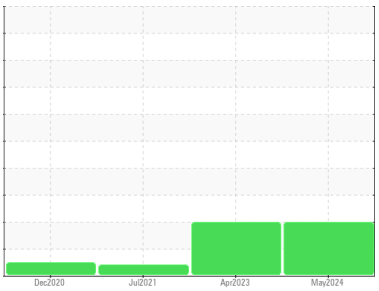
KAESER COMPRESSORS
Built for a lifetime.

# OIL ANALYSIS REPORT

Sample Rating Trend




**WATER**

Machine Id
## KAESER 5310599
Component
**Compressor**
Fluid
**KAESER SIGMA (OEM) S-460 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Oil and filter change at the time of sampling has been noted. We were unable to perform a particle count due to a high concentration of particles present in this sample. 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. High concentration of visible dirt/debris 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 | | **KCPA017543** | KCPA001109 | KCP42262 |
| Sample Date | | Client Info | | **01 May 2024** | 05 Apr 2023 | 09 Jul 2021 |
| Machine Age | hrs | Client Info | | **44588** | 39607 | 32590 |
| Oil Age | hrs | Client Info | | **0** | 7017 | 2559 |
| Oil Changed | | Client Info | | **Changed** | Changed | 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 | **0** | 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 | <1 |
| Copper | ppm | ASTM D5185m | >50 | **13** | 7 | 11 |
| Tin | ppm | ASTM D5185m | >10 | **<1** | 0 | 0 |
| Antimony | ppm | ASTM D5185m | | **---** | --- | 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 | <1 |
| Barium | ppm | ASTM D5185m | 90 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **1** | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | 90 | **0** | <1 | 3 |
| Calcium | ppm | ASTM D5185m | 2 | **0** | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | | **<1** | 5 | 8 |
| Zinc | ppm | ASTM D5185m | | **0** | 0 | 9 |
| Sulfur | ppm | ASTM D5185m | | **16611** | 15173 | 16039 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **0** | 0 | 0 |
| Sodium | ppm | ASTM D5185m | | **1** | <1 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Water | % | ASTM D6304 | >0.05 | ▲ **0.116** | 0.004 | 0.008 |
| ppm Water | ppm | ASTM D6304 | >500 | ▲ **1160** | 47.6 | 81.7 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | | **---** | 10809 | --- |
| Particles >6µm | | ASTM D7647 | >1300 | **---** | ▲ 2989 | --- |
| Particles >14µm | | ASTM D7647 | >80 | **---** | ▲ 178 | --- |
| Particles >21µm | | ASTM D7647 | >20 | **---** | ▲ 30 | --- |
| Particles >38µm | | ASTM D7647 | >4 | **---** | ▲ 5 | --- |
| Particles >71µm | | ASTM D7647 | >3 | **---** | 0 | --- |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | **---** | ▲ 21/19/15 | --- |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.4 | **0.39** | 0.37 | 0.387 |

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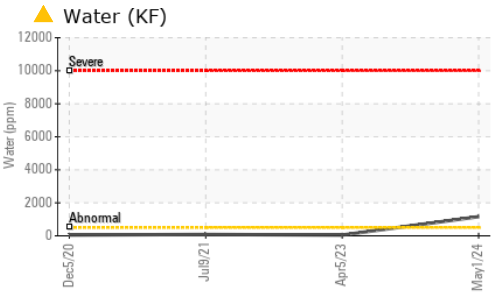
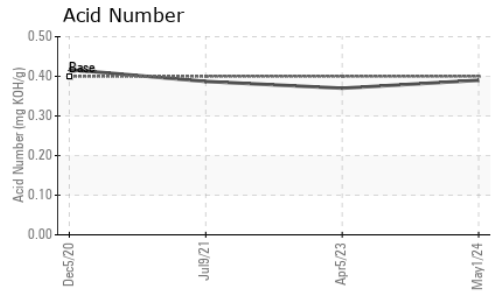
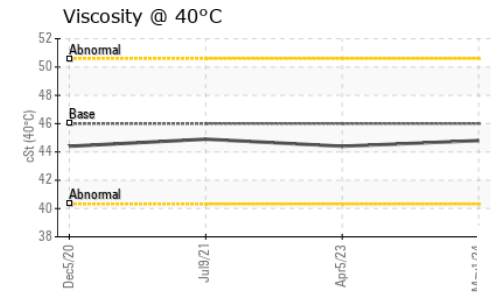
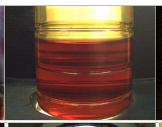
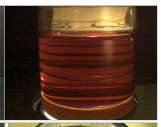
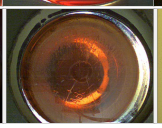


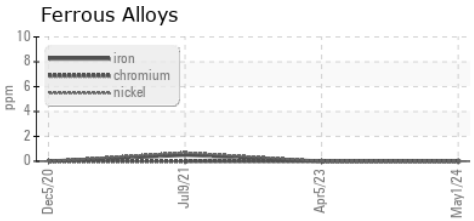



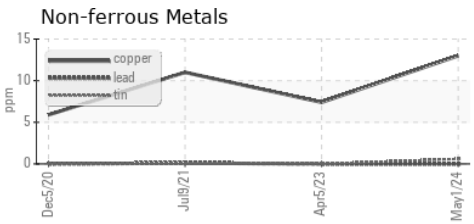

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | ▲ **HEAVY** | LIGHT | ▲ MODER |
| 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 | **0.2%** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

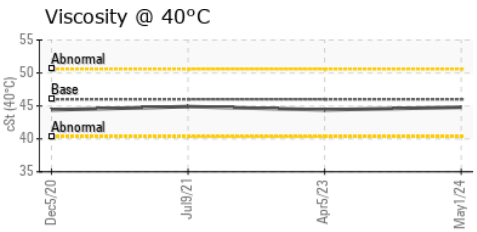
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 46 | **44.8** | 44.4 | 44.9 |

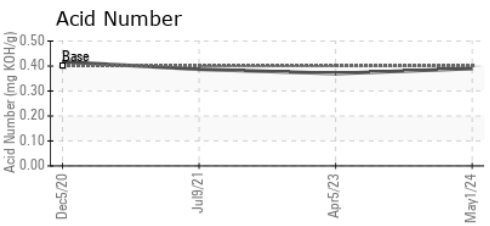
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  |  |  |
| Bottom | | |  |  |  |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KCPA017543
**Lab Number** : 06177120
**Unique Number** : 11023173
**Test Package** : IND 2 ( Additional Tests: KF, PrtCount )

**Received** : 13 May 2024
**Tested** : 16 May 2024
**Diagnosed** : 16 May 2024 - Angela Borella

**CINTAS**
603 AIRLINE DR
COPPELL, TX
US 75019
Contact: Service Manager
T:
F:

*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)*