



# Certificate of Analysis

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**Nomination ID: USPAS-21-14454**

<b>Asset :</b>	Submitted	<b>Submitted by :</b>	SulNOx Group PLC
<b>Product :</b>	Diesel	<b>Date Sampled :</b>	29-Oct-2021
<b>Client Reference :</b>	OP2021MSH3910	<b>Date Received :</b>	29-Oct-2021
<b>Job Location :</b>	Submitted - Pasadena	<b>Date Analyzed :</b>	30-Oct-2021
<b>TOCM Job ID :</b>	USPAS-21-14454	<b>Date Reported :</b>	03-Nov-2021

Submitted Pump Diesel dosed w/ SulNOxEco Diesel Fuel Conditioner				
USPAS-21-14454-001 <sup>1</sup>				
Method	Test	Result	Specification	Condition
ASTM D93A	Corrected Flash Point, °C	54.0	52 °C Min	Spec Met
ASTM D2709	Water and Sediment, % (V/V)	< 0.01	0.05 % (V/V) Max	Spec Met
ASTM D86	IBP, °F	319.5		
	5% Recovered, °F	368.4		
	10% Recovered, °F	385.3		
	20% Recovered, °F	411.8		
	30% Recovered, °F	437.0		
	40% Recovered, °F	460.4		
	50% Recovered, °F	484.9		
	60% Recovered, °F	510.1		
	70% Recovered, °F	537.6		
	80% Recovered, °F	569.1		
	90% Recovered, °F	610.0	540 - 640 °F	Spec Met
	95% Recovered, °F	643.3		
	EP, °F	663.1		
	Recovery, % (V/V)	98.0		
Residue, % (V/V)	1.4			
Loss, % (V/V)	0.6			
ASTM D445	Kinematic Viscosity at 40°C, mm <sup>2</sup> /s	2.270	1.9 - 4.1 mm <sup>2</sup> /s	Spec Met
ASTM D482	Ash, % (m/m)	<0.010	0.01 % (m/m) Max	Spec Met
ASTM D5453	Sulfur Content, mg/kg	6.7	15 mg/kg Max	Spec Met
ASTM D130	Corrosion Copper Strip - 3h at 50°C (122°F)	1a	3a Max	Spec Met
ASTM D613	Cetane Number	46.8	40 Min	Spec Met
ASTM D976	Calculated Cetane Index	50.0	40 Min	Spec Met
ASTM D5773	Cloud Point, °C	-11.5	-9 °C Max	Spec Met
ASTM D524	Ramsbottom Carbon Residue on 10% Distillation Residue, %	0.08	0.35 % Max	Spec Met
ASTM D6079	Test Temperature, °C	60		
	Wear Scar Diameter, µm	450	520 µm Max	Spec Met
ASTM D2624	Elec. Conductivity, pS/m	123	25 pS/m Min	Spec Met
	Sample Temperature, °C	25		
ASTM D4052	API Gravity at 60°F, °API	38.7		
	Appearance	Pass	Pass	Spec Met
ASTM D4176 Proc. 1	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	24.7		
ASTM D7371	Biodiesel, % (V/V)	<1	5 % (V/V) Max	Spec Met
ASTM D2274	Filterable Insolubles, mg/100mL	<0.1		
	Adherent Insolubles, mg/100mL	0.3		
	Total Insolubles(Oxidation Stability), mg/100mL	0.3		

**Comments**

<sup>1</sup> The test(s) performed meet the specification(s) and complies with the most recent version of ASTM D975. Please refer to ASTM D3244 for utilization of test data to determine conformance with specifications

Luis Ojeda, Laboratory Supervisor

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