



BIODEIESEL MANUFACTURERS AND RETAILERS

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RE: MICFIL FILTRATION TECHNOLOGY

Greentech Biofuels endeavours to be recognised locally as the leading manufacturer of exceptional quality biodiesel in the hearts of consumers while saving them money and satisfying their need for sustainability. The business takes pride in service excellence and has an obsession with quality and innovation to meet the changing needs of the market.

With regards to the changing needs of the market, motor vehicle manufacturers have been advancing the fuel injection systems of modern vehicles in an attempt to reduce emissions. As a result, modern fuel injection systems require a higher standard of fuel free from particulate and foreign materials.

In order to ensure the suitability of Greentech Biofuels biodiesel for use in all vehicles the business has installed a Micfil filtration system comprising of two aluminium 150 Micfil filters. Prior to installation a sample of biodiesel was drawn from the filtration system that was in place at the time. After installation of the Micfil filtration system another sample was drawn. Both samples were drawn from the same homogenous batch of biodiesel.

The test results indicated that only the sample of biodiesel taken from the Micfil filtration system met the SANS 1935:2004 specifications as per the tests conducted by Wear Check, please see Appendix A (Micfil) and B (non-Micfil) for further information. The SANS 1935:2004 are the South African National Standards for biodiesel and are in line with American and European standards. The Micfil filtration system was extremely effective in improving the water content and total contamination values of the test samples.


Sincerely,

Hayden Hill

Managing member



ANNEXURE A: MICFIL FILTRATION SYSTEM




WEARCHECK
AFRICA

KWAZULU-NATAL
P O Box 15108
Westmead 3608
Tel: 031 700 5460
Fax: 031 700 5471

GAUTENG
P O Box 284
Isando 1600
Tel: 011 392 6322
Fax: 011 392 6340

BIODIESEL
Fuel Analysis Report



SANS 17025:2005

PASS

MR L MARSHALL [LEON]
8 VAN WYK ROAD
WESTERING
6025

Company Name: Wearcheck Africa - PE
Customer Code: 7WEAPE | **Site:** GREENTECH_BIOFUELS
Equipment Name: GREENTECH_BIOFUELS_BIODIESEL->FUEL
Chassis/Serial:
Registration:
Eq Make/Model: MICFIL
Cmp Make/Model:
Job Number: BATCH 47
Brand/Grade:
Container: WEARCHECK | **Sample Volume:** 490

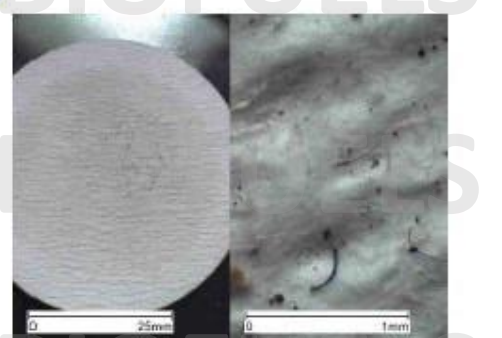
Sampled Date: 01/08/2015
Received Date: 01/09/2015
Reported Date: 03/09/2015
Test Date: 03/09/2015

Tests	Sample Number: BS50738	SANS 1935 SPECIFICATIONS		
	RESULTS	UNITS	LIMITS	COMMENTS
Density @15°C (ASTM D7042)*	0.8661	g/mL	0.86-0.9	PASS
Viscosity@40°C (ASTM D7042)*	4.9	cSt	3.5- 5	PASS
Flashpoint (ASTM D93)*	175	°C	120 min	PASS
Water Content (ASTM D6304)	0.041	%	0.05 max	PASS
Total Acid Number	0.32	mgKOH/g	0.5 max	PASS
Total Contamination (IP 440)*	13.8	mg/Kg	24 max	PASS
Sulphur (ASTM D4294)*	9	ppm	10 max	PASS
Sulphur	0.0009	%		

* Not An Accredited SANAS Method

Visual Inspections / Additional Tests			
UNIT	RESULT	COMMENTS	
Free Water	None Observed	PASS	Iron : Aluminium : Magnesium : Zinc : Lead :
Colour	Dark Straw Yellow		Silicon : Manganese : Sodium : Vanadium :
Appearance	Clear		
Bacteria Content	Not Requested		
Biodiesel	%	90.57	

Distillation And Graph



Diagnosis

1.) s/n:BS50738 on 01/08/2015 SMR:0HRS
The sample provided conforms with SANS 1935 specifications with respect to the tests carried out.

