

OIL ANALYSIS REPORT

Machine Id

KAESER CSD 75 6540717 (S/N 1495)

Component Compressor

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

DIAGNOSIS

A Recommendation

We recommend you service the filters on this component. 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 suitable for further service.

		an2019 Jun20	19 Dec2019 Jul2020 Ja	m2021 Jul2021 Jan2022 Aug2022	Apr/2023	
		method	limit/base	current	history1	history?
		methou	IIIIII/Dase	Current	Thistory I	Thistory2
Sample Number		Client Info		KC121917	KC101095	KC107907
Sample Date		Client Info		25 Jan 2024	24 Apr 2023	14 Dec 2022
Machine Age	hrs	Client Info		26622	22601	20977
Oil Age	hrs	Client Info		0	1624	4085
Oil Changed		Client Info		N/A	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	0	<1	0
Chromium	ppm	ASTM D5185m	>10	0	0	0
Nickel	ppm	ASTM D5185m	>3	0	0	0
Titanium	ppm	ASTM D5185m	>3	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>10	0	<1	0
Lead	ppm	ASTM D5185m	>10	0	0	0
Copper	ppm	ASTM D5185m	>50	6	2	5
Tin	ppm	ASTM D5185m	>10	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		0	0	0
Barium	nnm	ASTM D5185m	90	0	0	0
Banam	ppm		00	v	0	0
Molybdenum	ppm	ASTM D5185m	00	0	0	0
Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m		0 <1	0	0
Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	90	0 <1 <1	0 0 31	0 0 0 0
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90 2	0 <1 <1 1	0 0 31 0	0 0 0 0
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	90 2	0 <1 <1 1 0	0 0 31 0 <1	0 0 0 0 2
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 <1 <1 1 0 0	0 0 31 0 <1 39	0 0 0 0 2 0
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS	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 <1 <1 1 0 0 0 current	0 0 31 0 <1 39 history1	0 0 0 0 2 0 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	0 <1 <1 1 0 0 0 current <1	0 0 31 0 <1 39 history1 0	0 0 0 0 2 0 2 0 history2 <1
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium	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 <1 <1 1 0 0 0 <u>current</u> <1 2	0 0 31 0 <1 39 history1 0 10	0 0 0 0 2 0 0 history2 <1 0
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium	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	90 2 limit/base >25 >20	0 <1 <1 1 0 0 0 <u>current</u> <1 2 2	0 0 31 0 <1 39 history1 0 10 6	0 0 0 0 2 0 history2 <1 0 0
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185m ASTM D5304	90 2 limit/base >25 >20 >0.05	0 <1 <1 1 0 0 0 current <1 2 2 0.005	0 0 31 0 <1 39 history1 0 10 6 0.021	0 0 0 2 0 <u>history2</u> <1 0 0 0 0 0.014
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 ASTM D6304	90 2 limit/base >25 >20 >0.05 >500	0 <1 <1 1 0 0 0 <u>current</u> <1 2 2 0.005 57	0 0 31 0 <1 39 history1 0 10 6 0.021 217.3	0 0 0 2 0 <u>history2</u> <1 0 0 0 0.014 146.7
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 Method	90 2 limit/base >25 >20 >0.05 >500 limit/base	0 <1 <1 0 0 0 0 current 2 2 0.005 57 current	0 0 31 0 <1 39 history1 0 10 6 0.021 217.3 history1	0 0 0 2 0 2 0 0 history2 <1 0 0 0 0 0.014 146.7 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	90 2 limit/base >25 >20 >0.05 >500 limit/base	0 <1 <1 1 0 0 current <1 2 2 0.005 57 current 12090	0 0 31 0 <1 39 history1 0 10 6 0.021 217.3 history1 512	0 0 0 2 0 <u>history2</u> <1 0 0 0.014 146.7 <u>history2</u> 3139
