

To Whom It May Concern



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Analysis Report

Report number : 12004/00127067.1/L/20 Composite prep date : 17-10-2020
Main Object : Puccini Place of sampling : Esso Refinery Botlek
Report Date : 19-10-2020 Date received : 17-10-2020
Date of issue : 19-10-2020 Date completed : 19-10-2020
Sample object : Puccini Sample number : 10657159
Sample type : Composite
Sample submitted as : NAPHTHA REFORMING
Marked : Barge Puccini multiple tank composite after loading

Composite (10657159) ~			
SAMPLE NR	OBJECT	DESCRIPTION	RATIO
10656822	Puccini	Barge Puccini C1 running after loading ~	
10656823	Puccini	Barge Puccini C2 running after loading ~	
10656824	Puccini	Barge Puccini C3 running after loading ~	
10656825	Puccini	Barge Puccini C4 running after loading ~	
10656826	Puccini	Barge Puccini C5 running after loading ~	
10656827	Puccini	Barge Puccini C6 running after loading ~	
10656828	Puccini	Barge Puccini C7 running after loading ~	

NAME	METHOD	UNIT	RESULT
Color Saybolt	ASTM D 156	-	+30
Density at 15 °C	ASTM D 4052	kg/m³	755.1
GC	GC		
Benzene		g/kg	4.8
n- Hexane		g/kg	20.8
Toluene		g/kg	30.5
PIONA	PNA-analyser		
Naphtenes + 2 x Aromatics		g/kg	687
Naphtenes		g/kg	401
Paraffins		g/kg	442
Unsaturation		g/kg	146
Distillation	ASTM D 86		
Initial boiling point		°C	69.4
5% Recovered		°C	98.2
95% Recovered		°C	160.8
Final boiling point		°C	176.3
Difference 90% - 5% Evaporated incl. loss		°C	55.5
DVPE	ASTM D 5191	kPa	13.8
Metals by ICP	ICP		
Arsenic (As)		mg/kg	< 1
Copper (Cu)		mg/kg	<1
Lead (Pb)		mg/kg	<1
Phosphorous (P)		mg/kg	<1
Sodium (Na)		mg/kg	<1

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NAME	METHOD	UNIT	RESULT
Total Organic Chloride	UOP 779	mg/kg	< 1
Hydrogen Sulfide, as S	UOP 163	mg/kg	< 1
Mercury (Hg)	DMA 80	µg/kg	< 1
Organic oxygenate compounds	ASTM D 7423		
Methanol		mg/kg	< 5
Ethanol		mg/kg	< 5
MTBE		mg/kg	13
ETBE		mg/kg	< 5
MTBE + ETBE + Methanol + Ethanol		mg/kg	16
Total Oxygenates		mg/kg	< 25
Total Nitrogen	ASTM D 4629	mg/kg	1.8
Sulphur	ASTM D 2622	mg/kg	111
Water Karl Fischer	ISO 12937	mg/kg	50
PIONA	PNA-analyser		

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NAME	METHOD	UNIT	RESULT
Naphtenes + 2 x Aromatics		vol %	64.4
Naphtenes		vol %	39.5
Paraffins		vol %	47.7
Unsaturates		vol %	12.8
Benzene		vol %	0.4

~ 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.
With reference to API MPMS 12.11 it should be noted that when taking vessel samples, it may not be possible to obtain representative samples of nonhomogeneous cargoes due to the inherent nature of the cargo and the sampling restrictions.

Signed by: Remy van de Velde - Sr Account Manager
Issued by: Saybolt Nederland BV
Place and date of issue: Rotterdam-Botlek - 19-10-2020

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