



**ASPHALT INSTITUTE
PERFORMANCE GRADE CLASSIFICATION**

TESTED FOR: Yon Sayano

SAMPLE ID: LE 25

SAMPLED: 3-20-99

ORIGINAL				
Test, Method		Test Results		Specification
Flash Point, AASHTO T 48		299 °C		230 °C min
Viscosity @ 135 °C, ASTM D 4402		0.415		3 Pa S max
Solubility, AASHTO T44		*98.25		99% min. soluble
DSR (Dynamic Shear Rheometer), AASHTO TP 5				
Test Temperature, °C	G*, kPa	Phase Angle, δ, degrees	G*/sinδ, kPa	1.00 kPa min
64	1.743	87.84	1.744	
70	0.8203	88.67	0.8205	
RTFO (ROLLING THIN FILM OVEN)				
Mass Loss, AASHTO T 240		-0.525		1.00% max
DSR (Dynamic Shear Rheometer), AASHTO TP 5				
Test Temperature, °C	G*, kPa	Phase Angle, δ, degrees	G*/sinδ, kPa	2.20 kPa min
64	4.356	85.11	4.372	
70	1.994	86.30	1.994	
PAV (PRESSURE AGING VESSEL), 100° C				
DSR (Dynamic Shear Rheometer), AASHTO TP 5				
Test Temperature, °C	G*, kPa	Phase Angle, δ, degrees	G*/sinδ, kPa	5000 kPa max
28	4826	50.39	3718	
25	7572	46.92	5531	
BHR (Bending Beam Rheometer), AASHTO TP1				
Test Temperature, °C	Stiffness, MPa	m-value		300MPa max 0.300 min
-12	Stiffness, MPa		279	
	m-value		0.303	
-18	Stiffness, MPa		519	
	m-value		0.235	
Potential classification: PG 64 -16				
*Failing solubility				

1. DSR Original: T_{max} Temperature at which $G^*/\sin\delta = 1.00$ kPa	68.4	Limiting Temperature for T_{max} 68.4
2. DSR RTFO: T_{max} Temperature at which $G^*/\sin\delta = 2.20$ kPa	69.2	Limiting Temperature for T_{max} 25.8
3. DSR PAV: T_{min} Temperature at which $G^*\sin\delta = 5000$ kPa	25.8	Limiting Temperature for T_{min} -12.3
4. BHR PAV: T_{min} Temperature at which $S(t) = 300$ MPa	-12.5	(Limiting Performance Grade -) 68.4 -22.3
Temperature at which $m = 0.300$	-12.3	