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647	90 2 limit/base >25 >20 >20 >500 limit/base >1300	0 <1 <1 1 0 0 0 current <1 2 2 0.005 57 current 12090 ▲ 4411	0 0 31 0 <1 39 history1 0 10 6 0.021 217.3 history1 512 146	0 0 0 2 0 2 0 history2 <1 0 0 0 0.014 146.7 history2 3139 888
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 limit/base >25 >20 >20 >500 limit/base >1300 >80	0 <1 <1 1 0 0 0 current <1 2 2 0.005 57 current 12090 ▲ 4411 ▲ 223	0 0 31 0 <1 39 history1 0 10 6 0.021 217.3 history1 512 146 14	0 0 0 2 0 2 0 history2 <1 0 0 0 0.014 146.7 history2 3139 888 77
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 kess	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647	90 2 2 3 3 3 3 5 5 0 3 5 5 0 3 5 5 0 3 5 5 0 3 5 5 0 3 3 5 0 3 5 5 0 3 3 3 0 3 3 0 3 3 0 3 3 3 0 3 3 3 3	0 <1 <1 1 0 0 0 current <1 2 2 0.005 57 current 12090 ▲ 4411 ▲ 223 ▲ 47	0 0 31 0 <1 39 history1 0 10 6 0.021 217.3 history1 512 146 14 14 5	0 0 0 2 0 2 0 history2 <1 0 0 0 0.014 146.7 history2 3139 888 77 26
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm Particles >38µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm % ppm SESS	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	90 2 2 3 3 2 3 3 2 5 3 3 3 3 3 3 3 3 3 3 3	0 0 <1 <1 0 0 current <1 2 0.005 57 current 12090 ▲ 4411 ▲ 223 ▲ 47 2	0 0 31 0 <1 39 history1 0 10 6 0.021 217.3 history1 512 146 14 14 5 0	0 0 0 2 0 2 0 0 history2 <1 0 0 0 0.014 146.7 history2 3139 888 77 26 2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm Particles >38µm Particles >71µm	ppm ppm ppm ppm ppm ppm ppm ppm ppm % ppm \$	ASTM D5185m ASTM D6304 ASTM D7647	90 2 2 3 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 <1 <1 1 0 0 0 current <1 2 2 0.005 57 current 12090 ▲ 4411 ▲ 223 ▲ 47 2 1 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	0 0 31 0 <1 39 history1 0 10 6 0.021 217.3 history1 512 146 14 5 0 0 0	0 0 0 2 0 2 0 0 history2 <1 0 0 0 0.014 146.7 history2 3139 888 77 26 2 0
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >4µm Particles >21µm Particles >38µm Particles >71µm Oil Cleanliness	ppm ppm 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 3 3 3 3 3 3 3 3 3 3 3 3 3	0 <1 <1 <1 0 0 0 current <1 2 2 0.005 57 current 12090 ▲ 4411 ▲ 223 ▲ 47 2 1 ▲ 21/19/15	0 0 31 0 <1 39 history1 0 10 6 0.021 217.3 history1 512 146 14 55 0 0 0 16/14/11	0 0 0 2 0 2 0 history2 <1 0 0 0.014 146.7 <u>history2</u> 3139 888 77 26 2 2 0 0 19/17/13
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 Particles >71µm Oil Cleanliness FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm % ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647	90 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 <1 <1 1 0 0 0 current <1 2 2 0.005 57 current 12090 ▲ 4411 ▲ 223 ▲ 47 2 1 ▲ 21/19/15 current	0 0 31 0 <1 39 history1 0 10 6 0.021 217.3 history1 512 146 14 55 0 0 0 16/14/11 history1	0 0 0 2 0 2 0 0 1 1 0 0 0 0 0 0 0 0 0 0





OIL ANALYSIS REPORT











VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46	43.9	44.3	44.0
SAMPLE IMAGES		method	limit/base	current	history1	history2
Color				A		

Bottom



Test Package : IND 2

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) T: F:

Certificate 12367

Contact/Location: ? ? - KRALAR Page 2 of 2