

## To Whom It May Concern

This copy is being provided for courtesy purposes only, and does not give any person or company other than our named client a right to rely on these results.  
No warranties, express or implied, including the warranty of due diligence and care mentioned elsewhere, shall extend to any party other than such named client.



## Certificate of Quality

Report number : **10901/00013561.1/L/18** Date of sampling : 2018-08-17  
Main Object : VULCANELLO M Place of sampling : Enemed Installation  
Report Date : 2018-08-23 Date received : 2018-08-17  
Date of issue : 2018-08-23 Date completed : 2018-08-22  
Sample object : VULCANELLO M Sample number : 7016240  
Sample type : Sampled  
Sample submitted as : Unleaded Gasoline  
Marked : Vessel VULCANELLO M Multiple Tank Composite On Arrival

NAME	METHOD	UNIT	SPECS		RESULT
			Min	Max	
Appearance	Visual	-		Clear & Bright	Clear & Bright
Benzene Q	EN 238	vol %		1.0	0.6
Copper Strip Corrosion (3 hrs / 50 °C) Q	ASTM D 130	-		1	1A
Density at 15 °C Q	ASTM D 4052	kg/L	0.729	0.775	0.7432
Gum Existent	ASTM D 381	mg/100ml		5	1.6
Oxidation Stability	ASTM D 525	min	360		Above 360
Lead (Pb) Q	ASTM D 3237				
Lead (Pb)		g/l		0.005	Below 0.001
Motor Octane Number (MON)	ASTM D 2700	-	85.0		85.3
Distillation	ASTM D 86				
Initial boiling point		°C	Report		31.5
10% Recovered		°C	Report		57.2
50% Recovered		°C	Report		102.6
90% Recovered		°C	Report		150.2
Final boiling point		°C		210.0	182.5
Residue		vol %		2.0	0.9
Evaporated at 70 °C		vol %	22.0	50.0	23.7
Evaporated at 100 °C		vol %	46.0	71.0	49
Evaporated at 150 °C		vol %	75.0		90.8
R.V.P. at 100 deg. C - DVPE Q	ASTM D 5191	kPa	50	80	55.0
Research Octane Number (RON)	ASTM D 2699	-	95.0		95.5
Sulphur Q	ASTM D 2622	mg/kg		10	6.6
FIA (hydrocarbon types)	ASTM D 1319				
Aromatics		vol %		35.0	32.7
Olefins		vol %		18.0	13.0
Oxygenates	EN 13132				
Methanol		vol %		3	0.1
Ethanol		vol %		5	0.1
iso-Propanol		vol %	Report		0.1
iso-Butanol		vol %	Report		0.1
tert-Butanol		vol %	Report		0.1

Uncertainties, available on request, apply in the evaluation of the test results. Where available and for convenience purposes, the tested sample has been checked for compliance with supplied specifications, without accepting any liability. In case of dispute or concern, we refer to the interpretation of test results as defined in ASTM D3244, IP 367, ISO 4259 or GOST 33701.

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NAME	METHOD	UNIT	SPECS		RESULT
			Min	Max	
Ethers (C5 or more)		vol %	Report		0.1
Other oxygenates		vol %	Report		0.1
Total organically bound oxygen		mass %		2.7	0.01
Manganese (Mn)	ASTM D 3831	mg/l		2	1
Color	Visual	-			Yellow

### Lab comments:

The results are referred to the tested sample.

Q Analysis accredited by NAB-MALTA. Testing laboratory Reg No 007.

All tests are reported according to the latest method version available.

If required, estimated expanded uncertainty U with coverage factor=2 corresponding to level of probability of about 95%, can be provided.

Sampling performed according to ASTM D5842-14.

*~ Due to restrictions enforced by terminal/refinery/vessels management and/or local laws and regulations, samples of concerned object have been taken via a closed/restricted sampling system.*

*Due to operational limitations of closed/restricted sampling systems, when tested, the samples taken may not represent the actual cargo quality.*

Signed by: Clifton Friggieri - Laboratory Manager  
Issued by: Saybolt Malta Ltd  
Place and date of issue: Kalafrana - 2018-08-23

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