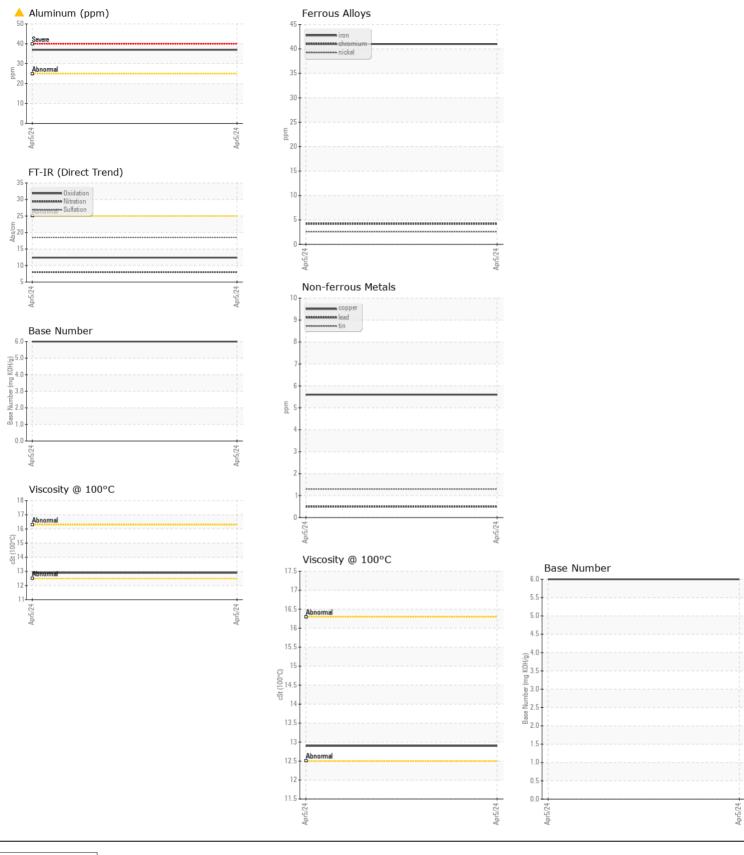
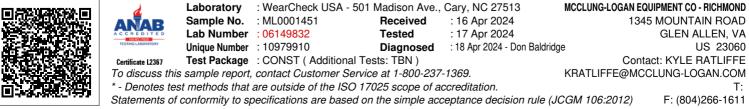


## Machine Id VOLVO 310125 Component Diesel Engine Fluid VOLVO VDS-4.5 Premium Motor Oil 15W40 (--- GAL)

Test         UOM         Method         Links         History1         History2           Oil and filter change at the line of sampling has been noted. No service interval to monitor.         Sample Name         Cilent Info         Kurner         History1         History2             Sample Name         Cilent Info         Saz2              Machine Age         rine         Cilent Info         Saz2             Oil Age         rine         Cilent Info         Changed             Filter Age         rine         Cilent Info         Changed             WEAR         rine         Cilent Info         Changed             The aluminum level is abnormal. All other component wear rates are normal.         rine	······································	· · · · · · · · · · · · · · · · · · ·				~~~~		
Oil and lifer change at the time of sampling has been noted. Nore service interval to monitor.         Sample Date Machine Age has Clinet Info         Clinet Info         SS         Image SS         Image SS <thimage SS         Image SS         <thimage SS<th>RECOMMENDATION</th><th>Test</th><th>UOM</th><th>Method</th><th>Limit/Abn</th><th>Current</th><th>History1</th><th>History2</th></thimage </thimage 	RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
corrective action is recommended at this time. Resample at the next service interval to monitor.         Status is the base of the initial is in the off of the initial is interval to monitor.         Status is the base of the initial is interval to monitor.         Status is the base of the initial is interval to monitor.         Status is the base of the initial is interval to monitor.         Status is the base of the initial is interval to monitor.         Status is the base of the initial is interval to monitor.         Status is the base of the initial is interval to monitor.         Status is the base of the initial is interval to monitor.         Status is the base of the initial is interval to monitor.         Status is the base of the initial is interval to monitor.         Status is the base of the initial is interval to monitor.         Status is the base of the initial is interval to monitor.         Status is the base of the initial is interval to monitor.         Status is the base of the initial is	corrective action is recommended at this time. Resample at the next	Sample Number		Client Info		ML0001451		
Service interval to monitor.         Machine Age         Init         Client Initio         2260             Oil Age         hrs         Client Initio         0         0             Filter Age         hrs         Client Initio         0         0             VIEAR         Client Initio         0         0              VIEAR         Initional point         ASTM 0566n         -200         4             VIEAR         Initional point         ASTM 0566n         -200         4             VietAr         point         ASTM 0566n         -200         4             VietAr         point         ASTM 0566n         -200         4             Auminum         pop         ASTM 0566n         -300              Auminum         point         ASTM 0566n               Auminum         point         ASTM 0566n						05 Apr 2024		
Oil Age Hits Cape hrs         Client Info         532         ···         ···           Filter Age hits Changed         Client Info         One apped         ···         ···           WEAR         Information of the auminum level is abnormal. All other component wear rates are normal.         Information of the auminum level is abnormal. All other component wear rates are normal.         Information of the auminum level is abnormal. All other component wear rates are normal.         Information of the auminum level is abnormal. All other component wear rates are normal.         Information of the auminum level is abnormal. All other component wear rates are normal.         Information of the auminum level is abnormal. All other component wear rates are normal.         Information of the auminum level is abnormal. All other component wear rates are normal.         