Cashman Fluids Analysis (CFA) offers the following test packages as a part of our traditional PREPAID fuel analysis program for new and used diesel fuel. This program was designed to allow our customers the flexibility of sampling their equipment either as part of a routine sampling program, or as the need arises due to equipment health concerns. The kits sold in this program are pre-paid. Purchase the kit, receive the supplies necessary for sampling, and the analysis is paid for. This allows customers to have kits on the shelves for when they need them, without having to wait for supplies to arrive to pull a sample. Included with each part number available for pre-paid purchase is: 1 (one) pre-paid CFA sample bottle; color-coded sample label; Hazmat shipping box; bag and absorbent wadding appropriate for shipping by carrier of choice (shipping not included).

There are eight different analytical levels of fuel testing and one analytical level of fuel filter testing that can be ordered. These different kits offer increasingly specialized test packages to allow for more advanced testing when equipment is mission critical. Additional contingency tests in these packages can be performed when our analysts have a concern with the results they see from the standard tests.

We're committed to being a value-added partner in your success. Actively listening to your needs and collaborating with you allows us to recommend solutions and build value towards ensuring a solid foundation for your success. We provide quality analytical results with a quick turn-around time in addition to offering the support you need to maintain a top-tier condition monitoring program. We sincerely appreciate the opportunity to earn your business and look forward to following up with you.

Warm Regards,

Cashman Fluids Analysis Team
oillab@cashmanfluidsanalysis.com
(866) 224-3087

These packages are designed for the routine analysis of conventional diesel fuels. Please contact a CFA team member to discuss specialty fluids or analytical needs outside of the scope of routine fuel analysis. CFA strongly encourages proper shipment of Fuels. It is incumbent upon customers to use appropriate fuel shipping containers and carriers, especially for diesel fuel. We also encourage sending SDS with each shipment of fuel to be analyzed.

2023 Fuel Packages - Tests

Rev. 01/03/2023

Diesel Standard ASTM D975 – All Referee methods*

Part No.	Description	Testing	Method
ASTM D975	Diesel Fuel Quality Assurance Standard for #2-D S15 fuel. Designed to evaluate diesel fuel for use using only the referee methods. Allow 14-21 business days for sample processing.	Viscosity @ 40°C ^Distillation (90%) ^Cetane Number API Gravity ^Cloud Point Flash Point, Closed-Cup Sulfur Content by UVF Bottom Sediment & Water Visual Water/Debris ^Ash ^Carbon Residue-Ramsbottom 10 % Bottoms Copper Strip Corrosion Rating Conductivity ^Lubricity, HFRR @ 60°C	ASTM D445 ASTM D86* ASTM D613* ASTM D1298 ASTM D2500* ASTM D93 ASTM D5453 ASTM D2709 ASTM D482 ASTM D524* ASTM D130 ASTM D2624 ASTM D6079

Diesel Standard ASTM D975 – With alternate methods

Testing	Description	Testing	Method
ASTM D975 ALT	Diesel Fuel Quality Assurance Standard for 2-D S15 fuel. Designed to evaluate diesel fuel for use using alternate methods. Allow 14-21 business days for sample processing.	Viscosity @ 40°C Simulated Distillation (90%) Cetane Index API Gravity Cloud Point Flash Point, Closed-Cup Sulfur Content by UVF Bottom Sediment & Water Visual Water/Debris ^Ash Carbon Residue- Micro Method Copper Strip Corrosion Rating Conductivity ^Lubricity, HFRR @ 60°C	ASTM D445 ASTM D2887 ASTM D4737 ASTM D1298 ASTM D7689 ASTM D93 ASTM D5453 ASTM D2709 ASTM D482 ASTM D4530 ASTM D130 ASTM D2624 ASTM D6079

* Referee methods ASTM D86, D613, D2500, and D524 require additional sample volume and cost.

^ Testing performed by an outside ISO 17025 accredited laboratory.

Basic Product Contamination Check

Available as a prepaid SOP

Part No.	Description	Testing	Method
FA1	Diesel Contamination Basic Minimum tests designed to evaluate contaminates in shipments of diesel fuel and/or frequent turnover of storage tanks. Bacteria test requires 72 hours. Allow 3-7 business days. [1]Contingent on other testing	Viscosity @ 40°C ICP Spectroscopy Infrared Spectroscopy** Total Ferrous Debris by PqL Karl Fischer Water Bacteria and Fungus API Gravity Particle Count Visual Water/Debris [1]Microscope Membrane Photo and Membrane Patch	ASTM D445 ASTM D5185 ASTM D7418/E2412 SOP 725 ASTM D6304b SOP 712 SOP 16604 ASTM D7596 SOP 729

** Soot ASTM D7844, Oxidation ASTM D7414, Sulfate ASTM D7415, Phosphate (anti-wear) ASTM D7412, and Nitration ASTM D7624

Basic Product Verification Check

Available as a prepaid SOP

Part No.	Description	Testing	Method
FA2	Diesel Verification Basic Minimum tests designed to evaluate diesel fuel for tanks with slower turnover. Allow 3-7 business days.	Viscosity @ 40°C Karl Fischer Water API Gravity Total Acid Number Biodiesel Content Flash Point Closed-Cup Sulfur Content by UVF Visual Water/Debris	ASTM D445 ASTM D6304b SOP 16604 ASTM D664 ASTM D7371 ASTM D93 ASTM D5453

