KAESER COMPRESSORS
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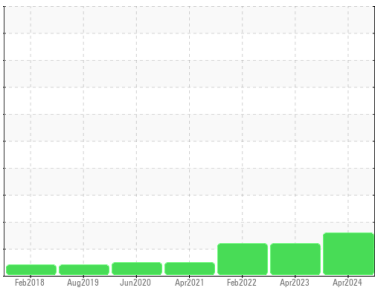
# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Machine Id
## KAESER AS 20T 3103203 (S/N 1368)
Component
**Compressor**
Fluid
**KAESER SIGMA (OEM) M-460 (--- GAL)**

## DIAGNOSIS

**Recommendation**
No corrective action is recommended at this time. Oil and 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 suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **KCPA015097** | KCP53585 | KCP41163 |
| Sample Date | | Client Info | | **01 Apr 2024** | 04 Apr 2023 | 22 Feb 2022 |
| Machine Age | hrs | Client Info | | **56081** | 52325 | 47958 |
| Oil Age | hrs | Client Info | | **3756** | 0 | 4100 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **ABNORMAL** | ATTENTION | ATTENTION |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **1** | 0 | <1 |
| Chromium | ppm | ASTM D5185m | >10 | **<1** | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >3 | **<1** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **<1** | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >10 | **2** | <1 | <1 |
| Lead | ppm | ASTM D5185m | >10 | **0** | 0 | <1 |
| Copper | ppm | ASTM D5185m | >50 | **6** | 11 | 6 |
| Tin | ppm | ASTM D5185m | >10 | **<1** | 0 | 0 |
| Antimony | ppm | ASTM D5185m | | **---** | --- | 0 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Barium | ppm | ASTM D5185m | 90 | **3** | 0 | 5 |
| Molybdenum | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 100 | **27** | 0 | 37 |
| Calcium | ppm | ASTM D5185m | 0 | **4** | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | 0 | **<1** | 0 | 4 |
| Zinc | ppm | ASTM D5185m | 0 | **26** | 0 | 5 |
| Sulfur | ppm | ASTM D5185m | 23500 | **21544** | 24403 | 16693 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **0** | 0 | 0 |
| Sodium | ppm | ASTM D5185m | | **14** | 5 | 20 |
| Potassium | ppm | ASTM D5185m | >20 | **4** | 0 | 4 |
| Water | % | ASTM D6304 | >0.05 | **0.010** | 0.005 | 0.005 |
| ppm Water | ppm | ASTM D6304 | >500 | **109** | 53.5 | 58.2 |

| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Particles >4µm | ASTM D7647 | | **10987** | 5281 | 6128 |
| Particles >6µm | ASTM D7647 | >1300 | ▲ **2937** | ● 1821 | ● 1424 |
| Particles >14µm | ASTM D7647 | >80 | ▲ **201** | ● 103 | ● 109 |
| Particles >21µm | ASTM D7647 | >20 | ▲ **53** | 20 | ● 32 |
| Particles >38µm | ASTM D7647 | >4 | **1** | 0 | 2 |
| Particles >71µm | ASTM D7647 | >3 | **0** | 0 | 0 |
| Oil Cleanliness | ISO 4406 (c) | >--/17/13 | ▲ **21/19/15** | ● 20/18/14 | ● 18/14 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 1.0 | **0.40** | 0.40 | 0.47 |

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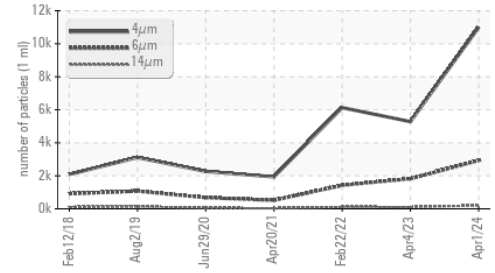
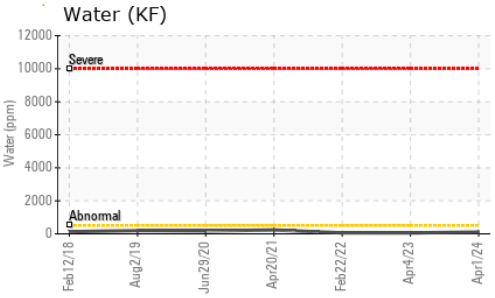
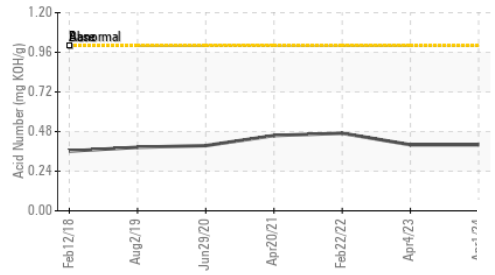
Particle Trend



