

SGS IBR JN: 25747A12

Report to: XXXXXXXXXX
 Docs Diesel
 614 E. Edgerton St.
 Bryan, OH 43506

PO Number: Credit Card

Sample Description: Spin-on Filter
 Sample Source: Doc's Diesel
 Sample Received Date: 2nd August 2022

Test Method: SAE J1985 (OCT2013) Fuel Filter- Initial Single-Pass Efficiency Test Method



Signed: *Michael Conrad*
 Michael Conrad
 Senior Test Technician

Authorized by: *Casey L. Frantz*
 Casey L. Frantz
 Liquid Lab Manager

Revision	Editorial or Technical	Description	Approved By	Release Date
		Initial Report Release	cf	5-Aug-22

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Test Method: SAE J1985 (OCT2013) Fuel Filter- Initial Single-Pass Efficiency Test Method

Test Laboratory: SGS IBR Laboratories	Test Date: 4th August 2022
Performed for: Docs Diesel	Location: Bryan, OH 43506
SGS IBR Test No: 25747A12	Contact: XXXXXXXX
Source: Doc's Diesel	Date Received: 2nd August 2022

Filter Element Identification:

Customer Sample ID: Doc's Premium Fuel Filter DGF410	SGS IBR ID: 25747-20
Housing ID: HSG-130	
Filter Orientation: Vertical	Flow Direction: Outside to Inside

Operating Conditions

Test Fluid: <u>Viscor L4264 V96D</u>	Batch: <u>176014</u>
Viscosity at test Temperature (mm ² /s) <u>2.7</u>	Temperature: <u>40-41°C</u>

Test Contaminant: ISO 12103-1 A2 Fine Test Dust	Analysis # 14855F
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Test System:

Flow Rate: 4 lpm	System Volume (L): 7
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Injection System

Injection Parameters	Initial	Final	Average injection parameters		
Injector Gravimetric Level (mg/L)	151	159		Initial	Final
			Injection flow (L/min)	0.12	0.12
Base Upstream Gravimetric level (mg/L)	4.7		Gravimetric level (mg/L)	4.5	4.8

Test Results

Element Integrity

Bubble Point to ISO 2942 ("H2O):	<u>3</u>
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Differential Pressure

Filter Assembly	<u>1.6 psid</u>
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Filtration Ratio and Efficiency

Average Filtration Ratio	2	10	75	100	200	1000
Average Efficiency	50%	90%	98.7%	99%	99.5%	99.9%
Particle Size, µm	<3	<3	4.3	4.5	4.9	17.8

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Performed by: MAC

Data Location: MAC-220803

Notice: These data relate only to the samples tested. This report may be copied only in its entirety.

SGS IBR 11599 Morrissey Rd Grass Lake MI USA 49240 Phone 517-522-8453 Fax 517-522-3695

Performed for: Docs Diesel
 SGS IBR Test No: 25747A12
 Test Date: 4th August 2022

Location: Bryan, OH 43506
 Contact: Max Nihart
 Date Received: 2nd August 2022

Customer Sample ID: Doc's Premium Fuel Filter DGF410
SGS IBR ID: 25747-20

Time MIN	Filter Assembly Differential Pressure psid	Port	Particles / 120 ml at: (micron c)															
			≥3	Beta	≥4	Beta	≥5	Beta	≥8	Beta	≥10	Beta	≥12	Beta	≥15	Beta	≥20	Beta
2	1.6	Upstream	3018792		1449868		699618		180995		74341		38248		22843		9257	
		Downstream	213938	14	21940	66	2896	242	475	381	161	462	71	539	39	586	10	926
		Efficiency	92.91		98.49		99.59		99.74		99.78		99.81		99.83		99.89	
5	1.6	Upstream	3049991		1446564		695201		179917		74447		39326		23285		9752	
		Downstream	223919	14	22721	64	2815	247	434	415	137	543	51	771	25	931	7	1393
		Efficiency	92.66		98.43		99.60		99.76		99.82		99.87		99.89		99.93	
10	1.6	Upstream	3103980		1462623		703504		179529		76497		40616		24451		9964	
		Downstream	229877	14	24018	61	2751	256	388	463	135	567	61	666	34	719	11	906
		Efficiency	92.59		98.36		99.61		99.78		99.82		99.85		99.86		99.89	
20	1.6	Upstream	3238547		1521453		732866		190712		79942		42471		25617		10830	
		Downstream	254125	13	27139	56	2875	255	386	494	120	666	51	833	22	1164	4	2707
		Efficiency	92.15		98.22		99.61		99.80		99.85		99.88		99.91		99.96	
30	1.5	Upstream	3051122		1429534		685308		175889		73900		38125		22543		8992	
		Downstream	258280	12	28379	50	3037	226	330	533	114	648	50	762	29	777	8	1124
		Efficiency	91.53		98.01		99.56		99.81		99.85		99.87		99.87		99.91	
40	1.8	Upstream	3432121		1607578		776980		201700		83881		44803		26641		11536	
		Downstream	306842	11	34825	46	3798	205	379	532	146	575	61	734	33	807	7	1648
		Efficiency	91.06		97.83		99.51		99.81		99.83		99.86		99.88		99.94	
50	1.7	Upstream	3069036		1425541		687216		178575		74889		40121		23726		9876	
		Downstream	295601	10	34406	41	3637	189	328	544	127	590	56	716	26	913	8	1234
		Efficiency	90.37		97.59		99.47		99.82		99.83		99.86		99.89		99.92	
60	1.7	Upstream	3010665		1397080		672075		172974		71850		36552		22048		8975	
		Downstream	306842	10	36860	38	3789	177	371	466	128	561	56	653	33	668	11	816
		Efficiency	89.81		97.36		99.44		99.79		99.82		99.85		99.85		99.88	
Average	1.6	Upstream	3121782		1467530		706596		182536		76218		40033		23894		9898	
		Downstream	261178	12	28786	51	3200	221	386	472	134	571	57	701	30	793	8	1200
		Efficiency	91.63		98.04		99.55		99.79		99.82		99.86		99.87		99.92	

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 pg 3/4 Performed by: MAC Data Location: MAC-220803
 SGS IBR 11599 Morrissey Rd Grass Lake MI USA 49240 Phone 517-522-8453 Fax 517-522-3695

INSTRUMENT LIST - Reported Values

Performed for:	Docs Diesel
SGS IBR Test No:	25747A12
Test Date:	4th August 2022
Data Location:	MAC-220803

Reported Instruments:

Function	Range	Manufacturer	Model#	SGS IBR #	Calibration Due
Differential Pressure	2-20 psid	Omega	PX60600WCDI	ODP-44	October 2022
Test Flow	0.4-30 lpm	Endress + Hauser	63FS08	OF-103	November 2023
Temperature	-40 - 200 °C	Extech	407907	T-32	November 2022

Particle Counters (calibrated per ISO 11171)

Location	Range	Manufacturer	Model#	Serial #	Next Primary Calibration
Upstream Sensor	N/A	Pacific Scientific	8000A	G01101	November 2022
Downstream Sensor	N/A	Pacific Scientific	8000S	E12106	November 2022
Upstream Counter	3-100 µm	Pacific Scientific	LD-400	D6062701	July 2023
Downstream Counter	3-100 µm	Pacific Scientific	LD-400	D6062702	July 2023

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