

SGS IBR JN: 25747A14

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: 25747A14	Contact: XXXXXXXX
Source: Doc's Diesel	Date Received: 2nd August 2022

Filter Element Identification:

Customer Sample ID: Doc's Premium Fuel Filter DFD4625	SGS IBR ID: 25747-23
Housing ID: HC34-9155-AJ, FEWVA FoMoCo	
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)	178	184		Initial	Final
			Injection flow (L/min)	0.12	0.12
Base Upstream Gravimetric level (mg/L)	5.4		Gravimetric level (mg/L)	5.3	5.5

Test Results

Element Integrity

Bubble Point to ISO 2942 ("H ₂ O):	<u>2</u>
Differential Pressure	
Filter Assembly	<u>3.2 psid</u>

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	3.0	3.2	3.5	4.8

pg 2/4 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: 25747A14
 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 DFD4625

SGS IBR ID: 25747-23

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	3.2	Upstream	2843397		1358284		650964		170536		70101		37471		22684		8833	
		Downstream	35376	80	2809	484	854	762	149	1145	22	3186	4	9368	2	11342	0	>8833
		Efficiency	98.76		99.79		99.87		99.91		99.97		99.99		>99.99		>99.9	
5	2.8	Upstream	2785097		1320212		634746		164883		68706		35492		21253		8233	
		Downstream	36485	76	2664	496	664	956	105	1570	16	4294	5	7098	3	7084	1	8233
		Efficiency	98.69		99.80		99.90		99.94		99.98		99.99		99.99		>99.9	
10	2.8	Upstream	2708671		1274897		607150		154583		64731		33708		19946		8197	
		Downstream	34566	78	2338	545	571	1063	73	2118	24	2697	5	6742	3	6649	0	>8197
		Efficiency	98.72		99.82		99.91		99.95		99.96		99.99		99.98		>99.9	
20	2.9	Upstream	3410903		1612702		775408		197195		82857		43902		25970		10406	
		Downstream	47373	72	2714	594	492	1576	62	3181	12	6905	7	6272	2	12985	0	>10406
		Efficiency	98.61		99.83		99.94		99.97		99.99		99.98		>99.99		>99.9	
30	2.9	Upstream	2801439		1299224		623792		159636		66974		35704		20935		8409	
		Downstream	39672	71	2441	532	428	1457	60	2661	21	3189	7	5101	2	10468	1	8409
		Efficiency	98.58		99.81		99.93		99.96		99.97		99.98		>99.99		>99.9	
40	2.9	Upstream	2996373		1407910		675609		171225		72045		37047		22401		9487	
		Downstream	41243	73	2542	554	501	1349	60	2854	13	5542	2	18524	0	>22401	0	>9487
		Efficiency	98.62		99.82		99.93		99.96		99.98		>99.99		>99.99		>99.9	
50	3.0	Upstream	2959962		1376852		661440		167038		70048		35492		20900		8250	
		Downstream	42991	69	2707	509	524	1262	55	3037	15	4670	6	5915	3	6967	1	8250
		Efficiency	98.55		99.80		99.92		99.97		99.98		99.98		99.99		>99.9	
60	3.0	Upstream	2956835		1383742		663578		167233		69624		36570		21871		9045	
		Downstream	42134	70	2884	480	574	1156	94	1779	28	2487	9	4063	3	7290	0	>9045
		Efficiency	98.58		99.79		99.91		99.94		99.96		99.98		99.99		>99.9	
Average	2.9	Upstream	2932835		1379228		661586		169041		70636		36923		21995		8858	
		Downstream	39980	73	2637	523	576	1149	82	2055	19	3742	6	6564	2	9776	0	23620
		Efficiency	98.64		99.81		99.91		99.95		99.97		99.98		99.99		>99.9	

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 pg 3/4 Performed by: MAC Data Location: MAC-220803
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INSTRUMENT LIST - Reported Values

Performed for:	Docs Diesel
SGS IBR Test No:	25747A14
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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