Information of the auminum level is abnormal. All other component wear rates are normal.         Information of the auminum level is abnormal. All other component wear rates are normal.         Information of the auminum level is abnormal. All other component wear rates are normal.         Information is the auminum level is abnormal. All other component wear rates are normal.         Information is the auminum level is abnormal. All other component wear rates are normal.         Information is the auminum level is abnormal. All other component wear rates are normal.         Information is the auminum level is abnormal. All other component wear rates are normal.         Information is the auminum level is abnormal. All other component wear rates are normal.         Information is the auminum level is abnormal. Nothere is not information in the auminum level is abnorm		Ū	hrs	Client Info				
OI Changed Filter Changed Sample Status         Client Info Client Info Sample Status         Changed Info ABN0844		-	hrs	Client Info		532		
Filter Changed Sample Status         Client into Normal.         Changed Sample Status         Changed Normal.         Changed Sample Status		-	hrs			0		
Sample Status         ABX00ML		-				-		
WEAR         Iron         ppm         ASTM 0585m         >100         41            The aluminum level is abnormal. All other component wear rates are normal.         ppm         ASTM 0585m         >2         3             Nickel         ppm         ASTM 0585m         >2         0             Silver         ppm         ASTM 0585m         >2         0             Auminum ppm         ASTM 0585m         >2         0              Silver         ppm         ASTM 0585m         >2         0             Lead         ppm         ASTM 0585m         >2         0             Copper         ppm         ASTM 0585m         >2         0             Vanadium         ppm         ASTM 0585m         >20         1             Vanadium         ppm         ASTM 0585m         >20         3             Vanadium         ppm         ASTM 0585m         >20         3             Velow Metal		-		Client Info		-		
Sector         Chromium         ppm         ASTM (Disks)         200         4             Nickel         ppm         ASTM (Disks)         20         3             Nickel         ppm         ASTM (Disks)         2         3             Silver         ppm         ASTM (Disks)         2         3             Silver         ppm         ASTM (Disks)         2         4             Silver         ppm         ASTM (Disks)         -2         4             Comport         ppm         ASTM (Disks)         -40              Vanatum         ppm         ASTM (Disks)         -40              Vanatum         ppm         ASTM (Disks)         -15         1		Sample Status				ABNORMAL		
Sector         Chromium         ppm         ASTM (Disks)         200         4             Nickel         ppm         ASTM (Disks)         20         3             Nickel         ppm         ASTM (Disks)         2         3             Silver         ppm         ASTM (Disks)         2         3             Silver         ppm         ASTM (Disks)         2         4             Silver         ppm         ASTM (Disks)         -2         4             Comport         ppm         ASTM (Disks)         -40              Vanatum         ppm         ASTM (Disks)         -40              Vanatum         ppm         ASTM (Disks)         -15         1		Iron	nnm	ASTM D5185m	>100	41		
Sile         ppm         ASTM 05185n         >2         3             Titanium         ppm         ASTM 05185n         >2         0             Silver         ppm         ASTM 05185n         >2         0             Aluminum         ppm         ASTM 05185n         >2         0             Aluminum         ppm         ASTM 05185n         >20         0             Aluminum         ppm         ASTM 05185n         >20         0             Vandum         ppm         ASTM 05185n         >30         6             Vandum         ppm         ASTM 05185n         >30         6             Vandum         ppm         ASTM 05185n         >20         8	The aluminum level is abnormal. All other component wear rates are							
