

OIL ANALYSIS REPORT

Sample Rating Trend

ISO

KAESER ASD 40 1048

Compressor Fluid

KAESER SIGMA (OEM) S-460 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates present in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

			Sep2017	Feb2024		
SAMPLE INFORM		method	limit/base	current	history1	history2
		Client Info	in the base	KC06133303		THISTOLYZ
Sample Number				23 Feb 2024	KC64217	
Sample Date	bro	Client Info			26 Sep 2017	
Machine Age	hrs	Client Info		60920	17022 8556	
Oil Age	hrs	Client Info		0 N/A	Changed	
Oil Changed Sample Status		Client Info		ABNORMAL	ABNORMAL	
			Produkter and			
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	0	1	
Chromium	ppm	ASTM D5185m	>10	<1	0	
Nickel	ppm	ASTM D5185m	>3	0	0	
Titanium	ppm	ASTM D5185m	>3	<1	0	
Silver	ppm	ASTM D5185m	>2	0	0	
Aluminum	ppm	ASTM D5185m	>10	3	<1	
Lead	ppm	ASTM D5185m	>10	<1	0	
Copper	ppm	ASTM D5185m	>50	4	18	
Tin	ppm	ASTM D5185m	>10	<1	0	
Antimony	ppm	ASTM D5185m			0	
Vanadium	ppm	ASTM D5185m		<1	0	
Cadmium	ppm	ASTM D5185m		<1	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		0	0	
				-	÷	
Barium	ppm	ASTM D5185m	90	<1	<1	
Barium Molybdenum			90	<1 0		
Molybdenum	ppm	ASTM D5185m	90		<1	
Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	90 90	0	<1 0	
Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		0 0	<1 0 <1	
Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90	0 0 <1	<1 0 <1 0	
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90	0 0 <1 3	<1 0 <1 0 <1	
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90	0 0 <1 3 <1	<1 0 <1 0 <1 11	
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90 2	0 0 <1 3 <1 0	<1 0 <1 0 <1 11 2	
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90 2 limit/base	0 0 <1 3 <1 0 0 current	<1 0 <1 0 <1 11 2 history1	
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m	90 2 limit/base >25	0 0 <1 3 <1 0 <u>current</u> <1	<1 0 <1 0 <1 11 2 history1 0	 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	90 2 limit/base >25 >20	0 0 <1 3 <1 0 <u>current</u> <1	<1 0 <1 0 <1 11 2 history1 0	 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90 2 limit/base >25 >20	0 0 <1 3 <1 0 <u>current</u> <1 0 1	<1 0 <1 0 <1 11 2 <u>history1</u> 0 <1 1	 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	90 2 limit/base >25 >20 >0.05	0 0 <1 3 <1 0 <u>current</u> <1 0 1 0.007	<1 0 <1 0 <1 11 2 <u>history1</u> 0 <1 1 0.014	 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304	90 2 limit/base >25 >20 >20 >0.05 >500	0 0 <1 3 <1 0 <u>current</u> <1 0 1 0.007 74	<1 0 <1 0 <1 11 2 <u>history1</u> 0 <1 1 0.014 140	 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304	90 2 limit/base >25 >20 >20 >500 limit/base	0 0 <1 3 <1 0 current <1 0 1 0.007 74 current	<1 0 <1 0 <1 11 2 <u>history1</u> 0 <1 1 1 0.014 140 <u>history1</u>	 history2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647	90 2 limit/base >25 >20 >20 >500 limit/base	0 0 <1 3 <1 0 current <1 0 1 0.007 74 current 18720	<1 0 <1 0 <1 11 2 history1 0 <1 1 0.014 140 history1 	 history2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647	90 2 2 limit/base >25 >20 >20 >0.05 >500 limit/base >1300 >80	0 0 <1 3 <1 0 current <1 0 1 0.007 74 current 18720 ▲ 5984	<1 0 <1 0 <1 11 2 <u>history1</u> 0 <1 1 0.014 140 <u>history1</u> 	 history2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647	90 2 2 limit/base >25 >20 >20 >0.05 >500 limit/base >1300 >80	0 0 <1 3 <1 0 current <1 0 1 0.007 74 current 18720 ▲ 5984 ▲ 590	<1 0 <1 0 <1 11 2 <u>history1</u> 0 <1 1 0.014 140 <u>history1</u> 	 history2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	90 2 2 limit/base >25 >20 >0.05 >500 limit/base >300 >80 >20 >80 >20 >4	0 0 <1 3 <1 0 0 current <1 0 1 0.007 74 0.007 74 18720 ▲ 5984 ▲ 590 ▲ 187	<1 0 <1 0 <1 11 2 <u>history1</u> 0 <1 1 0.014 140 <u>history1</u> 	 history2 history2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	90 2 2 limit/base >25 >20 >0.05 >500 limit/base >300 >80 >20 >80 >20 >4	0 0 <1 3 <1 0 current <1 0 1 0.007 74 current 18720 ▲ 5984 ▲ 590 ▲ 187 ● 10	<1 0 <1 0 <1 11 2 <u>history1</u> 0 <1 1 0.014 140 <u>history1</u> 	 history2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >4µm Particles >14µm Particles >38µm Particles >38µm Particles >71µm Oil Cleanliness	ppm ppm ppm ppm ppm ppm ppm ppm % ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647	90 2 2 3 3 3 3 5 5 0 3 5 0 0 5 0 0 5 0 0 3 3 3 3	0 0 <1 3 <1 0 current <1 0 1 0.007 74 current 18720 ▲ 5984 ▲ 5984 ▲ 590 ▲ 187 ● 10 0 21/20/16	<1 0 <1 0 <1 11 2 <u>history1</u> 0 <1 1 0 0 <1 1 0 0.014 140 <u>history1</u> 	 history2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Vater ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm Particles >21µm Particles >38µm Particles >71µm	ppm ppm ppm ppm ppm ppm ppm ppm % ppm	ASTM D5185m ASTM D5047 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	90 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 <1 3 <1 0 current <1 0 1 0.007 74 current 18720 ▲ 5984 ▲ 590 ▲ 187 ● 10 0	<1 0 <1 0 <1 11 2 history1 0 <1 1 1 0.014 140 history1 	 history2 history2



