



Cummins Fleetguard® FK36000 Portable Fuel Cleanliness Analysis Kit Basic Guide

Basic Guide

- **Sample Collection for the test-** The sample used for the test should be a representative of fuel delivery tank or vehicle or other device under consideration. Example: If the fuel is collected from a delivery tank make sure a sample is collected from the start and end or if collected from a bulk tank, make sure it is from the top and bottom of the bulk tank. If you are doing a 'before' and 'after' comparisons, especially if you have made changes to supply chain, make sure sample is collected at the same points for comparisons.
- The 2 µm Fleetguard® SP72066 media patch is ideal for most applications in assessing the quality of unknown fuels. It is able to capture finer contaminants than most diesel filters.
- When using the 2 µm Fleetguard® SP72066 media patch with either the **funnel adapter or siphon mode, 1 liter of fuel is required for each of the test.**
- The 1 µm Whatman® Np membrane requires an **additional 1 liter** of fuel and must only use the funnel mode since it is not compatible with the siphon function.
- The 1 µm Whatman® membrane in funnel mode is intended for certain applications where fuel quality must be very high in order to achieve long service intervals. *The 1 µm membrane is preferred when analysis of contaminants is required. This requires prior arrangements with an outside laboratory.*
- For either media, **One Liter of fuel is divided into four equal parts of approximately 250 ml each**, with the **time of flow** recorded for each amount as in detailed instructions.
- **For Funnel mode**, each 250 ml is transferred to the funnel and vacuum of 15-20 inHg is used to pass this fuel through the either 2 µm or 1 µm media. Time for each pour is recorded.
- **For Siphon mode**, the 2nd PC bottle is used to collect fuel and the assembly is set as directed to pass 1L fuel through the 2 µm media, the PC bottles are graduated and thus help record time for each part of 250 ml.
- If fuel is clean, little time change will occur between equal amounts. For many fuels, the times should be less than 1 minute. However if first time is under 1 minute followed by the second time of 2 minutes it begins to indicate dirty fuel but it is still recommended that the test be carried out until much longer times are seen to bring resolution to the test.
- If any of the 4 pours reaches 10-15 minutes, the test can be terminated as this would indicate that the fuel is of 'poor' quality. Under such situations, it is not necessary to continue testing.
- The first time may appear slower up to 2-3 minutes due to technique, viscosity, and temperature effects but if the times remain similar or constant (not increasing), it will still indicate a clean fuel.
- Some variability is expected between users; however, precise measurement of milliliters fuel, vacuum level, or seconds of time is not critical. Precision at the level of tens of seconds and up to a minute is all that is required. Users are looking for a significant increase in time of flow with consistent technique if the fuel quality is poor.

Data Interpretation

- 1L of fuel is passed through a single 2 µm media patch as four equal parts of approximately 250 ml each, with the time of flow recorded for each amount.

Patch Test Results using 2 µm media (all times in minutes)						
1 st 250 ml pour	2 nd 250 ml pour	3 rd 250 ml pour	4 th 250 ml pour	Result	Fuel Quality	Approximate ASTM D 2068 FBTN
15				Fail	Poor	8.01-30.00
6-10	10-15			Fail	Poor	5.01-8.00
<6	6-15			Fail	Poor	3.01-5.00
<2	2-5	5-10	10-15	Fail	Poor	2.51-3.00
<2	<2	2-10	10-15	Fail	Poor	2.01-2.50
<2	<2	<2	5-15	Fail	Moderate	1.51-2.00
<2	<2	<2	2-5	Pass	Clean	1.21-1.50
<2	<2	<2	<2	Pass	Clean	1.01-1.20

- Another 1L of fuel divided into 4 parts of 250 ml may be passed through a 1 µm Whatman® Nuclepore membrane with the time of flow recorded for each pour.

Patch Test Results using 1 µm Whatman Nuclepore membrane (all times in minutes)						
1 st 250 ml pour	2 nd 250 ml pour	3 rd 250 ml pour	4 th 250 ml pour	Result	Fuel Quality	Approximate ASTM D 2068 FBTN
>10				Fail	Poor	3.01-5.00
<5	5-15			Fail	Poor	2.51-3.00
<3	3-5	5-15		Fail	Poor	2.01-2.50
<3	<3	3-5	5-15	Fail	Moderate	1.51-2.00
<3	<3	<3	3-5	Pass	Clean	1.21-1.50
<3	<3	<3	<3	Pass	Clean	1.01-1.20



Scan the QR code or visit <http://bit.ly/2i5GwcN> to learn more about this Fleetguard kit.



Filtration

For more information, visit cumminsfiltration.com

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