



SUNBIRD BIOENERGY
SIERRA LEONE LTD.
Mabilafu Makeni
Makeni
SIERRA LEONE

ANALYTICAL REPORT SR-6002689.01.A01

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grade	ETHANOL
sample 001	Sample received from client Sample packed in glass, quantity approx. 5x 0.L Sample marked as T20118 / Extra neutral alcohol / 24.02.20
date received	24.03.2020

Gaschromatographic analysis
(OGC-TG-ETOH-02)

001

- Acetal, mg/kg	<5
- Acetone, mg/kg	<5
- Aldehyde as acetaldehyde, mg/kg	<5
- Benzene, mg/kg	<5
- C3 and higher alcohols, mg/kg	<5
- i-Amyl alcohol, mg/kg	<5
- i-Butanol, mg/kg	<5
- i-Propanol, mg/kg	<5
- Methanol, mg/kg	<5
- Esters as ethyl acetate, mg/kg	<5
- Butyl acetate, mg/kg	<5
- i-Amyl acetate, mg/kg	<5
- Propyl acetate, mg/kg	<5
- n-Propanol, mg/kg	<5
- Diacetyl, mg/kg	<5

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001

<u>Appearance</u> (SGS SPI 402)	bright and clear liquid
<u>Alcoholic strength, % vol</u> (OIML-73)	96.18
<u>Permanganate time, minutes</u> (ASTM D 1363)	50
<u>pHe</u> (EN 15490)	7.44
<u>Density at 20°C, kg/L</u> (ASTM D 4052)	0.8067
<u>Colour, Platinum-Cobalt</u> (ASTM D 1209)	<5
<u>Acidity as acetic acid, % wt</u> (ASTM D 1613)	0.0008
<u>Dry extract, mg/100 mL</u> (ASTM D 1353)	<1
<u>Nonvolatile matter, mg/1000 mL</u> (ASTM D 1353)	<10
<u>Water Miscibility</u> (ASTM D 1722)	pass
<u>Volatile nitrogen bases as N, mg/100 mL AA</u> (PB L 90)	<0.10
<u>UV analysis (10 mm cell)</u> (SGS SPI 094/A)	
- Absorbance at 220 nm	0.181
- Absorbance at 230 nm	0.093
- Absorbance at 240 nm	0.042
- Absorbance at 250 nm	0.017
- Absorbance at 260 nm	0.007
- Absorbance at 270 nm	0.003
- Absorbance at 340 nm	0.000
- UV curve	smooth

ANALYTICAL REPORT SR-6002689.01.A01**P. 3/3**Furfural
(PB L 90)001
passWater content, % wt
(ASTM D 1364)

5.87

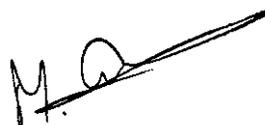
Sulphur, mg/kg
(ASTM D 7183)

<0.5

Samples will be retained for 3 months unless instructed otherwise.

End of analytical results

Spijkenisse, the 27th March 2020
SGS Nederland B.V. - Oil, Gas and Chemicals



M. Audier
Laboratory Manager

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