

**C16.27 FUEL, BIODIESEL (B20) (DESC OCT 2003)**

Offered product shall conform to the following requirements that define a fuel suitable for use in automotive diesel engines.

(a) **PRODUCT COMPOSITIONAL REQUIREMENTS.** Product shall consist of a blend of 20 percent (plus or minus one percent) mono-alkyl esters of long chain fatty acids derived from virgin vegetable oil blendstock and/or yellow grease blendstock conforming to the requirements of ASTM D 6751 and 80 percent minimum low sulfur diesel fuel oil conforming to ASTM D 975, grade low sulfur number 1-D or grade low sulfur number 2-D.

(b) **PRODUCT PERFORMANCE REQUIREMENTS.** The finished biodiesel blend shall conform to the following requirements:

| <u>TEST</u>  | <u>METHOD</u>               | <u>VALUE</u>                             |
|--|-----------------------------|--|
| 1. Appearance  | ASTM D 4176,<br>Procedure 1 | Clear & Bright                           |
| 2. Acid Number, mg KOH/g   | ASTM D 664                  | 0.2 max.                                 |
| 3. Density @ 15°C, kg/L or API Gravity @ 60°F  | ASTM D 4052<br>ASTM D 1298  | Report                                   |
| 4. Viscosity, mm/S at 40°C   | ASTM D 445                  | 1.3 - 4.1                                |
| 5. Flashpoint, °C  | ASTM D 93                   | Apr - Sep: 52 min.<br>Oct - Mar: 38 min. |
| 6. Cloud point, °C<br>OR<br>Cold Filter Plugging Point, °C                                     | ASTM D 2500<br>ASTM D 6371  | see (c) below<br>see (c) below           |
| 7. Sulfur Content, mass %  | ASTM D 2622                 | 0.05 max.                                |
| 8. Distillation Temperature, °C<br>10% point, °C<br>50% point, °C<br>90% point, °C, evaporated | ASTM D 86                   | Report<br>Report<br>338 max.             |
| 9. Carbon Residue on 10% bottoms, mass %   | ASTM D 524                  | 0.35 max.                                |
| 10. Cetane Number  | ASTM D 613                  | 40 min.                                  |
| 11. Ash Content, mass%   | ASTM D 482                  | 0.01 max.                                |
| 12. Water and Sediment, volume%  | ASTM D 2709                 | 0.05 max.                                |
| 13. Copper Corrosion, 3 hours @ 50°C   | ASTM D 130                  | No. 3 max.                               |

(c) **PRODUCT LOW TEMPERATURE PERFORMANCE.** The lower temperature performance of the B20 shall be defined by one of the following two properties: Cloud Point or Cold Filter Plugging Point (CFPP). Unless a more restrictive cloud point limit is specified in the contract schedule, the cloud point tested in accordance with ASTM D 2500 shall be equal to or lower than the tenth percentile minimum ambient temperature in the geographical area and seasonal timeframe in which the B20 is to be used, as specified in Appendix X4 of ASTM D 975. Unless a more restrictive CFPP limit is specified in the contract schedule, the maximum CFPP of the B20 shall be a minimum of 10 degrees Celsius below the tenth percentile minimum ambient temperature in the geographical area and seasonal timeframe in which the B20 is to be used, when tested in accordance with ASTM D 6371.

(d) **BLENDING.** Product shall be blended prior to delivery. Manifold blending at time of delivery and blending in the receipt tank is not permitted. The resultant blended product must meet all performance requirements specified in the contract.

(e) **ENVIRONMENTAL PROTECTION AGENCY (EPA) REGISTRATION.** B100 product must be EPA registered in accordance with 40 CFR Part 79, Registration of Fuels and Fuel Additives. The Contractor shall provide a copy of the EPA registration letter to the Contracting Officer at the time of offer.