



Certificate of Analysis

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**BUREAU
VERITAS**

Nomination ID: USPAS-21-14454

Asset :	Submitted	Submitted by :	SulNOx Group PLC
Product :	Gasoline	Date Sampled :	29-Oct-2021
Client Reference :	OP2021MSH3910	Date Received :	29-Oct-2021
Job Location :	Submitted - Pasadena	Date Analyzed :	02-Nov-2021
TOCM Job ID :	USPAS-21-14454	Date Reported :	03-Nov-2021

Submitted Pump Gasoline dosed w/ SulNOxEco Petrol Fuel Conditioner				
USPAS-21-14454-002 ¹				
Method	Test	Result	Specification	Condition
ASTM D5191, EPA Calc.	DVPE, psi	11.49	11.5 psi Max	Spec Met
	DVPE, kPa	79.2		
	Hazy	No	No	Spec Met
ASTM D86	IBP, °F	84.9		
	5% Evaporated, °F	107.1		
	10% Evaporated, °F	116.8	140 °F Max	Spec Met
	20% Evaporated, °F	130.6		
	30% Evaporated, °F	142.7		
	40% Evaporated, °F	151.3		
	50% Evaporated, °F	171.0	170 - 240 °F	Spec Met
	60% Evaporated, °F	222.1		
	70% Evaporated, °F	246.0		
	80% Evaporated, °F	274.6		
	90% Evaporated, °F	314.1	365 °F Max	Spec Met
	95% Evaporated, °F	352.6		
	Endpoint, °F	406.9	437 °F Max	Spec Met
	Recovery, % (V/V)	97.2		
Residue, % (V/V)	1.1	2 % (V/V) Max	Spec Met	
Loss, % (V/V)	1.7			
ASTM D4814	Driveability Index	1027	1230 Max	Spec Met
	Vapor-Liquid ratio, °F	120.3	116 °F Min	Spec Met
	Antiknock Index	87.2	87 Min	Spec Met
ASTM D3237	Lead Content, g/gal	<0.010	0.05 g/gal Max	Spec Met
	Lead Content, mg/L	<2.5	13 mg/L Max	Spec Met
ASTM D2622	Total Sulfur Content, mg/kg	15.2	80 mg/kg Max	Spec Met
	Total Sulfur Content, % (m/m)	0.00152	0.008 % (m/m) Max	Spec Met
ASTM D3831	Manganese Content, mg/L	<0.25	0.25 mg/L Max	Spec Met
ASTM D130	Corrosion Copper Strip - 3h at 50°C (122°F)	1a	1a Max	Spec Met
ASTM D7671 (3 Hour)	Corrosion Silver Strip	0	1 Max	Spec Met
ASTM D381	Unwashed Gum Content, mg/100mL	14.0		
	Washed Gum Content, mg/100mL	<0.5	5 mg/100mL Max	Spec Met
ASTM D525	Induction Period at 100°C, Minutes	>240	240 Minutes Min	Spec Met
ASTM D2699C	Observed Barometric Pressure, in Hg	29.90		
	Intake Air Temperature, °F	90		
	Research Octane Number	90.8		
ASTM D2700C	Observed Barometric Pressure, in Hg	29.90		
	Intake Mixture Temperature, °F	310		
	Motor Octane Number	83.6	82 Min	Spec Met
ASTM D4052	API Gravity at 60°F, °API	61.7		
	Density at 60°F, g/cm ³	0.7315		
	Specific Gravity 60°F	0.7322		
ASTM D4176 Proc. 1	Appearance	Pass	Pass	Spec Met
	Visual Observance	Clear and Bright	Clear and Bright	Spec Met
	Vortex Observance	No Particulate and Water	No Particulate and Water	Spec Met
	Sample Temperature, °C	25.9		
ASTM D3231	Phosphorus, mg/L	<0.2	1.3 mg/L Max	Spec Met
	Phosphorus, g/gal	<0.0008	0.005 g/gal Max	Spec Met
ASTM D3606B	Benzene, % (V/V)	0.63	1.3 % (V/V) Max	Spec Met
ASTM D5769	Total Aromatics, % (V/V)	10.8		

USPAS-21-1445420211103134104

Reported results relate to the samples tested as received, unless otherwise indicated, and may not represent the bulk/source of the samples collected. This report shall not be reproduced, except in full, without the written approval from Bureau Veritas.



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Submitted Pump Gasoline dosed w/ SulNOxEco Petrol Fuel Conditioner				
USPAS-21-14454-002 ¹				
Method	Test	Result	Specification	Condition
ASTM D6550	Olefins (D1319 Correlation), % (V/V)	6.2		
ASTM D5599	Total Oxygen, % (m/m)	3.77	1.7 - 4 % (m/m)	Spec Met
	Methanol, % (V/V)	<0.10		
	Ethanol, % (V/V)	10.03		
	Isopropanol, % (V/V)	<0.10		
	tert-Butanol, % (V/V)	<0.10		
	n-Propanol, % (V/V)	<0.10		
	MTBE, % (V/V)	<0.10		
	sec-Butanol, % (V/V)	<0.10		
	Di-Isopropyl Ether, % (V/V)	<0.10		
	Isobutanol, % (V/V)	<0.10		
	ETBE, % (V/V)	<0.10		
	tert-Pentanol, % (V/V)	<0.10		
	n-Butanol, % (V/V)	<0.10		
	TAME, % (V/V)	<0.10		
	Total Oxygenates, % (V/V)	10.03		

Comments

¹ The test(s) performed meet the specification(s) and complies with the most recent version of ASTM D4814. Please refer to ASTM D3244 for utilization of test data to determine conformance with specifications

Luis Ojeda, Laboratory Supervisor

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