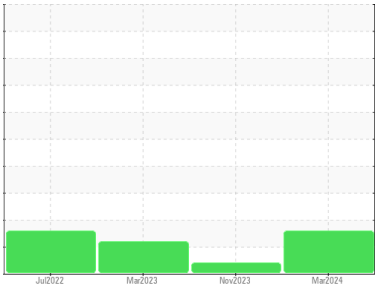
KAESER COMPRESSORS
Built for a lifetime.

# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Machine Id
## KAESER CSD 125 7941425 (S/N 1084)
Component
**Compressor**
Fluid
**KAESER SIGMA (OEM) M-460 (--- GAL)**

## DIAGNOSIS

**Recommendation**
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 acceptable for the time in service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **KCPA014987** | KCPA009477 | KCPA000258 |
| Sample Date | | Client Info | | **18 Mar 2024** | 16 Nov 2023 | 14 Mar 2023 |
| Machine Age | hrs | Client Info | | **12357** | 10767 | 7798 |
| Oil Age | hrs | Client Info | | **1927** | 0 | 0 |
| Oil Changed | | Client Info | | **Changed** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **0** | 0 | <1 |
| Chromium | ppm | ASTM D5185m | >10 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >3 | **<1** | 0 | <1 |
| Titanium | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >10 | **1** | 0 | 1 |
| Lead | ppm | ASTM D5185m | >10 | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >50 | **2** | 4 | 3 |
| 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 | 0 |
| Barium | ppm | ASTM D5185m | 90 | **72** | 2 | 58 |
| Molybdenum | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 100 | **86** | 27 | 55 |
| Calcium | ppm | ASTM D5185m | 0 | **2** | 0 | 1 |
| Phosphorus | ppm | ASTM D5185m | 0 | **0** | 2 | 7 |
| Zinc | ppm | ASTM D5185m | 0 | **<1** | 0 | 2 |
| Sulfur | ppm | ASTM D5185m | 23500 | **23751** | 17816 | 22249 |

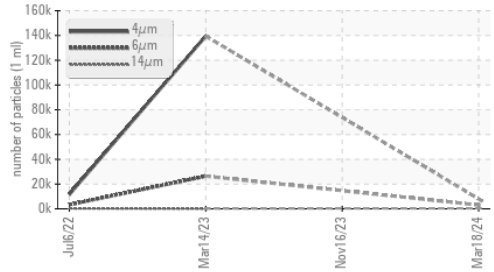
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **0** | 0 | 1 |
| Sodium | ppm | ASTM D5185m | | **14** | 11 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | **4** | <1 | 2 |
| Water | % | ASTM D6304 | >0.05 | **0.023** | 0.018 | 0.011 |
| ppm Water | ppm | ASTM D6304 | >500 | **230** | 188 | 114.8 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | | **7984** | --- | 139511 |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **3030** | --- | ▲ 26388 |
| Particles >14µm | | ASTM D7647 | >80 | ▲ **379** | --- | ● 100 |
| Particles >21µm | | ASTM D7647 | >20 | ▲ **124** | --- | 7 |
| Particles >38µm | | ASTM D7647 | >4 | **6** | --- | 1 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | --- | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | ▲ **20/19/16** | --- | ▲ 24/22/14 |

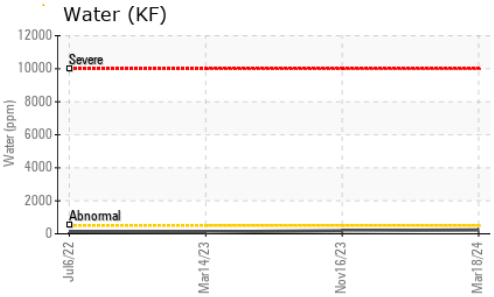
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 1.0 | **0.46** | 0.37 | 0.45 |

