

Reference: **ApiayBlend19 20190607**
Crude: **Apiay Blend 2019**



Crude Summary Report

General Information		Molecules (%vol on crude)		Whole Crude Properties	
Reference:	ApiayBlend19 20190607	methane + ethane	0,02	Specific Gravity @ 60 °F (none)	0,947
Name:	Apiay Blend 2019	propane	0,04	API Gravity	17,90
Traded Crude:		isobutane	0,07	Total Sulphur (% wt)	2,30
Origin:	Colombia	n-butane	0,57	Pour Point (°F)	45,04
Sample Date:	Assay calculado	isopentane	2,14	Viscosity @ 77 °F (cSt)	694,24
Assay Date:	7-jun-19	n-pentane	1,63	Viscosity @ 100 °F (cSt)	288,27
Issue Date:	10-jun-19	cyclopentane	0,12	Nickel (ppm)	80,0
Comments:		C ₆ paraffins	1,12	Vanadium (ppm)	279,7
		cyclohexane	0,88	Total Nitrogen (ppm)	4319
		benzene	0,31	Total Acid Number (mgKOH/g)	0,49
		C ₇ paraffins	0,79	Mercaptan Sulphur (ppm)	1,7
		C ₇ naphthenes	1,29	Hydrogen Sulphide (ppm)	-
		toluene	0,56	Reid Vapour Pressure (psi)	3,3

Cut Data	IBP	Atmospheric Cuts										Vacuum Cuts			
		C5	140	210	350	400	430	570	650	680	680	850	850	950	1020
Start (°F)	FBP	140	210	350	400	430	570	650	680	680	850	850	950	1020	FBP
End (°F)	FBP														
Yield (% wt)		3,1	4,4	5,8	1,6	1,1	6,5	6,2	2,4	68,5	12,3	8,9	5,3	41,9	
Yield (% vol)		4,6	5,8	7,1	1,9	1,2	7,0	6,4	2,4	63,0	12,3	8,7	5,1	37,0	
Cumulative Yield (% wt)		3,5	7,9	13,7	15,3	16,4	23,0	29,2	31,5	100,0	43,9	52,8	58,1	100,0	
Volume Average B.P. (°F)	860	99	179	263	375	415	505	612	664	1149	770	898	984	1356	
Specific Gravity @ 60 °F (none)	0,947	0,642	0,719	0,769	0,822	0,845	0,883	0,915	0,927	1,025	0,946	0,972	0,990	1,067	
API Gravity	17,9	89,0	65,2	52,4	40,7	35,9	28,8	23,2	21,2	6,6	18,0	14,0	11,4	1,1	
UOPK	11,6	12,8	12,0	11,7	11,5	11,3	11,2	11,2	11,2	11,4	11,3	11,4	11,4	11,4	
Molecular Weight (g/mol)		73	91	116	154	168	203	254	282	522	340	420	474	672	
Total Sulphur (% wt)	2,30	0,004	0,006	0,033	0,192	0,295	0,72	1,38	1,72	3,09	2,19	2,54	2,76	3,52	
Mercaptan Sulphur (ppm)	1,7	1,9	3,1	3,7	4,6	5,6	6,3								
Total Nitrogen (ppm)	4319					7	37	283	586	6260	1415	2662	3855	8759	
Basic Nitrogen (ppm)	1124							150	273	1615	490	764	1048	2200	
Total Acid Number (mgKOH/g)	0,49	0,02	0,06	0,13	0,24	0,28	0,37	0,48	0,53	0,20	0,57	0,44	0,28	0,03	
Viscosity @ 77 °F (cSt)	694	0,38	0,55	0,81	1,46										
Viscosity @ 86 °F (cSt)	483														
Viscosity @ 100 °F (cSt)	288	0,35	0,50	0,71	1,22	1,53	2,73	7,31	14,4						
Viscosity @ 130 °F (cSt)	113				1,00	1,23	2,07	4,95	8,82	208181	26,0	146	2303		
Viscosity @ 180 °F (cSt)										9900	11,1	42,5	265		
Viscosity @ 210 °F (cSt)										2519	7,42	24,2	103	2959695	
Viscosity @ 275 °F (cSt)														49340	
RON (Clear)		72,6	68,0	54,0	48,7										
MON (Clear)		66,4	62,1	56,8	49,3										
Paraffins (% vol)		97,3	60,5	45,3	39,2										
Naphthenes (% vol)		2,6	34,8	38,4	40,6										
Aromatics (% vol)		0,1	4,7	16,3	20,2										
RVP (pis)	3,3	16,2	5,9	1,0	0,3										
Pour Point (°F)	45														
Cloud Point (°F)															
Freeze Point (°F)															
Smoke Point (mm)															
Cetane Index															
Naphthalenes (% vol)															
Aniline Point (°F)				150,6	125,2	121,2	122,5	133,5	141,4		149,8	157,5	167,2		
Hydrogen (% wt)															
Wax (% wt)	4,1									4,5	4,5	4,0	4,0	4,7	
C ₇ Asphaltenes (% wt)	11,6									17,0		0,6	2,7	27,3	
Carbon Conradson (% wt)	14,5									21,2		1,1	4,3	33,8	
Calcium (ppm)	20,0									2,8	28,9	11,2	15,6	41,2	
Salt (lb/1000bbl)															
Vanadium (ppm)	279,7									408,6		1,3	6,6	666,7	
Nickel (ppm)	80,0									116,9		0,1	0,8	191,0	
Iron (ppm)															

Disclaimer

The materials and data contained in this assay is provided as a courtesy from Ecopetrol S.A. Said assay is based upon a range of variable information: In particular, (i) as the assay is based on a sample, it may not be representative of the crude finally delivered; and (ii) crude yield structures change over time.

The review of this assay is under the viewer (or potential buyer's) sole discretion. Ecopetrol S.A. (on behalf of itself and its affiliates) makes no representations, warranties or guarantees as to its accuracy, reliability, quality, correctness or completeness, and shall not be binding for Ecopetrol regarding any potential or actual business related to the marketing. Each user/viewer/potential buyer is liable for its own evaluation in order to perform individual decisions. Any and all use of this information shall be under the liability of the user/viewer/potential buyer, and the user/viewer/potential buyer releases Ecopetrol S.A. and its affiliates from any and all claims arising from its use and shall defend and hold Ecopetrol S.A. and its affiliates harmless from any third party claims arising from the user's application or use of any part of the assays, materials, or information herein contained.