



PANAIR LABORATORY, INC.

4301 N.W. 72 AVE. MIAMI, FL 33166 (305) 594-9055

LABORATORY NO.

3195F-1

AWB NO.

378-05132982

FUEL OIL ANALYSIS

ORIGIN Grand Cayman	FUEL TYPE Diesel	CUSTOMER CIG Petroleum
DATE SAMPLED 11/16/16	RECEIVED AT LAB 11/18/16	TEST COMPLETED 11/23/16
REFINER --	REFINER'S DESIGNATION ULS Diesel #2	SAMPLED FROM S11

This report relates to the sample tested and does not guarantee the bulk of the material to be of equal

DISTILLATION (D 86)

APPEARANCE, VISUAL

Clear

ASH, % WGT. (D 482)

ASPHALTENES, % WGT. (IP 143)

CARBON RESIDUE CONRADSON, % WGT. (D 189)

CARBON RESIDUE RAMSBOTTOM (ON 10% B), WGT. (D524)

CETANE INDEX (D 976)

50.5

CETANE NUMBER (D 613)

CLOUD POINT F/C (D 2500)

COPPER CORROSION (3 HRS 122 F/ 212 F) (D 130)

COLOR, ASTM (D 1500)

FLASH POINT PENSKY-MARTENS F /C (D 93)

GROSS CALORIFIC VALUE, BTU/LB (D240)

NET CALORIFIC VALUE (CALCULATED)

36.28

GRAVITY, API @ 60 F (D 4052)

0.8433

SPECIFIC GRAVITY @ 60 F/ 60 F

DENSITY @ 15 C

0.8429

POUNDS PER GALLON @ 60 F

7.00

COMPATABILITY SPOT RATING (D4740)

CCAI CALCULATION

FOUR POINT F /C(D 97)

SEDIMENT BY EXTRACTION, % MASS (D 473)

SEDIMENT BY HOT FILTRATION, % MASS (D4870)

SULFUR, % WGT., XRAY (D 4294)

7

SULFUR, mg / Kg (ppm), XRAY, (D 2622)

VISCOSITY, KINEMATIC @ 50 C mm2/sec. (D 445)

2.751

VISCOSITY, KINEMATIC @ 40C mm2/sec. (D 445)

WATER BY DISTILLATION, % WGT. (D 95)

WATER AND SEDIMENT, % VOL. (D 1796)

0

WATER AND SEDIMENT, % VOL (D 2709)

NITROGEN, % WGT.

HYDROGEN, %, WGT.

% RECOVERY	C
IBP	177.0
10	215.6
20	232.6
30	247.6
40	260.0
50	271.3
60	283.1
70	296.0
80	310.2
90	329.9
95	346.2
END POINT	360.1
RECOVERY	98.6 %
RESIDUE	1.2 %
LOSS	0.2 %

ELEMENTS BY ATOMIC ABSORPTION, PPM

ALUMINUM (Al)	_____
CALCIUM (Ca)	_____
CHROMIUM (Cr)	_____
COPPER (Cu)	_____
IRON (Fe)	_____
LEAD (Pb)	_____
MAGNESIUM (Mg)	_____
MANGANESE (Mn)	_____
NICKEL (Ni)	_____
POTASSIUM (K)	_____
SILICON (Si)	_____
SODIUM (Na)	_____
Sodium+ Potassium	_____
VANADIUM (V)	_____
ZINC (Zn)	_____
LITHIUM (Li)	_____
PHOSPHORUS (P)	_____ (by ICP method)

ND = NONE DETECTED

CARL E. JOHNSON, PRESIDENT

PAL-0206, Issued 10-17-14, Revision 1



PANAIR LABORATORY, INC.

4301 N.W.72 AVE., MIAMI, FL 33166 (305) 594-9055 FAX (305) 477-9137

GASOLINE ANALYSIS REPORT

LABORATORY NO. 13001G-1
AWB NO. 378-05132982
CUSTOMER CIG Petroleum Inspectors
TEST COMPLETED 11-23-16
SAMPLED FROM S11

ORIGIN Grand Cayman	FUEL TYPE Mogas	CUSTOMER CIG Petroleum Inspectors
DATE SAMPLED 11-16-16	RECEIVED AT LAB 11-18-16	TEST COMPLETED 11-23-16
REFINER -----	REFINER'S DESIGNATION Mogas	SAMPLED FROM S11

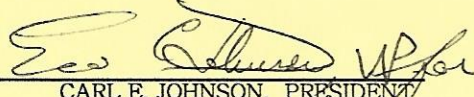
THIS REPORT RELATES ONLY TO THE SAMPLE TESTED AND DOES NOT GUARANTEE THE BULK OF THE MATERIAL TO BE OF EQUAL QUALITY.

ASTM (D 86)

API GRAVITY @ 60 (D4052)	<u>55.25</u>
SPECIFIC GRAVITY @ 60 F (CONV.)	<u>0.7577</u>
APPEARANCE (D4176)	_____
OLEFINS, % VOL. (D 1319)	_____
AROMATICS, % VOL. (D1319)	_____
COLOR VISUAL	_____
CORROSION, COPPER STRIP (D 130)	<u>1a</u>
DOCTOR TEST (IP 30)	_____
EXISTENT GUM, MG/100 ML (D 381/ IP 131)	<u>9</u>
WASHED GUM, MG/100 ML (D 381)	<u>< 1</u>
FREEZE POINT, C (D 2386)	_____
VAPOR LOCK INDEX (D323)	_____
DRIVEABILITY (D4814)	_____
OCTANE NUMBER, MOTOR (D 2700)	<u>85.8</u>
OCTANE SENSITIVITY (RON - MON)	_____
OCTANE NUMBER, RESEARCH (D 2699)	<u>96.8</u>
ANTI-KNOCK INDEX (R+ M/2)	<u>91.3</u>
OXIDATION STABILITY @ 100 C, MINUTES (D 525)	_____
PARTICULATE MATTER, MG/L, (D 5452)	<u>0.56</u>
FILTER MEMBRANE COLOR RATING (D 5452)	<u>B-2</u>
THRUPUT, LITERS	<u>0.875</u>
PHOSPHOROUS CONTENT, MG/L (D 3231)	_____
POTENTIAL GUM, MG/100 ML (D 873)	_____
MANGANESE, mg/L (D 3831)	<u>13</u>
SULFUR, mg / kg (ppm) (D 2622)	_____
TETRAETHYLLEAD CONTENT, g/U.S. gal. (D 3237/ IP 362)	_____
LEAD CONTENT g/Liter (D3237)	_____
SILVER CORROSION (D4814 annex)	_____
VAPOR PRESSURE (LB REID/kPa) (D 5191)	<u>8.56 / 58.9</u>
BENZENE, % VOL. (D3606)	_____

DISTILLATION	C
IBP	<u>33.2</u>
10% Evaporated	<u>57.0</u>
50% Evap.	<u>112.9</u>
90% Evap.	<u>164.6</u>
END POINT	<u>209.4</u>
RECOVERY	<u>98.8</u> %
RESIDUE	<u>1.0</u> %
LOSS	<u>0.2</u> %

Product complies with ASTM D4814 for Mogas test results shown if box is checked for Vapor Pressure Distillation Classes A and AA.


 CARL E. JOHNSON, PRESIDENT
 PAL-0238 Issued 3-3-16, Revision 2