Contact/Location: Service Manager - LULBEL



OIL ANALYSIS REPORT

20k	Particle Trend	VISUAL		method	limit/base	current	history1
		White Metal	scalar	*Visual	NONE	NONE	NONE
number of particles (1 ml) 10k 2k	••••••••••••••••••••••••••••••••••••••	Yellow Metal	scalar	*Visual	NONE	NONE	NONE
104		Precipitate	scalar	*Visual	NONE	NONE	NONE
ar of p		Silt	scalar	*Visual	NONE	NONE	NONE
quine 5k		Debris	scalar	*Visual	NONE	LIGHT	A HEAVY
Ok		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
UK	6/17	Appearance	scalar	*Visual	NORML	NORML	NORML
	Sep26/17 Feb23/24	Odor	scalar	*Visual	NORML	NORML	NORML
		Emulsified Water	scalar	*Visual	>0.05	NEG	NEG
12000	Water (KF)	Free Water	scalar	*Visual		NEG	NEG
10000	Severe	FLUID PROPERT	IES	method	limit/base	current	history1
0008 (ppm) 0008		Visc @ 40°C		ASTM D445	46	44.5	44.01
aten 4000		SAMPLE IMAGES	S	method	limit/base	current	history1
2000	Abnormal						
0	Sep26/17	Color				•- • •	
	Acid Number						
0.50 © 0.40	Base	Bottom					
(B/HO) 0.40 (B/HO) B/ 0.30 (0.20 Jan 0.20							
L uper		GRAPHS					
Acid Nur Acid Nur		Ferrous Alloys				Particle Count	
¥ 0.10		10 8			491,520		
0.00		chromium			122,880		
	Sep2.6/11				30,720		
	ол П	2-			50,720		
12000	Water (KF)	0			7,680	1	
12000	Severe	Sep 26/1			Feb23/24 (per 1 ml		
10000	+ 				les		
(mdd) 8000		Non-ferrous Metal	S		91 480		
0009 Water (ppm)		copper			ja 120		
4000		15 - Instantin lead	-		10 30		
2000	Abnormal	<u>ق</u> 10-			50		
0	21/2	5-			8	Bioresemal	
	Sep 26/17				* 2	Į	
		Sep 26/1			Feb23/24		
52	Viscosity @ 40°C	∞ Viscosity @ 40°C			۵ 4	μ 6μ	14µ 21µ
50	Abnormal	55 _T			0.50	Acid Number	
48		50 - Abnormal			0.50 Ho 0.40	Base	*****
64 (40°C) 44 cSt	Base	Dase Base			Ĕ 0.30		
44 (S		() () () () () () () () () ()			40.20 90.20 90.10 90.00 90.00		
42	Abnormal	40 - Abnormal			P 0.10		
40		35				Ļ	
38	- LUX	Sep26/1			Feb 23/24	Sep 26/1	
	Sep 26/1	S			a.	3 S	
		: WearCheck USA - 50					LI
	Sample No. Lab Number	: KC06133303 : 06133303	Receiv Testeo) Mar 2024 Apr 2024		1
	TESTING LABORATORY Unique Number		Diagn		Apr 2024 - Dou	ıg Bogart	
子、	Certificate L2367 Test Package	: IND 2	-		-		Contact:
<u> </u> 83	To discuss this sample report						
回發	* - Denotes test methods that Statements of conformity to s					rule (JCGM 10	5.2012)
L			3111	pie accepia			

38µ

history1

history2

history2

history2

no image

no image

.24 -22

20 ISO 4406:1999 Clear

14 3 Lod

Feb23/24.

Т:

F: