Certificate of Analysis

Vessel / Object:	PIS POLARIS (9426295)	**Job No:**	150-24-01949
Location:	Texas City, TX / Marathon Galveston Bay Refinery (United States)	**Date Sampled:**	23/09/24
Job Type:	Load	**Date Tested:**	24/09/24
Product Grade:	Export Diesel	**Version:**	1 / 24 Sep 2024 20:46
Client Reference:	Marathon Petroleum Company LP / DGBR-0924-13		
Client Reference:	Musket Corporation / MR5036 - MAR24(TP)0229		

Sample	**Sample ID, Type & Description**
150-24-01949-002	ST 57 UML Composite Pre-Sample

Method	Test	Min	Max	Result	Units	Remarks
ASTM D86	Distillation Recovered					
	IBP			165.0	°C	
	10%			192.5	°C	
	50%			254.2	°C	
	90%	282	338	319.4	°C	
	95%			338.3	°C	
	FBP		366	348.0	°C	
ASTM D2709	Water and Sediment		0.05	< 0.01	%vol	
ASTM D1319	Aromatics		28.5	16.9	%vol	
EN 14078	FAME Content			N.D.	% v/v	
ASTM D482-19	Ash Content		0.010	< 0.010	mass%	
ASTM D1500	ASTM Color		2	1.0		
ASTM D613	Ignition Quality Cetane Number	48.0		48.3		
ASTM D4737	Cetane Index			51.3		
ASTM D4530*	Carbon Residue on 10% Distillation residue		0.20	< 0.1	%mass	
ASTM D4052	Gravity by Digital Density Meter					
	API Gravity @60°F			39.3	°	
	Density @15°C			827.8	kg/m³	
ASTM D4176A proc. 1	Appearance Distillate Fuels					
	Particulates			Pass		
	Free Water			Pass		
ASTM D4176 proc. 2	Haze Rating		2	1		
ASTM D130	Copper Strip Corrosion Rating @50°C/122°F for 3 Hours		2	1A		
ASTM D93A	Flash Point	60.0		63.0	°C	
ASTM D97	Pour Point		3	< -21	°C	
ASTM D6371	CFPP			-18	°C	
ASTM D2500	Cloud Point			-18	°C	
ASTM D2274	Oxidation Stability Total Insolubles		25	< 1	g/m³	
ASTM D6591*	Polycyclic Aromatic Hydrocarbons		8	6.6	%vol	
ASTM D6079	Lubricity of Diesel Fuels by HFRR					
	Lubricity Minor Axis			660	µm	
	Lubricity Major Axis			660	µm	
	Lubricity Average Wear Scar Diameter			660	µm	
ASTM D6468	Percent Reflectance	90		95	%	
ASTM D2622-24	Total Sulfur Content		10	8.4	ppmw	
ASTM D7451	Water Separation Properties					
	Fuel Clarity Rating		2	1		

This document is issued by the Company subject to the Terms and Conditions at https://www.amspecgroup.com/terms-conditions. Any holder of this document is advised that information contained herein reflects the Company's findings at the time and place of its intervention only and within the scope of the Client's instructions. The Company's sole responsibility is to its Client and the Company disclaims any liability to third parties. Any alteration, forgery or falsification of the content or appearance of this document is unlawful.

Certificate of Analysis

Vessel / Object:	PIS POLARIS (9426295)	**Job No:**	150-24-01949
Location:	Texas City, TX / Marathon Galveston Bay Refinery (United States)	**Date Sampled:**	23/09/24
Job Type:	Load	**Date Tested:**	24/09/24
Product Grade:	Export Diesel	**Version:**	1 / 24 Sep 2024 20:46
Client Reference:	Marathon Petroleum Company LP / DGBR-0924-13		
Client Reference:	Musket Corporation / MR5036 - MAR24(TP)0229		

Sample	**Sample ID, Type & Description**
150-24-01949-002	ST 57 UML Composite Pre-Sample

Method	Test	Min	Max	Result	Units	Remarks
ASTM D7451	Water Separation Properties					
	Degree of Separation Rating		2	1		
	Interface Condition Rating		1B	1		
ASTM D445	Kinematic Viscosity @104°F/40°C	1.9	3.2	2.256	mm²/s	

Notes: *Method Modification: Result is reported outside (lower/higher) the scope of the method
#* Results Reported on a Distillation Cut of the Original Sample

Bailey Dickerson

Bailey Dickerson

This document is issued by the Company subject to the Terms and Conditions at https://www.amspecgroup.com/terms-conditions. Any holder of this document is advised that information contained herein reflects the Company's findings at the time and place of its intervention only and within the scope of the Client's instructions. The Company's sole responsibility is to its Client and the Company disclaims any liability to third parties. Any alteration, forgery or falsification of the content or appearance of this document is unlawful.