

Report of Analysis

Laboratory Report ID: 2978976
Lab Reference Number: 2018-CHGO-000746

Client: CHS Inc. Contact: Patrick Ball Address: 101 Patriot Way Annawan, IL 61234 United States of America	Customer Reference: None
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Sample ID: 2018-CHGO-000746-004 Sample Designated As: Biodiesel Taken From: Annawan, IL At: Chicago, IL, USA, Romeoville, Illinois, United States Representing: Tank 4 - Annawan Submitted Sample	Date Taken: 20-Feb-2018 Date Submitted: 21-Feb-2018 Date Tested: 24-Feb-2018 Drawn By: Client
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Method	Test	Result	Units
EN 14538	Calcium Content	<0.1	mg/kg
	Magnesium Content	0.427	mg/kg
	Sum (Ca and Mg)	< 1.0	mg/kg
EN 14538	Potassium Content	0.282	mg/kg
	Sodium Content	<0.1	mg/kg
	Sum (K and Na)	< 1.0	mg/kg
ASTM D93	Procedure Used	C	
	Corrected Flash Point	141.0	°C
ASTM D2709	Sediment and Water	< 0.01	Vol %
ASTM D445	Kinematic Viscosity @ 104 °F/ 40 °C	4.166	mm ² /s
ASTM D874	Sulfated Ash	< 0.005	Wt %
ASTM D5453	Sulfur Content	< 1.0	mg/kg
ASTM D130	Biodiesel-Cu Corrosion 50°C (122°F)/3 hr	1a	
ASTM D613	Cetane Number	52.6	
ASTM D2500	Cloud Point	-1	°C
	Cloud Point	30.2	°F
ASTM D4530 MOD	Micro Method Carbon Residue (6751)	< 0.001	Wt %
ASTM D664	Procedure Used	B	
	Acid Number	0.30	mg KOH/g
ASTM D7501	Volume Filtered	300	ml
	B100 CSFT Time	83	sec
ASTM D6584	Free Glycerin	0.017	Wt %
	Monoglycerides	0.044	Wt %
	¹ Diglycerides	0.030	Wt %
	¹ Triglycerides	0.000	Wt %
	Total Glycerin	0.033	Wt %
ASTM D4951	Phosphorus	<0.0000100	mass %
ASTM D1160	IBP	341	°C
	AET @ 5% Recovery	351	°C
	AET @ 10% Recovery	351	°C



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Method	Test	Result	Units
ASTM D1160	AET @ 20% Recovery	352	°C
	AET @ 30% Recovery	352	°C
	AET @ 40% Recovery	353	°C
	AET @ 50% Recovery	353	°C
	AET @ 60% Recovery	353	°C
	AET @ 70% Recovery	354	°C
	AET @ 80% Recovery	354	°C
	AET @ 90% Recovery	356	°C
	AET @ 95% Recovery	358	°C
	FBP	419	°C
	% Recovered	99.6	%
	% Loss	0.0	%
	% Residue	0.4	%
	Cold Trap Volume	0.0	ml
EN 15751	Oxidation Stability	5.2	h
	Test Temperature	110	°C

*** Out of Scope of the Method**

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This final report has been reviewed for accuracy, completeness, and comparison against specifications when available. The reported results are only representative of the samples submitted for testing. This report shall not be reproduced except in full without written approval of the laboratory.

Signed: Margo Bassett
Margo Bassett, Assistant Laboratory Manager

Date: 2/26/2018 9:51 AM

Reviewed By: Margo Bassett
Intertek

Date: 26-Feb-2018