# OIL ANALYSIS REPORT

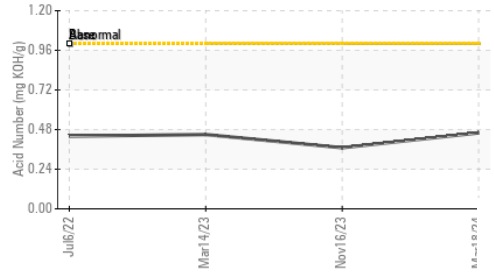
Particle Trend



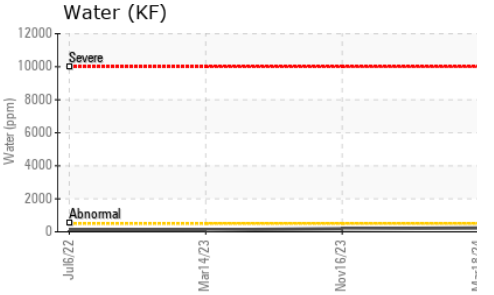

Water (KF)



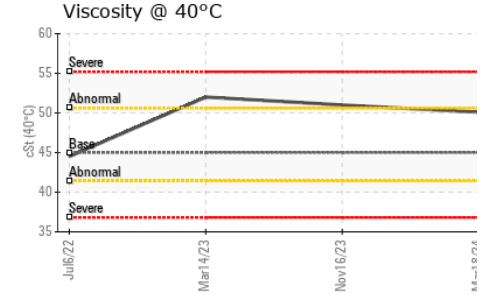

Acid Number




Water (KF)




Viscosity @ 40°C



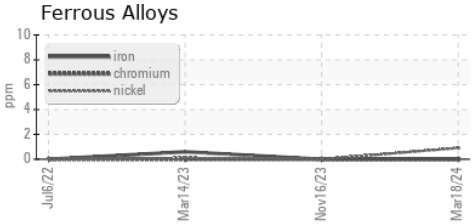

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | ▲ MODER | 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 | **50.1** | 51.0 | 52.0 |

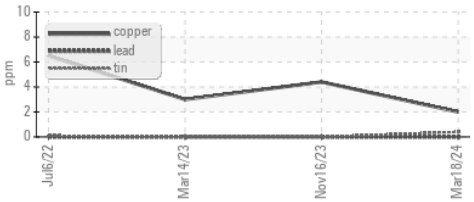
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

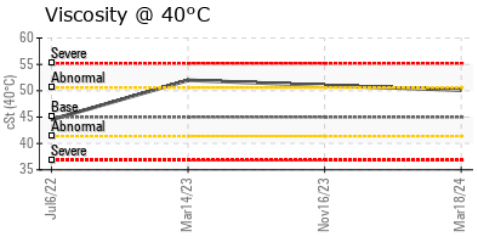
Ferrous Alloys



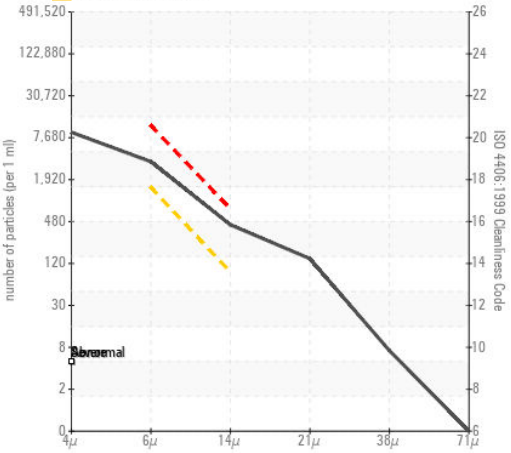

Non-ferrous Metals



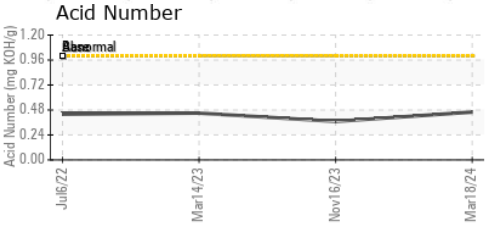

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KCPA014987
**Lab Number** : 06132024
**Unique Number** : 10951489
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

**Received** : 28 Mar 2024
**Tested** : 29 Mar 2024
**Diagnosed** : 02 Apr 2024 - Angela Borella

**ALPINE WASTE & RECYCLING**
645 W 53RD PL
DENVER, CO
US 80216
Contact: S. MANZANARES
smanzanares@republicservices.com
T:
F:

*To discuss this sample report, contact Customer Service at 1-800-237-1369.*
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*Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)*