that it meets the bid specifications. If sample fails, product shall be segregated and it shall not be shipped to customer.
- 4.3.7 Test Laboratory: On site or third party test laboratory shall be used for testing purposes. Test laboratory shall adhere to Good Laboratory Practice (GLP) e.g. use of regularly calibrated equipment, record keeping, and qualified staff for testing etc. Latest edition of applicable ASTM and European EN standards shall be used. Test laboratory shall execute a documented program to verify their test results by sending out duplicate test samples to an independent laboratory. Such verifications shall be done at least every four months.
- 4.3.8 Certificate of Analysis (COA): COA shall be generated for each production lot. COA shall provide test results for properties specified in invitation for bid and the product specification. Lot number and test date shall be identified on COA.
- 4.3.9 Internal Audit: Producer of biodiesel shall have internal audit system to ensure that procedures are being followed as per company policy. Internal audit shall be done at least once a year. At a minimum, audit shall focus on accuracy of processing procedures, non-conforming reports, and corrective actions.
- 4.3.10 Non-Conforming Product: Producer of biodiesel shall have procedures for disposition of non-conforming lots ensuring that non-conforming biodiesel fuel is not shipped to customer. Corrective and preventative actions shall be taken immediately as soon as product non-conformities are identified.



STATE OF CALIFORNIA

Bid Specification
Biodiesel Blend (B5)

9108-3000

1.0 SCOPE: This specification covers a biodiesel fuel (B5) blend containing 5% biodiesel, with the remainder being ultra low sulfur petroleum diesel.

2.0 APPLICABLE LAWS and INDUSTRY STANDARDS: Specifications and standards referenced in this document in effect on the opening of the 'Invitation For Bid', form a part of this specification.

2.1 Fuel shall meet the requirements of Low Carbon Fuel Standard (LCFS), Title 17, Article 4 of California Code of regulations (CCR), sections 95480 through 95490 (collectively referred to as "LCFS") that applies to any transportation fuel, as defined in section 95481, that is sold, supplied, or offered for sale in California, and to any person who, as a "regulated party" defined in section 95481 and specified in section 95484(a), is responsible for a transportation fuel in calendar year. LCFS regulation became effective on January 12, 2010. Note: State is end user and will not assume the role as a "regulated party".

3.0 TECHNICAL REQUIREMENTS:

3.1 Material, Chemical and Physical Properties: The biodiesel fuel (B5) blend containing 5% biodiesel shall meet all of the following requirements:

3.1.1 The petroleum diesel fuel used for the blending process shall be ultra low sulfur No. 1-D diesel fuel, ultra low sulfur No. 2-D diesel fuel, or combination of grade No.1 and grade No. 2-D diesel fuel. It shall meet or exceed the requirements of the latest edition of ASTM D975 and shall meet sulfur content and the aromatic content in California Code of Regulations, Title 13, section 2281 and section 2282.

3.1.2 The Biodiesel Fuel Blend Stock (B100) used for blending process shall meet or exceed the requirements of the latest edition of ASTM D6751 except for properties shown in the table -1. It shall contain less than 10% aromatics; it shall be clear, bright, and visually free from un-dissolved water, sediment, and suspended matter according to ASTM D4176 Procedure 1 Test Method.

Table -1
Table with 5 columns: No., Property, Unit, Test Method, Value. Rows include Sulfated Ash, Oxidation Stability, Mono Glyceride, Di-Glyceride, Tri-Glyceride, and Density.

- 3.1.2 The biodiesel blend shall consist of 5.0 +/- 1.0% by volume Biodiesel Fuel Blend Stock (B100), measured per EN 14078 or ASTM D7371. The remainder of the fuel shall be ultra low sulfur No. 1-D diesel fuel, ultra low sulfur No. 2-D diesel fuel, or combination of grade No.1 and grade No. 2-D diesel fuel.
- 3.1.3 Cloud point of blended B5 fuel shall be -10 °C or lower.
- 3.1.4 Finished biodiesel fuel blends shall meet the specifications set forth by ASTM International in the latest edition of "Standard Specifications for Diesel Fuel Oils D975".
- 3.1.5 The chemical and physical requirements of the furnished fuel (the biodiesel blend) shall meet the requirements of the California Code of Regulations, Title 13, section 2281 (sulfur content) and section 2282 (aromatic content).
- 3.1.7 Biodiesel blend and biodiesel blend stock shall also comply with "California Air Resources Board Guidance on Biodiesel Use" Regulatory Guidance dated October, 2011 or latest.

#### **4.0 QUALITY ASSURANCE PROVISIONS:**

- 4.1 The delivered product may be inspected and tested prior to acceptance according to ASTM standards for Sulfur, and Aromatics and other test methods Specified in ASTM D975 and ASTM D6751, including but not limited to Cloud Point and Acid Number.
- 4.2 Supplier shall ensure that all trucks, railcars and vessels are drained completely and inspected prior to loading if the previous load contained a product that would contaminate the biodiesel (e.g., gasoline, ethanol, methanol, lube oils, raw vegetable oil or animal fats) including dyed products and products in excess of 15 ppm sulfur.
- 4.3 Producer of the biodiesel shall be certified to BQ-9000 by National Biodiesel Board (NBB) or shall have internal Quality Control System (QCS). At a minimum, the following elements shall be part of QCS:
  - 4.3.1 Document Control: Producer of biodiesel shall maintain document control system. Only approved processing and operating procedures shall be used. Documents shall be approved by Quality Control Manager of the company or similar authority.
  - 4.3.2 Lot Traceability. All delivered lots to customer shall be traceable to its source and its feedstock.

- 4.3.3 Record Keeping: Producer of biodiesel shall maintain record of analyst's training, equipment calibration, and test results. Records shall be kept at least for five years. State shall have the right to review the records.
- 4.3.4 Sampling: Production lot shall be sampled as per ASTM D4057. Portion of sample shall be kept for a minimum of 60 days.
- 4.3.5 All production lot samples shall be tested to ensure that product meets or exceeds the bid specifications.
- 4.3.6 Storage Tank: If a biodiesel storage tank has no activity for thirty days, sample shall be taken and tested for water, sediment and oxidation stability ensuring that it meets the bid specifications. If sample fails, product shall be segregated and it shall not be shipped to customer.
- 4.3.7 Test Laboratory: On site or third party test laboratory shall be used for testing purposes. Test laboratory shall adhere to Good Laboratory Practice (GLP) e.g. use of regularly calibrated equipment, record keeping, and qualified staff for testing etc. Latest edition of applicable ASTM and European EN standards shall be used. Test laboratory shall execute a documented program to verify their test results by sending out duplicate test samples to an independent laboratory. Such verifications shall be done at least every four months.
- 4.3.8 Certificate of Analysis (COA): COA shall be generated for each production lot. COA shall provide test results for properties specified in invitation for bid and the product specification. Lot number and test date shall be identified on COA.
- 4.3.9 Internal Audit: Producer of biodiesel shall have internal audit system to ensure that procedures are being followed as per company policy. Internal audit shall be done at least once a year. At a minimum, audit shall focus on accuracy of processing procedures, non-conforming reports, and corrective actions.
- 4.3.10 Non-Conforming Product: Producer of biodiesel shall have procedures for disposition of non-conforming lots ensuring that non-conforming biodiesel fuel is not shipped to customer. Corrective and preventative actions shall be taken immediately as soon as product non-conformities are identified.