KAESER COMPRESSORS
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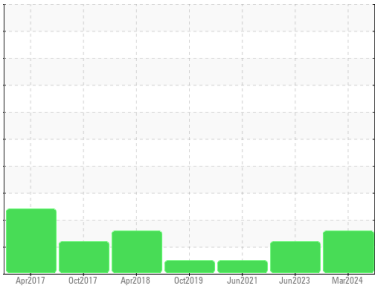
# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Machine Id
## KAESER SM 10 5696512 (S/N 2280)
Component
**Compressor**
Fluid
**KAESER SIGMA (OEM) M-460 (--- QTS)**

## 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 | | **KCPA015044** | KCPA002152 | KCP33912 |
| Sample Date | | Client Info | | **22 Mar 2024** | 16 Jun 2023 | 08 Jun 2021 |
| Machine Age | hrs | Client Info | | **56955** | 50304 | 33283 |
| Oil Age | hrs | Client Info | | **11924** | 0 | 5878 |
| Oil Changed | | Client Info | | **Changed** | N/A | Not Changd |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **0** | 0 | 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 | **10** | 5 | 4 |
| Tin | ppm | ASTM D5185m | >10 | **0** | 0 | <1 |
| Antimony | ppm | ASTM D5185m | | **---** | --- | 0 |
| Vanadium | ppm | ASTM D5185m | | **<1** | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **0** | 0 | 16 |
| Barium | ppm | ASTM D5185m | 90 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | 100 | **<1** | 38 | 24 |
| Calcium | ppm | ASTM D5185m | 0 | **0** | 2 | 0 |
| Phosphorus | ppm | ASTM D5185m | 0 | **0** | 3 | 4 |
| Zinc | ppm | ASTM D5185m | 0 | **27** | 16 | 15 |
| Sulfur | ppm | ASTM D5185m | 23500 | **21423** | 24150 | 16161 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **<1** | 0 | 0 |
| Sodium | ppm | ASTM D5185m | | **2** | 9 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | **<1** | 2 | 0 |
| Water | % | ASTM D6304 | >0.05 | **0.007** | 0.017 | 0.012 |
| ppm Water | ppm | ASTM D6304 | >500 | **80** | 172.1 | 121.3 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | | **17888** | 12327 | 2113 |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **6123** | ▲ 2785 | 814 |
| Particles >14µm | | ASTM D7647 | >80 | ▲ **741** | ▲ 122 | 37 |
| Particles >21µm | | ASTM D7647 | >20 | ▲ **221** | 20 | 4 |
| Particles >38µm | | ASTM D7647 | >4 | **4** | 1 | 0 |
| Particles >71µm | | ASTM D7647 | >3 | **1** | 1 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | ▲ **21/20/17** | ▲ 21/19/14 | 17/12 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 1.0 | **0.39** | 0.45 | 0.397 |

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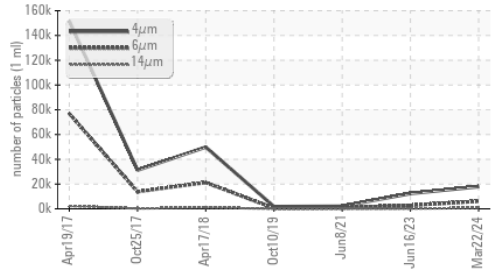
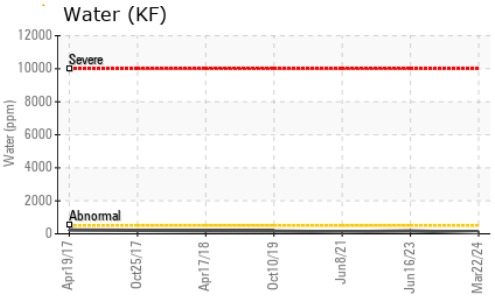
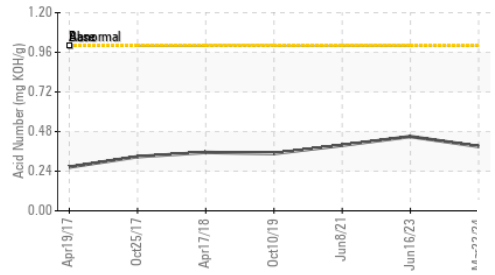
Particle Trend



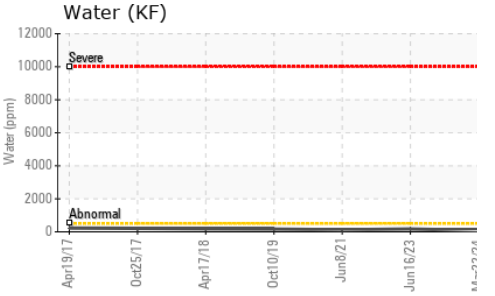

Water (KF)



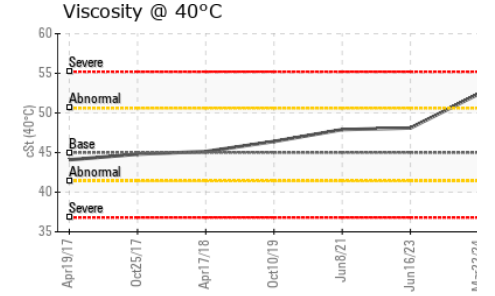

Acid Number




Water (KF)

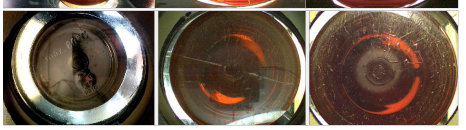



Viscosity @ 40°C



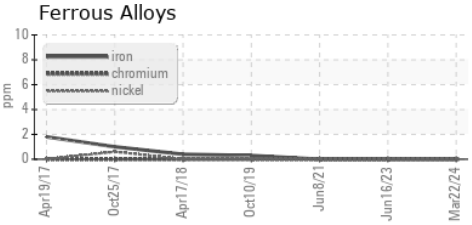

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 | **52.4** | 48.1 | 47.9 |

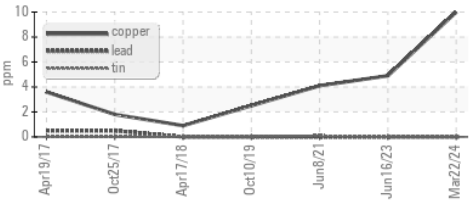
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

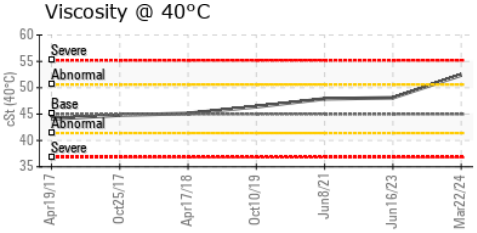
Ferrous Alloys



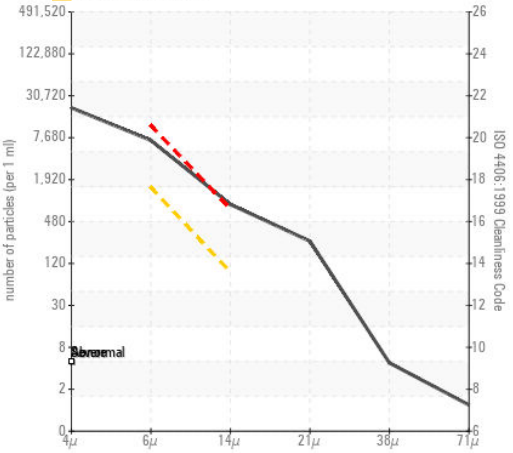

Non-ferrous Metals



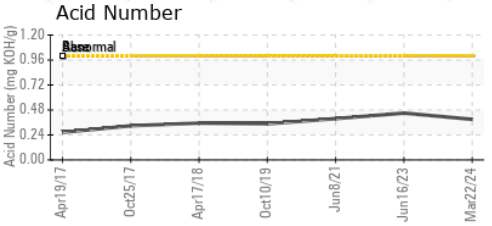

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KCPA015044
**Lab Number** : 06134027
**Unique Number** : 10953492
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )
**Received** : 29 Mar 2024
**Tested** : 01 Apr 2024
**Diagnosed** : 03 Apr 2024 - Don Baldridge

**OLD DOMINION**
1250 BRIDGESTONE PKWY
LAVERNE, TN
US 37086
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: