

### **OIL ANALYSIS REPORT**

Sample Rating Trend



# Machine Id 7921364 (S/N 1170) Compressor

# Fluid

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

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORM	<b>MATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		KCPA018522	KCPA004652	
Sample Date		Client Info		29 May 2024	20 Jul 2023	
Machine Age	hrs	Client Info		11354	8587	
Oil Age	hrs	Client Info		2772	0	
Oil Changed		Client Info		Changed	N/A	
Sample Status				NORMAL	ABNORMAL	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	0	0	
Chromium	ppm	ASTM D5185m	>10	<1	0	
Nickel	ppm	ASTM D5185m	>3	0	0	
Titanium	ppm	ASTM D5185m	>3	<1	<1	
Silver	ppm	ASTM D5185m	>2	0	0	
Aluminum	ppm	ASTM D5185m	>10	2	<1	
Lead	ppm	ASTM D5185m	>10	<1	0	
Copper	ppm	ASTM D5185m	>50	11	8	
Tin	ppm	ASTM D5185m	>10	<1	0	
Vanadium	ppm	ASTM D5185m		0	<1	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	0	
Barium	ppm	ASTM D5185m	90	0	0	
Molybdenum	ppm	ASTM D5185m	0	<1	0	
Manganese	ppm	ASTM D5185m		0	<1	
Magnesium	ppm	ASTM D5185m	100	<1	2	
Calcium	ppm	ASTM D5185m	0	0	0	
Phosphorus	ppm	ASTM D5185m	0	0	<1	
Zinc	ppm	ASTM D5185m	0	0	0	
Sulfur	ppm	ASTM D5185m	23500	21371	19470	
CONTAMINANTS	;	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	1	1	
Sodium	ppm	ASTM D5185m		0	1	
Potassium	ppm	ASTM D5185m	>20	<1	<1	
Water	%	ASTM D6304	>0.05	0.006	0.010	
ppm Water	ppm	ASTM D6304	>500	64	104.0	
FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		581	10789	
Particles >6µm		ASTM D7647	>1300	253	<b>2</b> 545	
Particles >14µm		ASTM D7647	>80	11	<b>9</b> 1	
Particles >21µm		ASTM D7647	>20	1	17	
Particles >38µm		ASTM D7647	>4	0	0	
Particles >71µm		ASTM D7647	>3	0	0	
Oil Cleanliness		ISO 4406 (c)	>/17/13	16/15/11	<b>1</b> /19/14	
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	0.49	0.45	



## **OIL ANALYSIS REPORT**

Water (KF)		VISUAL		method	limit/base	current	history1	history2
12000 Severe		White Metal	scalar	*Visual	NONE	NONE	NONE	
- 8000		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Auto 0000		Precipitate	scalar	*Visual	NONE	NONE	NONE	
₩ 4000		Silt	scalar	*Visual	NONE	NONE	NONE	
2000 -		Debris	scalar	*Visual	NONE	NONE	NONE	
Abnormal		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Jui20/23	May29/24	Appearance	scalar	*Visual	NORML	NORML	NORML	
J. etc	Mayi	Odor	scalar	*Visual	NORML	NORML	NORML	
Particle Trend		Emulsified Water	scalar	*Visual	>0.05	NEG	NEG	
12k 4/m 1		Free Water	scalar	*Visual		NEG	NEG	
Ξ <sup>10k</sup> -		FLUID PROPERT	TIES	method	limit/base	current	history1	history2
l) a 8k appipe 6k		Visc @ 40°C	cSt	ASTM D445	45	50.7	51.0	
jo aquin 4k -		SAMPLE IMAGES	S	method	limit/base	current	history1	history2
2 2k 0k E2/02nr	+2/62/eW	Color						no image
Water (KF)		Bottom						no image
and and a second		GRAPHS						
≥ 4000		Ferrous Alloys				Particle Count		
2000 - Abnormal		10 im			491,520			T <sup>26</sup>
	r,	8 assessment chromium			122,880			-24
Jui20/23	u de la mada	4			30,720			22
7	9 Q	2			30,720-			-22
Viscosity @ 40°C		0			7,680			-20 20
60 L		Jul20/23			May29/24 s (per 1 ml			18 4406
55 - Severe	*****	2					<b>`</b>	+20 4406:1999 Cleanliness Code +16 Cleanliness Code +14 +12
ତ୍ତି 50 - Abnormal		Non-ferrous Metal	s		-11 480 -			-16 Cea
© 50 - 0		copper			ja 120-			-14 es
Abnormal	F	10 - tin						Code
Severe		5			30-		<b>\</b>	+12 0
354	V C.				8	<b>Sibrear</b> nal		-10
Jul20/23	0 <i>0</i> 11				tz 2.			-8
	-	Jul20/23			May29/24			
Particle Trend		Viscosity @ 40°C			≥ 0.4		14µ 21µ	38µ 71µ
$=10k$ $\frac{4\mu m}{6\mu m}$		<sup>60</sup>			- 1.20	Acid Number		
μ		55 Severe		*****	BHO 0.96	Base mal		
topure 6k	40°C)	50 Abnormal 45 Base			Ë 0.72			
10k 5μm   8k 14μm   9b; 16 6k   9b; 16 6k	St.	Abhonnai		*****	(0,1,20 (0,1,20 (0,1,20 (0,1,20 (0,1,20 (0,1,20)			
		Severe			Z 0.24			
0k	and the state of t	351						24 -
Jul20/23	A C D C	Jul20/23			May29/24	Jul20/23		May29/24
	Laboratory :	WearCheck USA - 50	1 Madiso	n Ave Carv			F BLOCK & BRICK	
* - Denc	Sample No. : Lab Number : Unique Number :	KCPA018522 06209233 11076694 IND 2 ( Additional Tes ontact Customer Serv e outside of the ISO 1	Recei Teste Diagr sts: KF, P ice at 1-8 7025 sco	ived : 13 id : 16 nosed : 16 PrtCount ) 800-237-1369 ope of accrea	3 Jun 2024 3 Jun 2024 Jun 2024 - Dou 9. <i>litation.</i>	g Bogart ji	551 Contact: Contact: M.brewer@midw	19 E 15TH ST TULSA, OK US 74112 JIM BREWER

Contact/Location: JIM BREWER - MIDTULOK