

OIL ANALYSIS REPORT

Sample Rating Trend

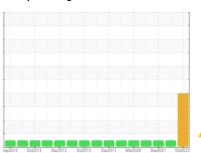




90 Sparks Ch#1 [4500054809] **CARRIER 4509Q19418**

Chiller

CASTROL AIRCOL SW 68 (--- GAL)





DIAGNOSIS

Recommendation

This unit should be monitored closely by a service engineer as these wear conditions tend to advance rapidly. If not recently done change any filter driers to reduce moisture level. We recommend an early resample to monitor this condition.

Copper, lead and tin ppm levels are abnormal. The lead and tin levels indicate bearing wear, and the copper may be plating from the bearing backing.

Contamination

There is a trace of moisture present in the oil. The elevated moisture content is associated with POE oils which are hygroscopic, and can absorb moisture from sampling and processing.

Fluid Condition

The AN level is acceptable for this fluid.

Sample Number Client Info GTT0001442 GTT14852 GTT14852 GTT14852 GTT14852 GTT14852 GTT14852 GTT14852 GTT14852 GTT14852 OT Dec 20 Machine Age hrs Client Info 0			sepzulu ud	12012 Dec2013 Oct201	15 Dec2017 Mar2020 Dec20	121 U62U23	
Sample Date Client Info 31 Oct 2023 05 Apr 2023 07 Dec 20 Machine Age hrs Client Info 0	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 Oil Age hrs Client Info 0 Oil Changed Client Info N/A N/A N/A N/A Sample Status method limit/base current history1 history1 WEAR METALS method limit/base current history1 histor Iron ppm ASTM D5185(m) >8 <1	Sample Number		Client Info		GTT0001442	GTT14852	GTT14853
Oil Age hrs Client Info N/A N/A N/A N/A Sample Status method limit/base current history1 history1 Iron ppm ASTM D5185(m) >8 <1	Sample Date		Client Info		31 Oct 2023	05 Apr 2023	07 Dec 2021
Oil Changed Sample Status Client Info N/A N/A N/A N/A WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185(m) >2 0 -1 -1 Chromium ppm ASTM D5185(m) >2 0 -1 -1 Nickel ppm ASTM D5185(m) >2 0 -1 -1 Titanium ppm ASTM D5185(m) >2 0 Aluminum ppm ASTM D5185(m) >2 0 Aluminum ppm ASTM D5185(m) >2 8 <1	Machine Age	hrs	Client Info		0		
WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185(m) >8 <1	Oil Age	hrs	Client Info		0		
WEAR METALS method limit/base current history1 histor Iron ppm ASTM D5185(m) >8 <1	Oil Changed		Client Info		N/A	N/A	N/A
Iron	Sample Status				ABNORMAL	NORMAL	NORMAL
Chromium ppm ASTM D5185(m) >2 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185(m)	Iron	ppm	ASTM D5185(m)	>8	<1	<1	<1
Titanium ppm ASTM D5185(m) 0 Silver ppm ASTM D5185(m) >2 0 Aluminum ppm ASTM D5185(m) >3 <1	Chromium	ppm	ASTM D5185(m)	>2	0	<1	<1
Silver	Nickel	ppm	ASTM D5185(m)		<1		
Aluminum ppm ASTM D5185(m) >3 <1 <1 <1 Lead ppm ASTM D5185(m) >2 & 8 <1	Titanium	ppm	ASTM D5185(m)		0		
Lead ppm ASTM D5185(m) >2 ▲ 8 <1	Silver	ppm	ASTM D5185(m)	>2	0		
Copper ppm ASTM D5185(m) >8 5 <1 <1 Tin ppm ASTM D5185(m) >4 1 <1	Aluminum	ppm	ASTM D5185(m)	>3	<1	<1	<1
Tin	Lead	ppm	ASTM D5185(m)	>2	<u>^</u> 8	<1	<1
Tin ppm ASTM D5185(m) >4	Copper	ppm	ASTM D5185(m)	>8	<u> </u>	<1	<1
Vanadium ppm ASTM D5185(m) 0 Beryllium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 histor Boron ppm ASTM D5185(m) 0 <1	Tin	ppm	ASTM D5185(m)	>4	<u>^</u> 1	<1	
Beryllium ppm ASTM D5185(m) 0 Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 history Boron ppm ASTM D5185(m) 0 <1 Barium ppm ASTM D5185(m) 0 0 Molybdenum ppm ASTM D5185(m) 0 0 Manganese ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 Phosphorus ppm ASTM D5185(m) 800 263 Zinc ppm ASTM D5185(m) 5 5 7 <1 Sulfur ppm ASTM D5185(m) >10 20 <th< td=""><td>Antimony</td><td>ppm</td><td>ASTM D5185(m)</td><td></td><th>0</th><td></td><td></td></th<>	Antimony	ppm	ASTM D5185(m)		0		
Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185(m) 0 <1	Vanadium	ppm	ASTM D5185(m)		0		
Cadmium ppm ASTM D5185(m) 0 ADDITIVES method limit/base current history1 histor Boron ppm ASTM D5185(m) 0 <1	Beryllium	ppm	ASTM D5185(m)		0		
Boron ppm ASTM D5185(m) 0 <1	Cadmium		ASTM D5185(m)		0		
Barium ppm ASTM D5185(m) 0 0 Molybdenum ppm ASTM D5185(m) 0 0 Manganese ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 Calcium ppm ASTM D5185(m) 0 0 Phosphorus ppm ASTM D5185(m) 800 263 Zinc ppm ASTM D5185(m) 5 5 7 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185(m) 0 0 Manganese ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 Calcium ppm ASTM D5185(m) 0 0 Phosphorus ppm ASTM D5185(m) 5 5 7 <1 Zinc ppm ASTM D5185(m) 5 5 7 <1 Sulfur ppm ASTM D5185(m) 10 20 Lithium ppm ASTM D5185(m) <1 CONTAMINANTS method limit/base current history1 histor Silicon ppm ASTM D5185(m) >15 36 Sodium ppm ASTM D5185(m) >20 4 Potassium ppm ASTM D6304* >100 <th< td=""><td>Boron</td><td>ppm</td><td>ASTM D5185(m)</td><td>0</td><th><1</th><td></td><td></td></th<>	Boron	ppm	ASTM D5185(m)	0	<1		
Manganese ppm ASTM D5185(m) 0 0 Magnesium ppm ASTM D5185(m) 0 0 Calcium ppm ASTM D5185(m) 0 0 Phosphorus ppm ASTM D5185(m) 800 263 Zinc ppm ASTM D5185(m) 5 5 7 <1	Barium	ppm	ASTM D5185(m)	0	0		
Magnesium ppm ASTM D5185(m) 0 0 Calcium ppm ASTM D5185(m) 0 0 Phosphorus ppm ASTM D5185(m) 800 263 Zinc ppm ASTM D5185(m) 5 5 7 <1 Sulfur ppm ASTM D5185(m) 10 20 Lithium ppm ASTM D5185(m) <1 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185(m) >15 36 Sodium ppm ASTM D5185(m) >20 4 Potassium ppm ASTM D5185(m) >20 4 ppm Water ppm ASTM D6304* >100 485 276 133 FLUID DEGRADATION method limit/base <th< td=""><td>Molybdenum</td><td>ppm</td><td>ASTM D5185(m)</td><td>0</td><th>0</th><td></td><td></td></th<>	Molybdenum	ppm	ASTM D5185(m)	0	0		
Calcium ppm ASTM D5185(m) 0 0 Phosphorus ppm ASTM D5185(m) 800 263 Zinc ppm ASTM D5185(m) 5 5 7 <1	Manganese	ppm	ASTM D5185(m)	0	0		
Phosphorus ppm ASTM D5185(m) 800 263 Zinc ppm ASTM D5185(m) 5 5 7 <1	Magnesium	ppm	ASTM D5185(m)	0	0		
Zinc ppm ASTM D5185(m) 5 7 <1 Sulfur ppm ASTM D5185(m) 10 20 Lithium ppm ASTM D5185(m) <1	Calcium	ppm	ASTM D5185(m)	0	0		
Sulfur ppm ASTM D5185(m) 10 20 Lithium ppm ASTM D5185(m) <1 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185(m) >15 36 Sodium ppm ASTM D5185(m) 0 Potassium ppm ASTM D5185(m) >20 4 ppm Water ppm ASTM D6304* >100 485 276 133 FLUID DEGRADATION method limit/base current history1 history	Phosphorus	ppm	ASTM D5185(m)	800	263		
Lithium ppm ASTM D5185(m) <1 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185(m) >15 36 Sodium ppm ASTM D5185(m) 0 Potassium ppm ASTM D5185(m) >20 4 ppm Water ppm ASTM D6304* >100 485 276 133 FLUID DEGRADATION method limit/base current history1 history	Zinc	ppm	ASTM D5185(m)	5	5	7	<1
CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185(m) >15 36 Sodium ppm ASTM D5185(m) 0 Potassium ppm ASTM D5185(m) >20 4 ppm Water ppm ASTM D6304* >100 ▲ 485 276 133 FLUID DEGRADATION method limit/base current history1 history1	Sulfur	ppm	ASTM D5185(m)	10	20		
Silicon ppm ASTM D5185(m) >15 36 Sodium ppm ASTM D5185(m) 0 Potassium ppm ASTM D5185(m) >20 4 ppm Water ppm ASTM D6304* >100 485 276 133 FLUID DEGRADATION method limit/base current history1 history	Lithium	ppm	ASTM D5185(m)		<1		
Sodium ppm ASTM D5185(m) 0 Potassium ppm ASTM D5185(m) >20 4 ppm Water ppm ASTM D6304* >100 ▲ 485 276 133 FLUID DEGRADATION method limit/base current history1 history1	CONTAMINANTS	;	method	limit/base	current	history1	history2
Sodium ppm ASTM D5185(m) 0 Potassium ppm ASTM D5185(m) >20 4 ppm Water ppm ASTM D6304* >100 ▲ 485 276 133 FLUID DEGRADATION method limit/base current history1 history1	Silicon	ppm	ASTM D5185(m)	>15	36		
ppm Water ppm ASTM D6304* >100 ▲ 485 276 133 FLUID DEGRADATION method limit/base current history1 history	Sodium	ppm	ASTM D5185(m)		0		
FLUID DEGRADATION method limit/base current history1 history	Potassium	ppm	ASTM D5185(m)	>20	4		
	ppm Water	ppm	ASTM D6304*	>100	485	276	133
Acid Number (AN) mg KOH/g ASTM D974* 0.05 0.06 0.107 0.026	FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D974*	0.05	0.06	0.107	0.026