Advanced Product Contamination Check

Available as a prepaid SOP

Part No.	Description	Testing	Method
FA3	Diesel Contamination Advanced Designed to evaluate contaminants in shipments of diesel fuel that may be suspected to be contaminated. Bacteria test requires 72 hrs. Allow up to 10 business days.	Viscosity @ 40°C ICP Spectroscopy Infrared Spectroscopy** Total Ferrous Debris by PqL Karl Fischer Water Bacteria and Fungus API Gravity Particle Count Simulated Distillation (100%) Biodiesel Content Bottom Sediment & Water Microscope Membrane Photo and Membrane Patch Visual Water/Debris	ASTM D445 ASTM D5185 ASTM D7418/E2412 SOP 725 ASTM D6304b SOP 712 SOP 16604 ASTM D7596 ASTM D2887 ASTM D7371 ASTM D2709 SOP 729

** Soot ASTM D7844, Oxidation ASTM D7414, Sulfate ASTM D7415, Phosphate (anti-wear) ASTM D7412, and Nitration ASTM D7624

Advanced Product Verification Check

Available as a prepaid SOP

Part No.	Description	Testing	Method
FA4	Diesel Verification Advanced Designed to evaluate diesel fuel in critical systems. Suited for summer or winterized diesel fuel. Allow up to 10 business days. *Performed if sample is 100% Biodiesel ^Outsourced to ISO 17025 accredited laboratory	Viscosity @ 40°C Karl Fischer Water API Gravity Total Acid Number Biodiesel Content Flash Point Closed-Cup Sulfur Content by UVF Simulated Distillation (100%) Cetane Index Cloud/Pour Point Cold Filter Plug Point Visual Water/Debris *^Cold Soak Filtration	ASTM D445 ASTM D6304b ASTM D1298 ASTM D664 ASTM D7371 ASTM D93 ASTM D5453 ASTM D2887 ASTM D4737(D976*) ASTM D7689/D7346 ASTM D6371M ASTM D6217b

Advanced Product Verification Check

Available as a prepaid SOP

Part No.	Description	Testing	Method
FA4M +MMP	Diesel Cold Weather Verification Advanced Designed to evaluate cold flow performance potential of #2 ULSD, including an in-house analysis to detect the presence and severity of debris contamination and cold-induced soft particulate. Allow up to 14 business days.	Viscosity @ 40°C Karl Fischer Water API Gravity Fine Metals by ICP Biodiesel Content Flash Point Closed-Cup Sulfur Content by UVF Simulated Distillation (100%) Cetane Index Cloud/Pour Point Cold Filter Plug Point Modified Micro Patch Visual Water/Debris	ASTM D445 ASTM D6304b ASTM D1298 ASTM D5185 ASTM D7371 ASTM D93 ASTM D5453 ASTM D2887 ASTM D4737(D976*) ASTM D7689/ D7346 ASTM D6371M SOP 729/13495.1

Advanced Product Contamination and Verification Check

Available as a prepaid SOP

Part No.	Description	Testing	Method
FA5	Diesel Verification Advanced Designed to evaluate diesel fuel in tanks with slow turnover or winterized diesel fuel and evaluate contaminants in shipments of diesel fuel that may be suspected to be contaminated. Bacteria test requires 72 hrs. Allow up to 14 business days. *Performed if sample is 100% Biodiesel ^Outsourced to ISO 17025 accredited laboratory [1]Contingent on other testing	Viscosity @ 40°C ICP Spectroscopy Infrared Spectroscopy** Total Ferrous Debris by PqL Bacteria and Fungus Particle Count Oxidation Stability Karl Fischer Water API Gravity Total Acid Number Biodiesel Content Flash Point Closed-Cup Sulfur Content by UVF Simulated Distillation (100%) Cetane Index Cloud/Pour Point Cold Filter Plug Point Bottom Sediment & Water Visual Water/Debris [1]Microscope Membrane Photo and Membrane Patch *^Cold Soak Filtration	ASTM D445 ASTM D5185 ASTM D7418/E2412 SOP 725 SOP 712 ASTM D7596 EN 15751 ASTM D6304b ASTM D1298 ASTM D664 ASTM D7371 ASTM D93 ASTM D5453 ASTM D2887 ASTM D4737(D976*) ASTM D7689/ D7346 ASTM D6371M ASTM D2709 SOP 729 D6217b

** Soot ASTM D7844, Oxidation ASTM D7414, Sulfate ASTM D7415, Phosphate (anti-wear) ASTM D7412, and Nitration ASTM D762

Filter Analysis

Part No.	Description	Testing	Method
FA Filter	Filter Analysis Designed to determine contaminants that are plugging filter. Recommended for troubleshooting reduced filter life. Bacteria test requires 72 hours. Allow 5 business days for processing.	ICP Spectroscopy Total Ferrous Debris by PqL Coarse Metals by RFS Bacteria Microscope Membrane Photo and Membrane Patch	ASTM D5185 SOP 725 SOP 800 SOP 712 SOP 729