

SGS IBR JN: 25747A9

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 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: 3rd August 2022
Performed for: Docs Diesel	Location: Bryan, OH 43506
SGS IBR Test No: 25747A9	Contact: XXXXXXXX
Source: Doc's Diesel	Date Received: 2nd August 2022

Filter Element Identification:

Customer Sample ID: Doc's Premium Fuel Filter DGF429	SGS IBR ID: 25747-18
Housing ID: GM Mann+Hummel, 84932999	
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)	156	183		Initial	Final
			Injection flow (L/min)	0.12	0.12
Base Upstream Gravimetric level (mg/L)	5.1		Gravimetric level (mg/L)	4.7	5.5

Test Results

Element Integrity

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

Filter Assembly	<u>2.0 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	<3	4.0	17.1	>20

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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: 25747A9
 Test Date: 3rd August 2022

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

Customer Sample ID: Doc's Premium Fuel Filter DGF429
 SGS IBR ID: 25747-18

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	2.0	Upstream	3111718		1539880		768818		207990		85100		44767		28426		13321	
		Downstream	58097	54	15515	99	7096	108	1821	114	686	124	309	145	168	169	50	266
		Efficiency	98.13		98.99		99.08		99.12		99.19		99.31		99.41		99.62	
5	2.1	Upstream	3376259		1651286		821005		219897		90135		47629		28973		13656	
		Downstream	61336	55	15747	105	7125	115	1867	118	668	135	303	157	168	172	59	231
		Efficiency	98.18		99.05		99.13		99.15		99.26		99.36		99.42		99.57	
10	2.1	Upstream	3045115		1462235		731683		198220		80648		42930		26765		12225	
		Downstream	56413	54	14371	102	6513	112	1699	117	573	141	256	168	132	203	34	360
		Efficiency	98.15		99.02		99.11		99.14		99.29		99.40		99.51		99.72	
20	2.2	Upstream	3114810		1503539		751575		204792		81903		43389		27595		13338	
		Downstream	59559	52	14655	103	6592	114	1686	121	630	130	306	142	163	169	59	226
		Efficiency	98.09		99.03		99.12		99.18		99.23		99.29		99.41		99.56	
30	2.0	Upstream	3274287		1574913		785813		210710		86125		46622		29274		13939	
		Downstream	63667	51	15469	102	6970	113	1776	119	643	134	303	154	173	169	58	240
		Efficiency	98.06		99.02		99.11		99.16		99.25		99.35		99.41		99.58	
40	2.0	Upstream	3298031		1579630		785813		209262		85948		46022		28178		13285	
		Downstream	64976	51	15530	102	6883	114	1780	118	622	138	288	160	147	192	61	218
		Efficiency	98.03		99.02		99.12		99.15		99.28		99.37		99.48		99.54	
50	1.9	Upstream	3307695		1588993		792067		216788		86514		45191		28479		13285	
		Downstream	65210	51	15525	102	6939	114	1794	121	636	136	293	154	165	173	49	271
		Efficiency	98.03		99.02		99.12		99.17		99.26		99.35		99.42		99.63	
60	1.9	Upstream	3242946		1529368		751787		194333		78988		42753		26783		12102	
		Downstream	67550	48	16246	94	7247	104	1853	105	670	118	310	138	182	147	61	198
		Efficiency	97.92		98.94		99.04		99.05		99.15		99.27		99.32		99.50	
Average	2.0	Upstream	3221358		1553730		773570		207749		84420		44913		28059		13144	
		Downstream	62101	52	15382	101	6921	112	1785	116	641	132	296	152	162	173	54	244
		Efficiency	98.07		99.01		99.11		99.14		99.24		99.34		99.42		99.59	

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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:	25747A9
Test Date:	3rd 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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