L. Govender

Technical Signatory:Loshini Govender

Issued subject to Standard Conditions (available on request) . NOTE: The results relate only to the sample tested - the opinions and interpretation expressed are outside the scope of the accreditation. Uncertainty of the methods are available on request. Where a test method is quoted, it is taken to mean that the test carried out is closely based on, but may not conform exactly to, the quoted method.
The test report shall not be reproduced except in full, without written approval of the laboratory.

WEARCHECK IS AN ISO 9001:2008 / ISO 14001:2004 / SANS 17025:2005 REGISTERED COMPANY

ANNEXURE B: NON-MICFIL FILTRATION SYSTEM



KWAZULU-NATAL
 P O Box 15104
 Westmead 3608
 Tel: 031 7005460
 Fax: 031 7005471

GAUTENG
 P O Box 284
 Isando 1600
 Tel: 011 392 6322
 Fax: 011 392 6340

BIODIESEL
Fuel Analysis Report



FAIL
 Hayden

Company Name: Wearcheck Africa - Sundry Fuels - Pinetown
Customer Code: FSUNDY | **Site:** GREENTECH_BIOFUELS
Equipment Name: GREENTECH_BIOFUELS_BULK_TANK->FUEL
Chassis/Serial:
Registration:
Eq Make/Model: DONALDSON
Cmp Make/Model:
Job Number: BATCH_47
Brand/Grade:
Container: WEARCHECK | **Sample Volume:** 490

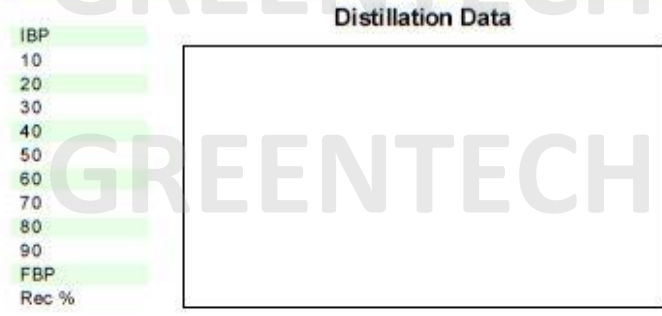
Sampled Date: 01/08/2015
Received Date: 01/09/2015
Reported Date: 03/09/2015
Test Date: 03/09/2015

Tests	Sample Number: BS50739	SANS 1935 SPECIFICATIONS		
	RESULTS	UNITS	LIMITS	COMMENTS
Density @15°C (ASTM D7042)*	0.8861	g/mL	0.86-0.9	PASS
Viscosity@40°C (ASTM D7042)*	4.9	cSt	3.5-5	PASS
Flashpoint (ASTM D93)*	175	°C	120 min	PASS
Water Content (ASTM D6304)	0.063	%	0.05 max	FAIL
Total Acid Number	0.29	mgKOH/g	0.5 max	PASS
Total Contamination (IP 440)*	56.9	mg/Kg	24 max	FAIL
Sulphur (ASTM D4294)*	9	ppm	10 max	PASS
Sulphur	0.0009	%		

* Not An Accredited SANAS Method

Visual Inspections / Additional Tests				
UNIT	RESULT	COMMENTS	ELEMENTAL ANALYSIS	
Free Water	None Observed	PASS	Iron :	Silicon :
Colour	Dark Straw Yellow		Aluminium :	Manganese :
Appearance	Clear		Magnesium :	Sodium :
Bacteria Content	Not Requested		Zinc :	Vanadium :
Biodiesel	%	90.22	Lead :	

Distillation And Graph



Diagnosis

1.) s/n:BS50739 on 01/08/2015 SMR:0HRS
 The sample provided does not conform with SANS 1935 specifications with respect to the tests carried out. Water content by Karl Fischer is unacceptably high. Total contamination mass exceeds SANS limits.

L. Govender
 Technical Signatory:Loshini Govender

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 The test report shall not be reproduced except in full, without written approval of the laboratory.

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