OIL ANALYSIS REPORT

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE		
Yellow Metal	scalar	Visual*	NONE	NONE		
Precipitate	scalar	Visual*	NONE	NONE		
Silt	scalar	Visual*	NONE	NONE		
Debris	scalar	Visual*	NONE	NONE		
Sand/Dirt	scalar	Visual*	NONE	NONE		
Appearance	scalar	Visual*	NORML	NORML		
Odor	scalar	Visual*	NORML	NORML		
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	68	62.0		
SAMPLE IMAGES		method	limit/base	current	history1	history2
Color					no image	no image
Bottom					no image	no image



Sample No. : GTT0001442 Recieved : 03 Jan 2024
Lab Number : 02606392 Diagnosed : 12 Jan 2024
Unique Number : 5707478 Diagnostician : Bill Quesnel

Test Package: IND 2 (Additional Tests: KV40) *To discuss this sample report, contact Customer Service at 1-905-847-9300 Ext 26.*

Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.

Damages: Seller shall in no event be liable for special, incidental, or consequential damages, of a commercial nature, resulting from any cause.

Carrier Commerical Service

C/O Conduent Div of Carrier Canada, 1-2740 Matheson Blvd
Mississauga, ON

Mississauga, ON CA L4W 4X3

Contact: Brian Raymundo

Brian.Raymundo@carrier.com T:

al nature, resulting from any cause.