POLARIS Laboratories

Lubricant Analysis Report

North America: +1-877-808-3750
Latin America: +1-317-808-3750 / +502-3093-6466 (WhatsApp)
Europe: +1-317-808-3750

0	1	2	3	4
NORMAL		ABNORMAL		CRITICAL

Overall report severity based on comments.

Account Information		Component Information		Sample Information	
Account Number:	122750-0001-0000	Component ID:	# 5879	Tracking Number:	00009673753
Company Name:	ARCH OIL COMMENTS	Secondary ID:		Lab Number:	Z-231969
Contact:		Component Type:	UNIDENTIFIED ENGINE	Lab Location:	Poznan
Address:		Manufacturer:	MERCEDES BENZ	Data Analyst:	JPH
		Model:	Information Requested	Sampled:	23-Dec-2021
Phone Number:		Application:	AUTOMOTIVE	Received:	12-Jan-2022
		Sump Capacity:		Completed:	13-Jan-2022

Filter Information		Miscellaneous Information		Product Information	
Filter Type:	Information Requested	Wildcard 1:	+AR 9200V2	Product Manufacturer:	RAVENOL
Micron Rating:	0	Wildcard 2:	+NEO PROTEC GT-EM	Product Name:	NDT
		Miscellaneous:	SAMPLE NR.2 #6318	Viscosity Grade:	SAE 5W40

Comments

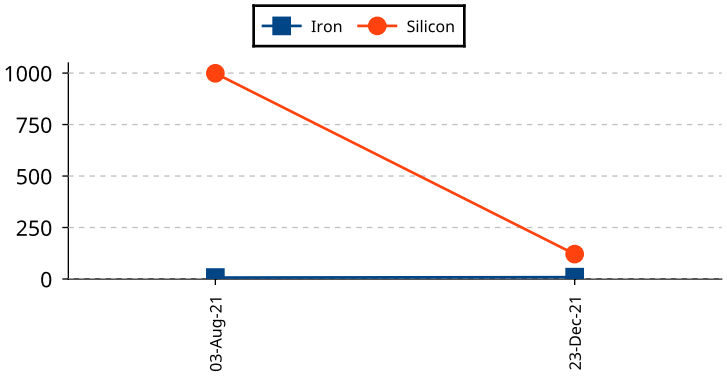
SILICON is high, however, there does not appear to be any wear as a result. SILICON sources can be abrasives (dirt, Alumina Silica), seals and gasket material, lube additive or lube supplement, and/or environmental contaminant; Oxidation is flagged, however we cannot determine the severity of this oxidation value. If using a synthetic lubricant starting oxidation values are typically higher. Continue to monitor other fluid properties for trends of oil degradation. Viscosity is MODERATELY LOW. Causes include contamination, incorrectly identified viscosity grade, or adding a different viscosity grade to the component. Please specify diesel, natural gas, liquid petroleum gas, unleaded gasoline or gasoline engine. Please provide COMPONENT MODEL number to compare data to the correct standards for this component. Please provide this units sump capacity with next sample. Resample at half interval.

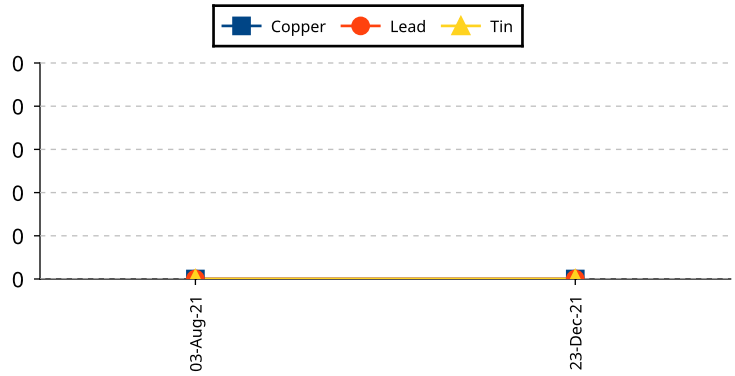
	Wear Metals (ppm)										Contaminant			Multi-Source Metals (ppm)						Additive Metals (ppm)				
Sample #	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
1	7	0	0	3	0	0	0	0	0	0	**999**	5	2	0	70	0	0	1	65	1112	778	0	929	1093
2	9	0	0	0	0	0	0	0	0	0	**121**	5	1	0	82	0	0	0	51	1172	723	0	902	1087

