



Engine		Tests										
SAP #	Test Description	Metals	Fuel Dil	Soot	OX	NTR	V100	V Grade	W%	Gly	TBN	Soot
	Test Method	ICP ASTM D5185	GC ASTM D7593	FTIR ASTM E2412	FTIR ASTM E2412	FTIR ASTM E2412	ASTM D7279	Calc.	Hotplate	FTIR ASTM E2412	ASTM D4739	Wilkes
160001616	Engine Basic	X	X*	X	X	X	X	X	X	X		
160001618	Engine Standard	X	X*	X	X	X	X	X	X	X	X	
160001617	Engine Premium	X	X*		X	X	X	X	X	X	X	X

\*Fuel Dilution is run only if there is a drop out of grade

Non-Engine		Tests								
SAP #	Test Description	Metals	V100	V40	V Grade	W%	Gly	TAN	PQI	
	Test Method	ICP ASTM D5185	ASTM D7279	ASTM D7279	Calc.	Hotplate	FTIR ASTM D2982	ASTM D664	ASTM D8184	
160001639	Non-engine Basic	X	X*	X	X	X	X			
160001641	Non-engine Standard	X	X*	X	X	X	X	X		
160001640	Non-engine Premium	X	X*	X	X	X	X	X	X	

\*SAE identified products to receive V100 — ISO products to receive V40

Hydraulic		Tests								
SAP #	Test Description	Metals	V100	V40	V Grade	W%	TAN	PC	KF	
	Test Method	ICP ASTM D5185	ASTM D7279	ASTM D7279	Calc.	Hotplate	ASTM D664	ASTM D7647	ASTM D6304	
160001629	Hydraulic Basic	X	X*	X	X	X				
160001631	Hydraulic Standard	X	X*	X	X	X	X			
160001630	Hydraulic Premium	X	X*	X	X		X	X	X	

\*SAE identified products to receive V100 — ISO products to receive V40

Natural Gas Engine		Tests									
SAP #	Test Description	Metals	OX	NTR	V100	V Grade	W%	Gly	TAN	TBN	
	Test Method	ICP ASTM D5185	FTIR ASTM E2412	FTIR ASTM E2412	ASTM D7279	Calc.	Hotplate	FTIR ASTM D2982	ASTM D664	ASTM D4739	
160001642	NG Basic	X	X	X	X	X	X	X			
160001644	NG Standard	X	X	X	X	X	X	X	X		
160001643	NG Premium	X	X	X	X	X	X	X	X	X	

Coolants		Tests														
SAP #	Test Description	Metals	pH	NIT	RA	FzPt	AF%	Color	App	TDS	SCA #	Hardness	Azoles	Organic Acids	Conductivity	
	160001670	Coolant Standard	X	X	X	X	X	X	X	X						
160001669	Coolant Premium	X	X	X	X	X	X	X	X	X	X	X				
160001685	Extended Life Standard	X	X	X	X	X	X	X	X							
160001684	Extended Life Premium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	