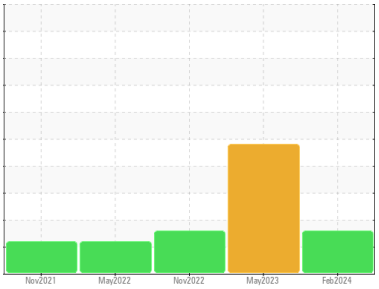
KAESER COMPRESSORS
Built for a lifetime.

# OIL ANALYSIS REPORT

Sample Rating Trend




**WATER**

Machine Id
## 5507198 (S/N 1239)
Component
**Compressor**
Fluid
**KAESER SIGMA (OEM) S-460 (--- GAL)**

## DIAGNOSIS

**Recommendation**
The filter change at the time of sampling has been noted. We advise that you stop the unit and follow the water drain-off procedure for this component. We recommend an early resample in 500 hours to monitor this condition.

**Wear**
All component wear rates are normal.

**Contamination**
There is a light concentration of water present in the oil. The amount and size of particulates present in the system are acceptable.

**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 | | **KCP36778** | KCPA001892 | KCP47580D |
| Sample Date | | Client Info | | **08 Feb 2024** | 28 May 2023 | 11 Nov 2022 |
| Machine Age | hrs | Client Info | | **25821** | 10392 | 22268 |
| Oil Age | hrs | Client Info | | **2033** | 0 | 0 |
| Oil Changed | | Client Info | | **Not Changd** | N/A | Changed |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **0** | <1 | 0 |
| Chromium | ppm | ASTM D5185m | >10 | **0** | <1 | 0 |
| Nickel | ppm | ASTM D5185m | >3 | **0** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | >3 | **0** | <1 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **0** | <1 | 2 |
| Aluminum | ppm | ASTM D5185m | >10 | **0** | 1 | 0 |
| Lead | ppm | ASTM D5185m | >10 | **0** | <1 | <1 |
| Copper | ppm | ASTM D5185m | >50 | **13** | 9 | 16 |
| Tin | ppm | ASTM D5185m | >10 | **0** | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | <1 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Barium | ppm | ASTM D5185m | 90 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Manganese | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | 90 | **6** | 44 | 14 |
| Calcium | ppm | ASTM D5185m | 2 | **0** | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | | **0** | 0 | 4 |
| Zinc | ppm | ASTM D5185m | | **42** | 14 | 43 |
| Sulfur | ppm | ASTM D5185m | | **19957** | 20892 | 20806 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **<1** | <1 | 0 |
| Sodium | ppm | ASTM D5185m | | **5** | 6 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | **0** | 2 | 2 |
| Water | % | ASTM D6304 | >0.05 | ▲ **0.144** | ▲ 0.119 | 0.013 |
| ppm Water | ppm | ASTM D6304 | >500 | ▲ **1440** | ▲ 1190 | 139.8 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | | **826** | --- | 38788 |
| Particles >6µm | | ASTM D7647 | >1300 | **450** | --- | ▲ 11509 |
| Particles >14µm | | ASTM D7647 | >80 | **77** | --- | ▲ 638 |
| Particles >21µm | | ASTM D7647 | >20 | **26** | --- | ▲ 77 |
| Particles >38µm | | ASTM D7647 | >4 | **4** | --- | 2 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | --- | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | **17/16/13** | --- | ▲ 22/21/16 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.4 | **0.25** | 0.31 | 0.25 |

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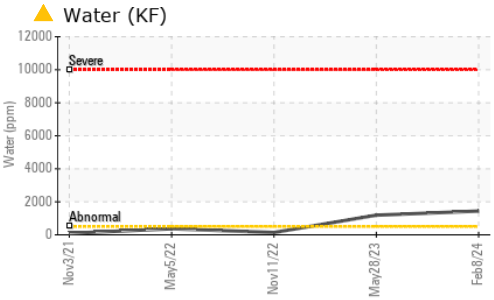
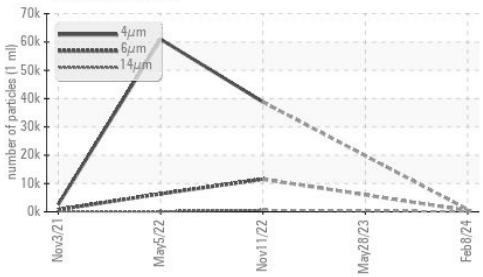
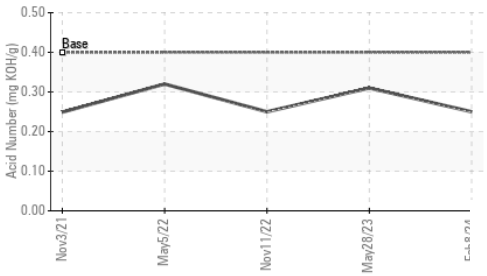
Water (KF)



