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Revision History

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Table of Contents

1.0 SCOPE

This specification covers the requirements for renewable hydrocarbon diesel fuel with 0-5% biodiesel blend. It shall be suitable for use in diesel engines operating in industrial and heavy mobile vehicle service.

2.0 APPLICABLE LAWS and INDUSTRY STANDARDS

Specifications, standards and regulations referenced in this document in effect on the opening of the invitation for bid, form a part of this specification.

2.1 LAWS and REGULATIONS

2.1.1 California Code of Regulations (CCR) Title 4, Division 9, Chapter 6, Article 5, Section 4149, Non-Ester Renewable Diesel Blends

2.1.2 CCR, Title 13, Division 3, Chapter 5, Article 2, Specifications for Alternative Diesel Fuel

2.1.3 40 Code of Federal Regulations (CFR) Part 79, Registration of Fuels and Fuel Additives

2.1.4 CCR Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Sub article 7, Section 95486, Low Carbon Fuel Standard (LCFS)

2.1.5 CCR, Title 13, Division 3, Chapter 5, Article 2, Section 2281(Sulfur Content of Diesel Fuel) and Section 2282 (Aromatic Hydrocarbon and Biodiesel Contents of Diesel Fuel)

2.2 INDUSTRY STANDARDS

2.2.1 ASTM D6751 Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels

2.2.2 ASTM D975 Standard Specification for Diesel Fuel Oils

2.2.3 National Biodiesel Board, BQ-9000

3.0 DEFINITIONS

3.1 “Renewable hydrocarbon diesel” means a diesel fuel that is produced from nonpetroleum renewable resources but is not a mono-alkyl ester, and which is registered as motor fuel or fuel additive under CFR Part 79.

3.2 Biodiesel means, fuel comprised of mono-alkyl esters of long chain fatty acids derived from nonpetroleum resources, and which is not a mono-alkyl ester, and which is registered as motor fuel or fuel additive under CFR Part 79.

4.0 TECHNICAL REQUIREMENTS

4.1 The renewable diesel (RD) fuel portion of the blend shall conform to California Code of Regulations (CCR) Title 4, Division 9, Chapter 6, Article 5, Section 4149.

4.2 Biodiesel portion of Biodiesel Blend stock (B100) shall be Grade 1-B S15, and shall meet the requirements of the latest edition of ASTM Specifications D6751.

4.3 Blended Renewable Diesel shall meet the requirements of CCR, Title 13, Division 3, Chapter 5, Article 3, Sub Article 2. Specifications for Alternative Diesel Fuels.

4.4 Maximum carbon intensity (C.I) of the delivered fuel shall be as specified in the following table:

Table 1: Maximum Carbon Intesity by County

Caltrans Districts	Counties	C.I[1] (gCO2e/MJ)
1	Del Norte, Humboldt, Mendocino, Lake	50
2	Siskiyoy, Modoc, Trinity, Shasta, Lassen, Tehama, Plumas	50
3	Glen, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Yolo, Sacramento, Eldorado	50
4	Sonoma, Napa, Marin, San Francisco, Solano, San Mateo, Contra Costa, Alameda, Santa Clara	50
10	San Joaquin, Amador, Alpine, Calvaras, Stanislaus, Toulumne, Mariposa, Imperial	50

4.5 Renewable diesel shall be isomerized to improve cold flow properties. In addition to isomerization, other industry standard methods are permitted to meet the requirements of Section 4.6.

4.6 Blended Renewable Diesel fuel shall meet the requirements of ASTM D975 No. 2-D S15. In addition, blended renewable diesel fuel shall meet the following properties as shown in the following table.

Table 2: Blended Rewable Diesel Test Requirements

Property	Test Standard	Unit	Limits	9108-4604
Cloud Point	ASTM D2500/D7773	°C (°F)	maximum	-11 (12.2)
Fatty Acid Methyl Ester (Biodiesel	ASTM D7371	% volume	maximum	5
Cold Soak Filter Blocking Tendency	CA-CGSB 3.0 No. 142.0-2014[2]		maximum	1.2
Oxidative Stability	EN15751	hours	maximum	6

[1] C.I shall be determined by the Low Carbon Fuel Standard (LCFS), Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Sub Article 7, of California Code of Regulations (CCR), Section 95486.
[2] Modification is to use neat sample instead of diluted sample.

Property	Test Standard	Unit	Limits	9108-4604
Appearance	ASTM D4176			Clear and Bright

4.7 The blended diesel fuel shall meet the requirements of the California Code of Regulation, Title 13, Division 3, Chapter 5, Article 2, Section 2281 (sulfur content), and section 2282 (aromatic hydrocarbon). Alternative diesel formulation must be certified by CARB. Evidence of such fact shall be available to the California State, Department of General Services, Procurement Division, in the form of a letter certifying such compliance, and signed by a responsible official of the company to supply this fuel to the State.

4.8 The blended renewable diesel fuel shall meet the requirements of Low carbon Fuel Standard (LCFS), Title 17, Division 3, Chapter 1, Subchapter 10, Article 4, Sub Article 7, 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".

4.9 Biodiesel and biodiesel blend stock shall comply with California Air Resources (ARB) Guideline on Biodiesel use, dated October 2011 or latest.

5.0 STORAGE LIFE

Fuel shall not deteriorate at a rate faster than industry average in ordinary storage and shall not for excessive gum, resin, or deposits.

6.0 QUALITY ASSURANCE PROVISIONS

6.1 The State, at its discretion, may take the samples of the delivered fuel at the time of delivery prior to transferring of fuel to the storage tank. Samples may be tested for quality of fuel as per applicable test standards as specified in this specification. State of California reserves the right to reject non-compliant fuel.

If the test analysis of sampled fuel shows that the fuel does not comply with specification, the supplier shall be responsible for all costs related to test analysis, removal, and disposal of non-compliant fuel from State sites. It is expressly understood that existing fuel in departments (agency) tank that is contaminated by fuel does not comply of these specifications shall also be replaced.

6.2 Upon request from the State, supplier shall provide test data showing compliance to the requirements of section 4 of this specification.

6.3 Supplier shall ensure that all trucks, railcars, and vessels used to transport shall be completely drained, and inspected prior to loading if the previous load contained other petroleum products that would contaminate the renewable diesel fuel.

6.4 The finished blended renewable diesel fuel shall be visibly free of un-dissolved water, sediment, and suspended matter.

6.5 The producer of the biodiesel shall be certified to BQ-9000 through National Biodiesel Board (NBB).

6.6 Supplier shall provide Material Safety Data Sheet (MSDS) for renewable diesel fuel and all other chemicals intentionally added into diesel fuel including additives. MSDS shall accompany with first delivery at each location, and upon request from the State.

6.7 At the time of delivery, blended renewable diesel fuel shall comply with all Federal, State laws and regulations applicable to renewable diesel.