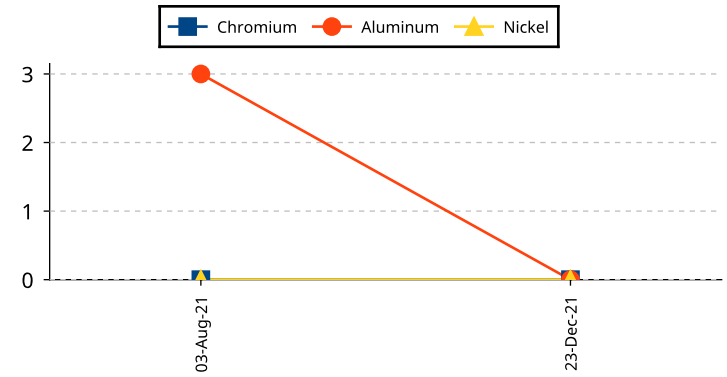
	Sample Information							Contaminants			Fluid Properties					
Sample #	Date Sampled	Date Received	Lube Time mi	Unit Time mi	Lube Change	Lube Added gal	Filter Change	Fuel Dilution %	Soot %	Water %	Viscosity 40°C cSt	Viscosity 100 °C cSt	Acid Number mg KOH / g	Base No. D4739 mg KOH / g	Oxidation abs / cm	Nitration abs / 0.1mm
1	03-Aug-2021	01-Sep-2021	7500	137000	Unk	0	Unk	2.6 - GC	<.1	<.1 - FTIR		12.4	4.24	8.27	**32**	8
2	23-Dec-2021	12-Jan-2022	10000	146000	Unk	0	Unk	1.1 - GC	<.1	<.1 - FTIR	67.3	11.6	2.68	8.43	**31**	9

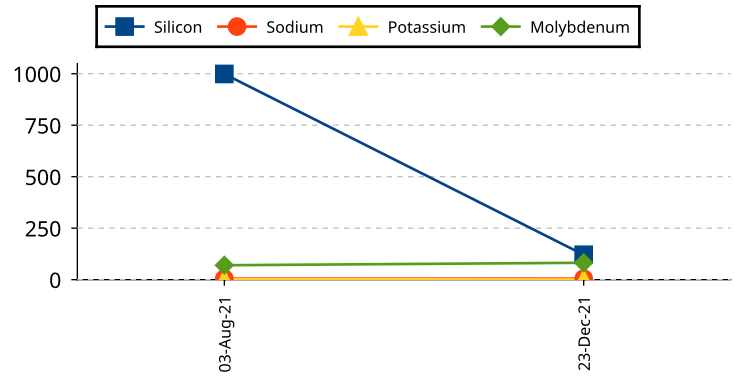
	Particle Count (particles/mL)										Additional Testing
Sample #	ISO Code Based On 4/6/14	> 4 particles / mL	> 6 particles / mL	> 10 particles / mL	> 14 particles / mL	> 21 particles / mL	> 38 particles / mL	> 70 particles / mL	> 100 particles / mL	Test Method	Viscosity Index Index Number
1	/ /										
2	/ /										169

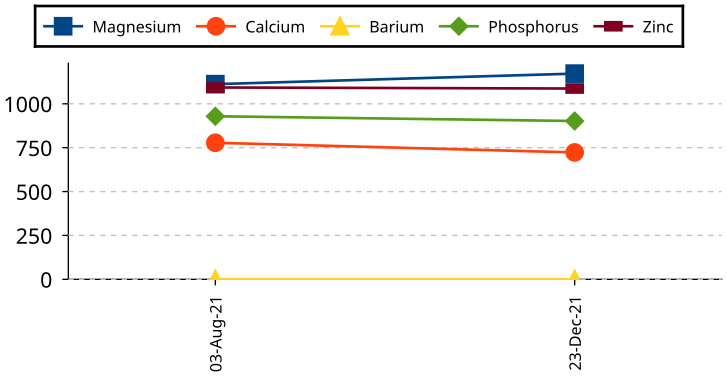
Historical Comments	1	SILICON is high, however, there does not appear to be any wear as a result. SILICON sources can be abrasives (dirt, Alumina Silica), seals and gasket material, lube additive or lube supplement, and/or environmental contaminant; Oxidation is flagged, however we cannot determine the severity of this oxidation value. If using a synthetic lubricant starting oxidation values are typically higher. Continue to monitor other fluid properties for trends of oil degradation. FUEL DILUTION is at a MINOR LEVEL. The fuel dilution test was performed using the diesel method. Please specify if this sample is from a diesel or gasoline engine to ensure the appropriate fuel dilution method is utilized. Acid Number is SLIGHTLY HIGH, which may be due to oxidation, contamination with an acidic product, extended drain interval, or lubricant mixing. Resample at half interval. Flagged data has been rechecked and confirmed.

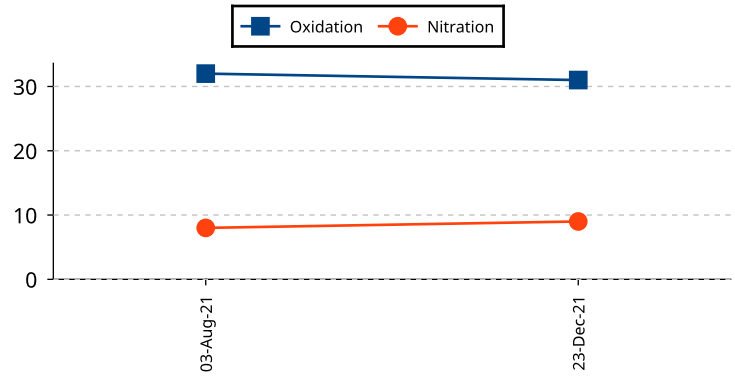

Iron
Silicon
1000
750
500
250
0
03-Aug-21
23-Dec-21

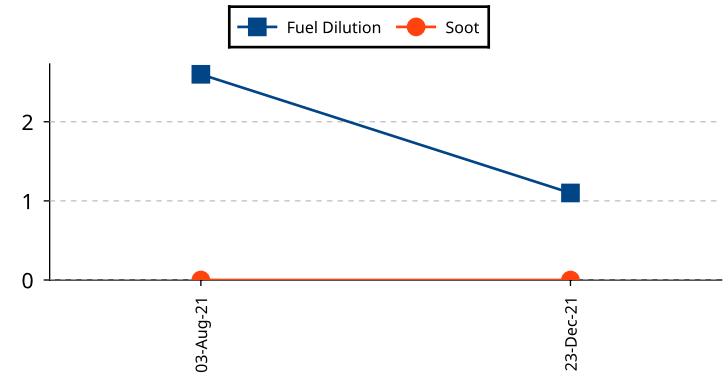

Copper
Lead
Tin
0
03-Aug-21
23-Dec-21

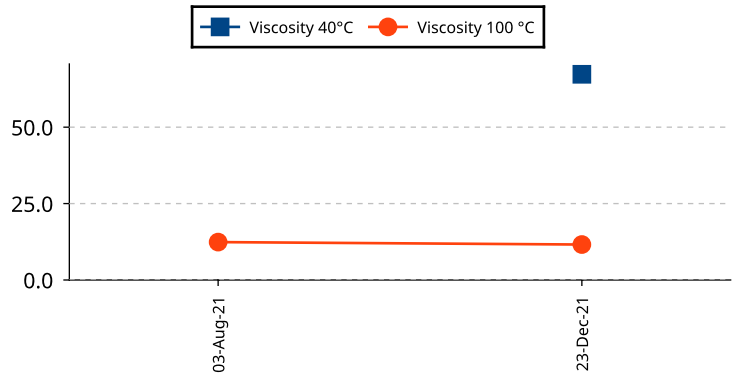

Chromium
Aluminum
Nickel
3
2
1
0
03-Aug-21
23-Dec-21

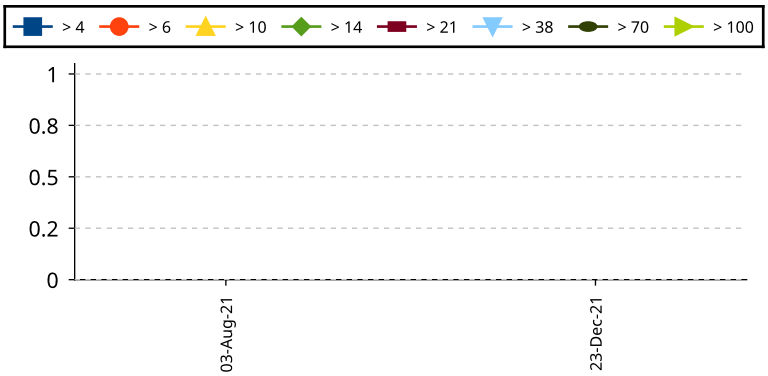

Silicon
Sodium
Potassium
Molybdenum
1000
750
500
250
0
03-Aug-21
23-Dec-21

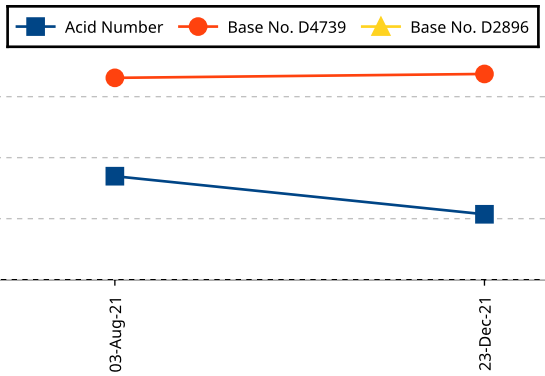

Magnesium
Calcium
Barium
Phosphorus
Zinc
1000
750
500
250
0
03-Aug-21
23-Dec-21


Oxidation
Nitration
30
20
10
0
03-Aug-21
23-Dec-21


Fuel Dilution
Soot
2
1
0
03-Aug-21
23-Dec-21


Viscosity 40°C
Viscosity 100 °C
50.0
25.0
0.0
03-Aug-21
23-Dec-21


> 4
> 6
> 10
> 14
> 21
> 38
> 70
> 100
1
0.8
0.5
0.2
0
03-Aug-21
23-Dec-21


Acid Number
Base No. D4739
Base No. D2896
7.5
5
2.5
0
03-Aug-21
23-Dec-21