normal.         Titanium         ppm         ASTM D5185 number         c         1         number         number           Sliver         ppm         ASTM D5185 number         C         0             Lead         ppm         ASTM D5185 number         C         1             Lead         ppm         ASTM D5185 number         C         1             Copper         ppm         ASTM D5185 number         C         1             Vanadum         ppm         ASTM D5185 number         C         1             Vanadum         ppm         ASTM D5185 number         NONE         NONE         NONE            Vanadum         ppm         ASTM D5185 number         S         8             Vanadum         ppm         ASTM D5185 number         S         8             Vanadum         ppm         ASTM D5185 number         S         8             CONTALMINATION         Solicon         ppm         ASTM D5185 number         S								
Silver         pp         ATM D5185n         -2.5         0             Aluminum         ppm         ASTM D5185n         -2.5         A         3.7             Aluminum         ppm         ASTM D5185n         -2.50         A         3.7             Copper         ppm         ASTM D5185n         -3.03         6             Vanadium         ppm         ASTM D5185n               Vanadium         ppm         ASTM D5185n                Vallow Metal         Scalar         Visual         NONE         NONE             CONTAMINATION         Stilton         ppm         ASTM D5185n					22			
Aluminum         ppm         ASTM D5185n         >25         ▲ 37             Laad         ppm         ASTM D5185n         >40         <1             Copper         MIX D5185n         >40         <1              Vanadium         ppm         ASTM D5185n         >15         1             Vanadium         ppm         ASTM D5185n         >15         1             White Metal         scalar         'Visual         NONE         NONE             Stilicon         ppm         ASTM D5185n         >25         8             Potassium         ppm         ASTM D5185n         >20         3             Glycol         WC Method         >0.0         <1.0              Glycol         WC Method         >0.0         <1.0              Still cond         Astm         'ASTM D784         >3         0.4             Still cond         Astm					~2			
Lead         ppm         ASTM D5185m         >40						-		
Copper         ppm         ASTM DB186m         >330         6             Tin         ppm         ASTM DB186m         <1             Vanadium         ppm         ASTM DB186m         <1             White Metal         scalar         'Visual         NONE         NONE             There is no indication of any contamination in the oil.         Silicon         ppm         ASTM DB186m         >20         3            Variation         Monitation of any contamination in the oil.         Silicon         ppm         ASTM DB18m         >20         3             Water         WC Method         >6.0         <1.0               Glycol         WC Method         >6.0         <1.0 <th></th> <th></th> <th></th> <th></th> <th>-</th> <th></th> <th></th>						-		
Tin         ppm         ATM D158m         >15         1             Vanadium         ppm         ATM D158m         >1								
Vanadium         ppm         ASTM D5185m          <1								
White Metal Yellow Metal         scalar         "Visual         NONE         NONE         I         I           CONTAMINATION         Silicon         ppm         ASTMD5165m         >26         8         I         I           There is no indication of any contamination in the oil.         Silicon         ppm         ASTMD5165m         >26         8         I         I           Water         WC Method         >0.2         NEG         I         <								
Yellow Metal         scalar         "Visual         NONE             CONTAMINATION         Silicon         ppm         ASTM D5185m         >20         3             There is no indication of any contamination in the oil.         Fuel         WC Method         >6.0         <1.0             Water         WC Method         >6.0         <1.0              Glycol         WC Method         >6.0         <1.0              Solt %         %         'ASTM D784         >3         0.4              Solt %         %         'ASTM D744         >3         0.4              Solt %         %         'ASTM D741         >30         18.5					NONE			
CONTAMINATION         Silicon         ppm         ASTM D5185m         >225         8             There is no indication of any contamination in the oil.         Potassium         ppm         ASTM D5185m         >20         3             Water         WC Method         >6.0         <1.0              Water         WC Method         >6.0         <1.0              Glycol         WC Method         >6.0         <1.0              Solo 1%         %         'ASTM D784         >3         0.4             Sulfation         Abs/tm< 'ASTM D784         >30         18.5              Sulfation         Abs/tm< 'ASTM D784         >30         18.5               Sulfation         Abs/tm< 'ASTM D784         >30         18.5              Sulfation         Abs/tm< 'ASTM D784         >30         18.5              Debris         scalar<'Visual         NONE         NONE								
Potassium         ppm         ASTM D5185m         >20         3            Fuel         WC Method         >6.0         <1.0             Water         WC Method         >6.0         <1.0             Glycol         WC Method         >6.0         NEG             Solt %         %         *ASTM D744         >3         0.4             Solt %         %         *ASTM D744         >3         0.4             Solt %         %         *ASTM D744         >3         0.4             Sultation         Abs/tmm         *ASTM D744         >3         0.4             Sultation         Abs/tmm         *ASTM D7445         >30         18.5             Sand/Dirt         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NORML         NORML             The condition of the oil is acceptable for the time in service.         Sodium         ppm         ASTM								
Fuel         WC Method         >6.0         <1.0	CONTAMINATION	Silicon	ppm	ASTM D5185m	>25	8		
Fue         Workendo 3-0.0         Ref         Hor         Hor           Water         Workendo 3-0.0         NEG          Glycol         NEG            Soot %         %         *ASTM D7844          AB.0             Soot %         %         *ASTM D7644          B.0             Sulfation         Abs/cm         *ASTM D7644          B.0             Sulfation         Abs/cm         *ASTM D7645          B.0             Sulfation         Abs/cm         *ASTM D7645          B.0             Sulfation         Abs/cm         *ASTM D7645          B.0             Debris         scalar         *Visual         NONE         NONE             Appearance         scalar         *Visual         NORML         NORML             Emulsfied Water         scalar         *Visual         NORML         NORML             Boron         ppm         AS		Potassium	ppm	ASTM D5185m	>20	3		
Glycol         WC Method         NEG            Soot %         % STM D784         >3         0.4            Nitration         Abs         % STM D784         >3         8.0            Nitration         Abs         % STM D784         >30         18.5            Sulfation         Abs         % STM D784         >00         8.0            Sulfation         Abs         MSTM D784         >00         8.0            Sulfation         Abs         MSTM D784         >00         8.0            Sulfation         Scalar         *Visual         NONE         NONE            Debris         Scalar         *Visual         NORE         NORE            Appearance         Scalar         *Visual         NORE         NORM            Odor         Scalar         *Visual         NORE         NORM            Broon         ppm         ASTM D5185m         NORM            Marganese         pm         ASTM D5185m         1            Marganesium         ppm         ASTM D5185m	mere is no indication of any contamination in the oil.	Fuel		WC Method	>6.0	<1.0		
Soot %         %         *ASTM D7844         >3         0.4             Nitration         Abs/cm         *ASTM D7624         >20         8.0             Sulfation         Abs/cm         *Astm D7624         >30         18.5             Sulfation         Abs/cm         *Visual         NONE         NONE             Debris         scalar         *Visual         NONE         NONE             Appearance         scalar         *Visual         NORML         NORML             Appearance         scalar         *Visual         NORML         NORML             Mappearance         scalar         *Visual         NORML         NORML             FLUID CONDITION		Water		WC Method	>0.2	NEG		