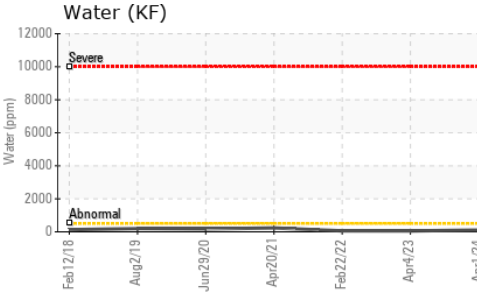

Water (KF)



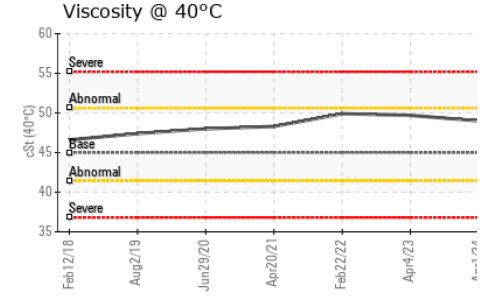

Acid Number




Water (KF)

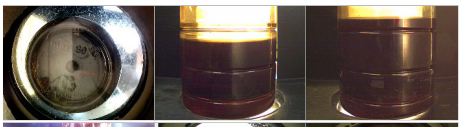
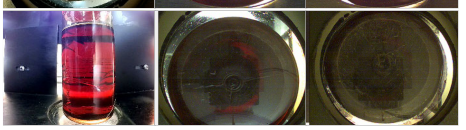



Viscosity @ 40°C



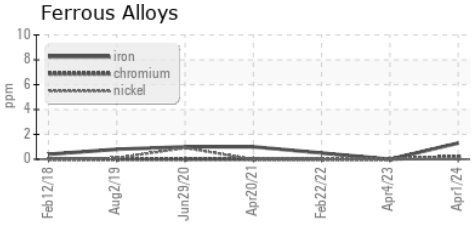

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 | 45 | **49.0** | 49.7 | 49.9 |

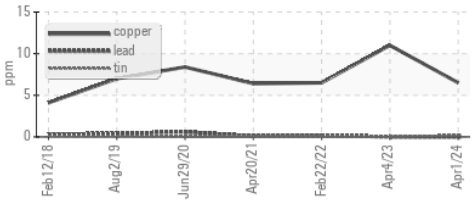
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

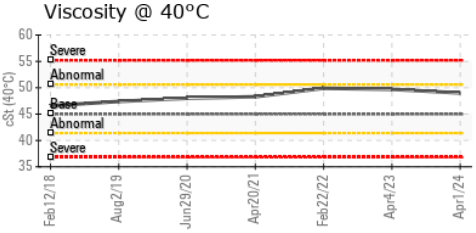
Ferrous Alloys



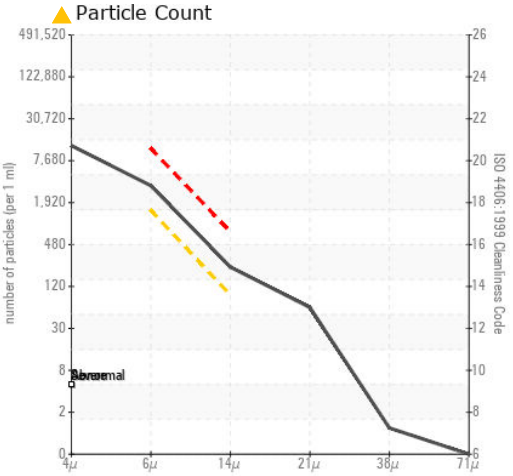

Non-ferrous Metals



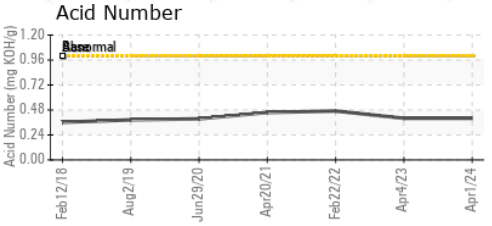

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KCPA015097
**Lab Number** : 06142309
**Unique Number** : 10967117
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

**Received** : 08 Apr 2024
**Tested** : 09 Apr 2024
**Diagnosed** : 10 Apr 2024 - Doug Bogart

**CODI MFG**
14352 W 44TH AVE
GOLDEN, CO
US 80403
Contact: Service Manager

*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: