



PANAIR LABORATORY, INC.

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

GASOLINE ANALYSIS REPORT

LABORATORY NO.

12861G-1

AWB NO.

001/0685 8832

CUSTOMER

JR Industrial Services

TEST COMPLETED

10/23/15

SAMPLED FROM

SO1 Service Station

ORIGIN Grand Cayman	FUEL TYPE Mogas	CUSTOMER JR Industrial Services
DATE SAMPLED 10/15/15	RECEIVED AT LAB 10/21/15	TEST COMPLETED 10/23/15
REFINER	REFINER'S DESIGNATION Regular Gas (5000)	SAMPLED FROM SO1 Service Station

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)

57.25

SPECIFIC GRAVITY @ 60 F (CONV.)

0.7496

APPEARANCE (D4176)

Clear

OLEFINS, % VOL. (D 1319)

ODOR

COLOR VISUAL

CORROSION, COPPER STRIP (D 130)

1a

DOCTOR TEST (IP 30)

10

EXISTENT GUM, MG/100 ML (D 381/ IP 131)

<1

WASHED GUM, MG/100 ML (D 381)

FREEZE POINT, C (D 2386)

VAPOR LOCK INDEX (D323)

DRIVEABILITY (D4814)

OCTANE NUMBER, MOTOR (D 2700)

85.2

OCTANE SENSITIVITY (RON - MON)

OCTANE NUMBER, RESEARCH (D 2699)

95.7

ANTI-KNOCK INDEX (R+ M/2)

90.5

OXIDATION STABILITY @ 100 C, MINUTES (D 525)

0.29

PARTICULATE MATTER, MG/L (D 5452)

FILTER MEMBRANE COLOR RATING (D 5452)

B-2

THRUPUT, LITERS

1.75

PHOSPHOROUS CONTENT, MG/L (D 3231)

POTENTIAL GUM, MG/100 ML (D 873)

MANGANESE, mg/L (D 3831)

<0.1

SULFUR mg / kg. (D 2622)

TETRAETHYLLLEAD CONTENT, mg/L (D 3237/ IP 362)

LEAD CONTENT G/LITER (CONV.)

SILVER CORROSION (D4814 annex)

8.77/60.4

VAPOR PRESSURE (LB REID/kPa) (D 5191)

DISTILLATION	C
IBP	33.9
10% Evaporated	539
50% Evap.	107.0
90% Evap.	159.5
END POINT	199.8
RECOVERY	98.2 %
RESIDUE	0.9 %
LOSS	0.9 %

X

Product complies with ASTM D4814 for Mogas test results shown if box is checked

for Classes A through D.

Carl E. Johnson
CARL E. JOHNSON, PRESIDENT
PAL-0237 Issued 11-11-11, Revision O

EM 10/30/15



PANAIR LABORATORY, INC.

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

FUEL OIL ANALYSIS

ORIGIN Grand Cayman	FUEL TYPE ULSD	LABORATORY NO. 2832F-1
DATE SAMPLED 10/15/15	RECEIVED AT LAB 10/21/15	AWB NO. 001-06858832
REFINER	REFINER'S DESIGNATION Ultra Low Sulfur Diesel	CUSTOMER JR Industrial Services
		TEST COMPLETED 11/6/15
		SAMPLED FROM S02

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 & Bright
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)	50.0
CETANE NUMBER (D 613)	50.8
CLOUD POINT F/C °(D 2500)	
COPPER CORROSION (3 HRS 122 F/ 212 F) (D 130)	
COLOR, ASTM (D 1500)	
FLASH POINT PENSKEY-MARTENS F /C (D 93)	
GROSS CALORIFIC VALUE, BTU/LB (D240)	
NET CALORIFIC VALUE (CALCULATED)	
GRAVITY, API @ 60 F (D 4052)	36.20
SPECIFIC GRAVITY @ 60 F/ 60 F	0.8438
DENSITY @ 15 C	0.8433
POUNDS PER GALLON @ 60 F	7.01
COMPATABILITY SPOT RATING (D4740)	
CCAI CALCULATION	
POUR POINT F /C(D 97)	
SEDIMENT BY EXTRACTION, % MASS (D 473)	
SEDIMENT BY HOT FILTRATION, % MASS (D4870)	
SULFUR, % WGT., XRAY (D 4294)	9 (ppm)
SULFUR, mg / Kg (ppm), XRAY, (D 2622)	
VISCOSITY, KINEMATIC @ 50 C mm2/sec. (D 445)	2.194
VISCOSITY, KINEMATIC @ 40C mm2/sec. (D 445)	
WATER BY DISTILLATION, % WGT. (D 95)	
WATER AND SEDIMENT, % VOL. (D 1796)	
WATER AND SEDIMENT, % VOL (D 2709)	<0.005
NITROGEN, % WGT.	
HYDROGEN, %, WGT.	

% RECOVERY	C
IBP	170.9
10	215.3
20	231.2
30	244.2
40	255.7
50	266.2
60	277.0
70	288.7
80	301.7
90	321.2
95	340.2
END POINT	352.8
RECOVERY	98.2 %
RESIDUE	0.8 %
LOSS	1.0 %

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	

Suspended Sediment mg/100 ml. (D6217)

0.65

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.

12859G-1

AWB NO.

001 0685 8832

ORIGIN Grand Cayman	FUEL TYPE Mogas	CUSTOMER JR Industrial Service
DATE SAMPLED 10/15/15	RECEIVED AT LAB 10/21/15	TEST COMPLETED 10/23/15
REFINER	REFINER'S DESIGNATION Premium Gas 8000	SAMPLED FROM SO3 Service Station

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

API GRAVITY @ 60 (D4052)

57.93

SPECIFIC GRAVITY @ 60 F (CONV.)

0.7470

APPEARANCE (D4176)

Clear

OLEFINS, % VOL. (D 1319)

ODOR

COLOR VISUAL

CORROSION, COPPER STRIP (D 130)

1a

DOCTOR TEST (IP 30)

12

EXISTENT GUM, MG/100 ML (D 381/ IP 131)

<1

WASHED GUM, MG/100 ML (D 381)

FREEZE POINT, C (D 2386)

VAPOR LOCK INDEX (D323)

DRIVEABILITY (D4814)

OCTANE NUMBER, MOTOR (D 2700)

85.7

OCTANE SENSITIVITY (RON - MON)

96.6

OCTANE NUMBER, RESEARCH (D 2699)

91.2

ANTI-KNOCK INDEX (R+ M/2)

OXIDATION STABILITY @ 100 C, MINUTES (D 525)

0.34

PARTICULATE MATTER, MG/L, (D 5452)

B-2

FILTER MEMBRANE COLOR RATING (D 5452)

1.50

THRUPUT, LITERS

PHOSPHOROUS CONTENT, MG/L (D 3231)

POTENTIAL GUM, MG/100 ML (D 873)

16.0

MANGANESE, mg/L (D 3831)

SULFUR mg / kg. (D 2622)

TETRAETHYLLLEAD CONTENT, mg/L (D 3237/ IP 362)

LEAD CONTENT G/LITER (CONV.)

8.67/59.7

SILVER CORROSION (D4814 annex)

VAPOR PRESSURE (LB REID/kPa) (D 5191)

ASTM (D 86)

DISTILLATION	C
IBP	34.7
10% Evaporated	53.2
50% Evap.	103.2
90% Evap.	158.8
END POINT	200.2
RECOVERY	98.1 %
RESIDUE	0.9 %
LOSS	1.0 %

X

Product complies with ASTMD4814 for Mogas test results shown if box is checked

for Classes A through D.

Carl E. Johnson
CARL E. JOHNSON, PRESIDENT

PAL-0237 Issued 11-11-11, Revision O