NitrationAbs/cm*ASTM D7624>208.0SulfationAbs/tm*ASTM D7115>3018.5SulfationAbs/tm*ASTM D7115>3018.5Siltscalar*VisualNONEMONEDebrisscalar*VisualNONEMONESand/Ditscalar*VisualNOREMONEAppearancescalar*VisualNORMMORMLOdorscalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLOdorscalar*VisualNORMLNORMLEmulsfied Waterscalar*VisualNORMLNORMLBoronppmASTM D5185m1BariumppmASTM D5185m1MaganeseppmASTM D5185m11MaganeseppmASTM D5185m11PhosphorusppmASTM D5185m11NanganeseppmASTM D5185m11097PhosphorusppmASTM D5185m11097NanganeseppmASTM D5185m11097Nanganese <th>Glycol</th> <th></th> <th>WC Method</th> <th></th> <th>NEG</th> <th></th> <th></th>		Glycol		WC Method		NEG		
Sulfation         Abs/Imm         'ASTM D7415         >30         18.5             Silt         scalar         *Visual         NONE         NONE             Debris         scalar         *Visual         NONE         NONE             Sand/Dirt         scalar         *Visual         NONE         NONE             Appearance         scalar         *Visual         NORM         NORM		Soot %	%	*ASTM D7844	>3	0.4		
Silt       scalar       *Visual       NONE       NONE          Debris       scalar       *Visual       NONE       NONE          Sand/Dirt       scalar       *Visual       NONE       NONE          Appearance       scalar       *Visual       NORE       NONE          Odor       scalar       *Visual       NORM       NORML          Debris       scalar       *Visual       NORE       NORME          Odor       scalar       *Visual       NORM       NORME          Odor       scalar       *Visual       NOR       NORME          FUID CONDITION       Norme       NORM           Boron       ppm       ASTM D5185m       1           Maganese       ppm       ASTM D5185m       23           Maganese       ppm       ASTM D5185m       1           Calcium       ppm       ASTM D5185m       120           Phosphorus       ppm       ASTM D5185m       2159 <t< th=""><th></th><th>Nitration</th><th>Abs/cm</th><th></th><th></th><th>8.0</th><th></th><th></th></t<>		Nitration	Abs/cm			8.0		
Debris       scalar       *Visual       NONE           Sand/Dirt       scalar       *Visual       NONE       NONE           Appearance       scalar       *Visual       NORM       NORML           Odor       scalar       *Visual       NORM       NORML           Debris       scalar       *Visual       NORML       NORML           Odor       scalar       *Visual       NORML       NORML       NORML           Boron       ppm       ASTM D5185       1            Marganese       ppm       ASTM D5185       11			Abs/.1mm		>30			
Sand/Dirtscalar*VisualNONENONEAppearancescalar*VisualNORMNORMLOdorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNECONDITIONSodiumppmASTM D5185m9BoronppmASTM D5185m9BariumppmASTM D5185m<1MolybdenumppmASTM D5185m<23MagnesiumppmASTM D5185m<120CalciumppmASTM D5185m<120PhosphorusppmASTM D5185m<1097SulfurppmASTM D5185m<1097SulfurppmASTM D5185m<1097SulfurppmASTM D5185m1097SulfurppmASTM D5185m<12.4SulfurppmASTM D5185m<12.4SulfurppmASTM D5185m<6.6.0Sase Number (BN)msMs/HgASTM D28966.0 <t< th=""><th></th><th></th><th>scalar</th><th></th><th></th><th></th><th></th><th></th></t<>			scalar					
Appearance       scalar       *Visual       NORML          Odor       scalar       *Visual       NORML          Emulsified Water       scalar       *Visual       NORML          FLUID CONDITION       Sodium       ppm       ASTM D5185m       1          Boron       ppm       ASTM D5185m       1           Barium       ppm       ASTM D5185m       1           Molybdenum       ppm       ASTM D5185m       1           Molybdenum       ppm       ASTM D5185m       1           Magnesium       ppm       ASTM D5185m       1           Magnesium       ppm       ASTM D5185m       1           Calcium       ppm       ASTM D5185m       120			scalar					
Odorscalar*VisualNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGNEGFLUID CONDITIONSodiumppmASTM D5185mI9BoronppmASTM D5185mI9BariumppmASTM D5185mIMolybdenumppmASTM D5185mIMaganesseppmASTM D5185mI1MagnesiumppmASTM D5185mI1CalciumppmASTM D5185mI1PhosphorusppmASTM D5185mI1SulfurppmASTM D5185mI1097ISulfurppmASTM D5185mI1097ISulfurppmASTM D5185mI1ISulfurppmASTM D5185mI1ISulfurppmASTM D5185mI1IIIIICxidationAbs/1mm'ASTM D7141>2512.4IIIIIIIIIIIIIIIIIIIIIIIIIIIIIII <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>								
Emulsified Waterscalar*Visual>0.2NEGFLUID CONDITIONSodiumppmASTM D5185m1BoronppmASTM D5185m9BariumppmASTM D5185m1MolybdenumppmASTM D5185m23MaganesseppmASTM D5185m1MagnesiumppmASTM D5185m1MagnesiumppmASTM D5185m120MagnesiumppmASTM D5185m1MagnesiumppmASTM D5185m1007CalciumppmASTM D5185m1097SulfurppmASTM D5185m1097SulfurppmASTM D5185m1097SulfurppmASTM D5185m12.4Base Number (BN)mg KOHigASTM D28966.0								
FLUID CONDITION         Sodium         ppm         ASTM D5185m         1            Boron         ppm         ASTM D5185m         9            Barium         ppm         ASTM D5185m          9            Molybdenum         ppm         ASTM D5185m         <1             Manganese         ppm         ASTM D5185m         1             Magnesium         ppm         ASTM D5185m         1             Phosphorus         ppm         ASTM D5185m         1             Zinc         ppm         ASTM D5185m         1             Sulfur         ppm         ASTM D5185m         1097             Qxidation         Abs/1mm         ASTM D5185m         1097             Sulfur         ppm         ASTM D5185m         1097             Qxidation         Abs/1mm         'ASTM D5185m         12.4             Base Number (BN)         ms KOHg         ASTM D5185m         6.0								
Boron       ppm       ASTM D5185m       9          Barium       ppm       ASTM D5185m          Barium       ppm       ASTM D5185m		Emulsified Water	scalar	*Visual	>0.2	NEG		
Boron       ppm       ASTM D5185m       9          Barium       ppm       ASTM D5185m          Barium       ppm       ASTM D5185m		Sodium	nnm	ASTM D5185m		1		
Barium       ppm       ASTM D5185m       <1		-						
MolybdenumppmASTM D5185m23ManganeseppmASTM D5185m1MagnesiumppmASTM D5185m120CalciumppmASTM D5185m2159PhosphorusppmASTM D5185m924ZincppmASTM D5185m1097SulfurppmASTM D5185m1097OxidationAbs.1mm*ASTM D714>2512.4Base Number (BN)mg KOHyASTM D28966.0	The condition of the oil is acceptable for the time in service.							
ManganesseppmASTM D5185m1MagnesiumppmASTM D5185m120CalciumppmASTM D5185m2159PhosphorusppmASTM D5185m0924ZincppmASTM D5185m1097SulfurppmASTM D5185m1097OxidationAbs/.1mm*ASTM D7414>2512.4Base Number (BN)mg KOHgASTM D28966.0								
Magnesium       ppm       ASTM D5185m       120           Calcium       ppm       ASTM D5185m       2159           Phosphorus       ppm       ASTM D5185m       924           Zinc       ppm       ASTM D5185m       1097           Sulfur       ppm       ASTM D5185m       3578           Oxidation       Abs/.1mm       *ASTM D7414       >25       12.4           Base Number (BN)       mg KOH/g       ASTM D2896       6.0								
Calcium       ppm       ASTM D5185m       2159          Phosphorus       ppm       ASTM D5185m       924          Zinc       ppm       ASTM D5185m       1097          Sulfur       ppm       ASTM D5185m       3578          Oxidation       Abs/.1mm       *ASTM D7414       >25       12.4          Base Number (BN)       mg KOHg       ASTM D2896       6.0		•						
Phosphorus       ppm       ASTM D5185m       924          Zinc       ppm       ASTM D5185m       1097          Sulfur       ppm       ASTM D5185m       1097          Oxidation       Abs/.1mm       *ASTM D714       >25       12.4          Base Number (BN)       mg KOH/g       ASTM D2896       6.0		-						
Zinc       ppm       ASTM D5185m       1097          Sulfur       ppm       ASTM D5185m       3578           Oxidation       Abs/.1mm       *ASTM D7141       >25       12.4           Base Number (BN)       mg KOH/g       ASTM D2896       6.0								
Sulfur         ppm         ASTM D5185m         3578            Oxidation         Abs/.1mm         *ASTM D7414         >25         12.4            Base Number (BN)         mg KOH/g         ASTM D2896         6.0								
Oxidation         Abs/.1mm         *ASTM D7414         >25         12.4            Base Number (BN)         mg KOH/g         ASTM D2896         6.0								
Base Number (BN)         mg KOH/g         ASTM D2896         6.0					>25			
					-			
		Visc @ 100°C	cSt	ASTM D445		12.9		





Submitted By: Service - Alex Anderson Page 2 of 2