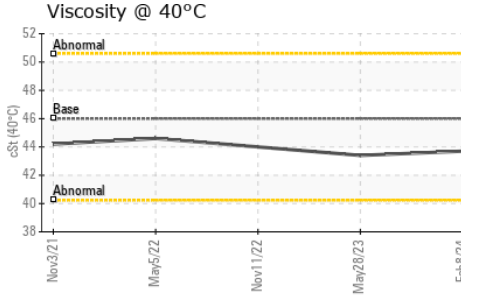

Particle Trend



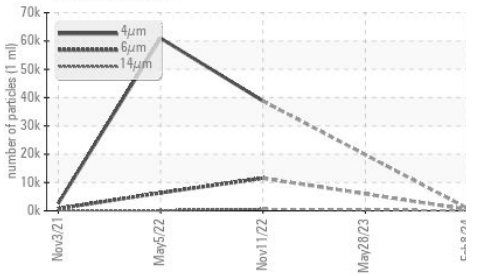

Acid Number




Viscosity @ 40°C

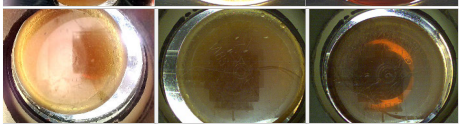



Particle Trend



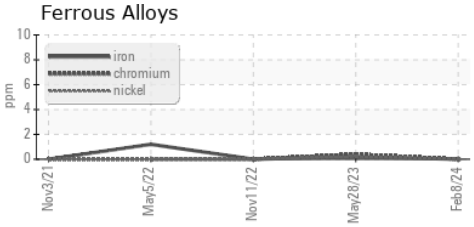

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | ▲ MODER | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Appearance | scalar | *Visual | NORML | **NORML** | ● HAZY | NORML |
| Odor | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.05 | **0.2%** | 0.2% | NEG |
| Free Water | scalar | *Visual | | **NEG** | ▲ 1.0 | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 46 | **43.7** | 43.4 | 44.0 |

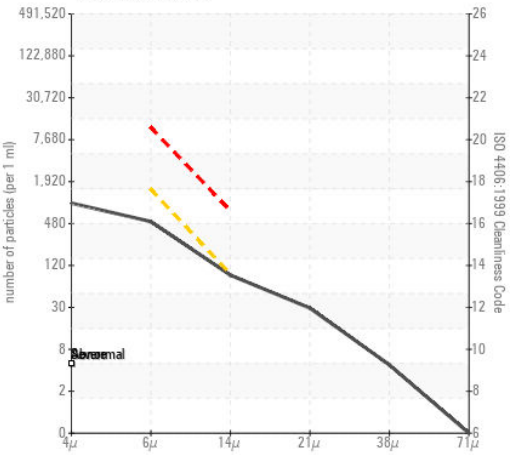
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

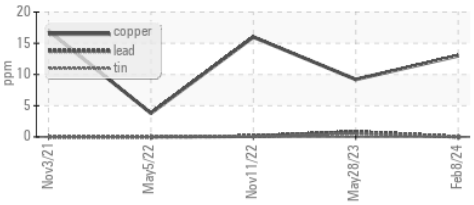
Ferrous Alloys



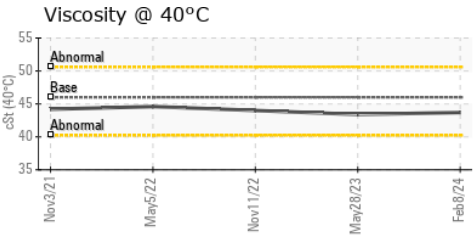

Particle Count



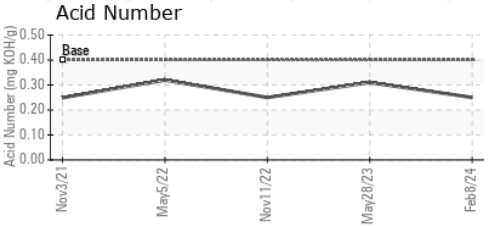

Non-ferrous Metals




Viscosity @ 40°C




Acid Number




ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KCP36778
**Lab Number** : 06130623
**Unique Number** : 10950088
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

**Received** : 27 Mar 2024
**Tested** : 04 Apr 2024
**Diagnosed** : 04 Apr 2024 - Jonathan Hester

**TOKAI CARBON**
301 COMMERCE ST, SUITE 500
FORT WORTH, TX
US 76102
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: