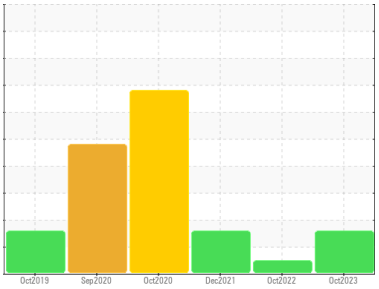
# PROBLEM SUMMARY

Sample Rating Trend

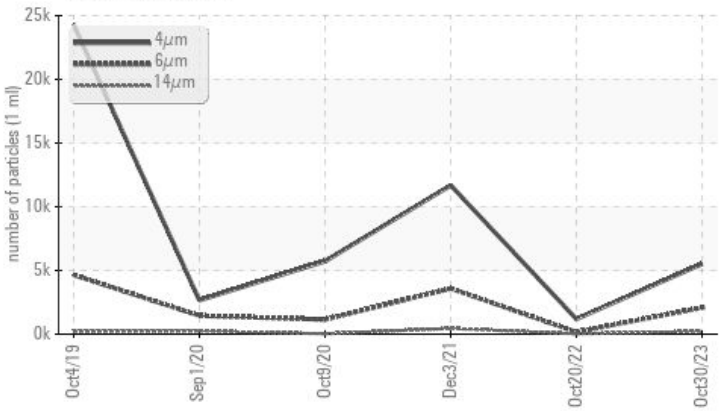



ISO

Machine Id
## KAESER BSD 50 6528089 (S/N 1942)
Component
**Compressor**
Fluid
**KAESER SIGMA (OEM) S-460 (--- GAL)**

## COMPONENT CONDITION SUMMARY

Particle Trend




## 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.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | ABNORMAL | NORMAL | ABNORMAL |
|---|---|---|---|---|---|---|
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **2072** | 159 | ▲ 3583 |
| Particles >14µm | | ASTM D7647 | >80 | ▲ **222** | 19 | ▲ 449 |
| Particles >21µm | | ASTM D7647 | >20 | ▲ **50** | 5 | ▲ 108 |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | ▲ **20/18/15** | 17/14/11 | ▲ 19/16 |


**Customer Id:** FORFRAKC
**Sample No.:** KC107858
**Lab Number:** 06007729
**Test Package:** IND 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Don Baldridge +1
don.b505@comcast.net

*To change component or sample information:*
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Change Fluid | --- | --- | ? | Oil and filter change at the time of sampling has been noted. |
| Change Filter | --- | --- | ? | Oil and filter change at the time of sampling has been noted. |

## HISTORICAL DIAGNOSIS

**20 Oct 2022 Diag: Don Baldridge**

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

**03 Dec 2021 Diag: Don Baldridge**

ISO

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.All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

**09 Oct 2020 Diag:**

WEAR

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.The copper level is abnormal. An increase in the lead level is noted. The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

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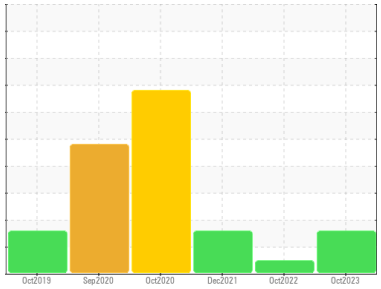
# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Machine Id
## KAESER BSD 50 6528089 (S/N 1942)
Component
**Compressor**
Fluid
**KAESER SIGMA (OEM) S-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 | | **KC107858** | KC95771 | KC58054 |
| Sample Date | | Client Info | | **30 Oct 2023** | 20 Oct 2022 | 03 Dec 2021 |
| Machine Age | hrs | Client Info | | **8274** | 6352 | 5065 |
| Oil Age | hrs | Client Info | | **1923** | 1287 | 1547 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **ABNORMAL** | NORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **0** | <1 | <1 |
| Chromium | ppm | ASTM D5185m | >10 | **0** | <1 | 0 |
| Nickel | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >3 | **<1** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **0** | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >10 | **0** | 1 | <1 |
| Lead | ppm | ASTM D5185m | >10 | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >50 | **6** | 4 | 5 |
| Tin | ppm | ASTM D5185m | >10 | **0** | <1 | <1 |
| 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 | 17 |
| Barium | ppm | ASTM D5185m | 90 | **0** | 5 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | 90 | **0** | 51 | 28 |
| Calcium | ppm | ASTM D5185m | 2 | **0** | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | | **0** | 6 | 2 |
| Zinc | ppm | ASTM D5185m | | **0** | 11 | 11 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **0** | <1 | <1 |
| Sodium | ppm | ASTM D5185m | | **5** | 14 | 9 |
| Potassium | ppm | ASTM D5185m | >20 | **0** | 4 | 2 |
| Water | % | ASTM D6304 | >0.05 | **0.006** | 0.017 | 0.009 |
| ppm Water | ppm | ASTM D6304 | >500 | **67.4** | 176.6 | 95.4 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | | **5512** | 1186 | 11680 |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **2072** | 159 | ▲ 3583 |
| Particles >14µm | | ASTM D7647 | >80 | ▲ **222** | 19 | ▲ 449 |
| Particles >21µm | | ASTM D7647 | >20 | ▲ **50** | 5 | ▲ 108 |
| Particles >38µm | | ASTM D7647 | >4 | **0** | 1 | ▲ 10 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | ▲ **20/18/15** | 17/14/11 | ▲ 19/16 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.4 | **0.37** | 0.41 | 0.093 |

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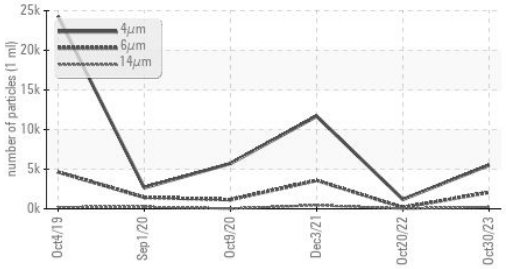
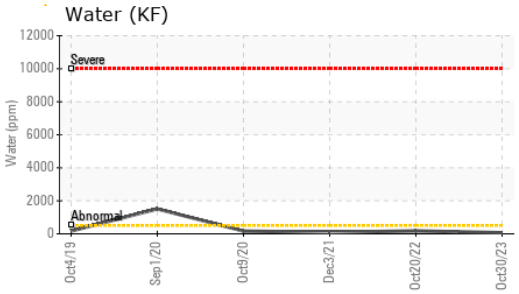
# OIL ANALYSIS REPORT

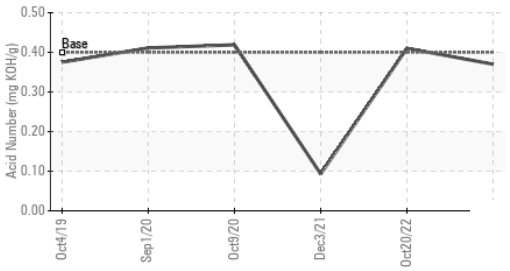
Particle Trend



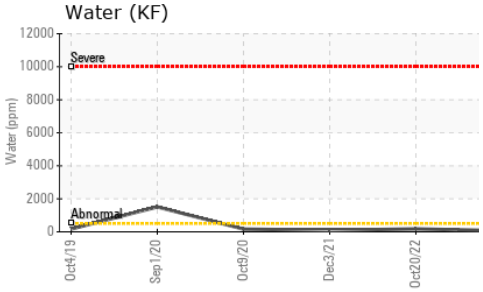

Water (KF)



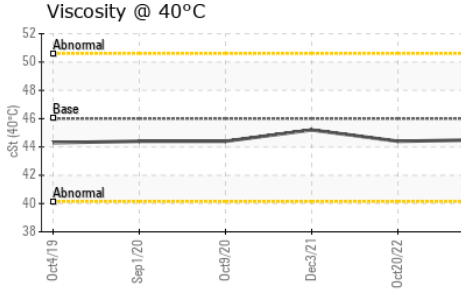

Acid Number




Water (KF)

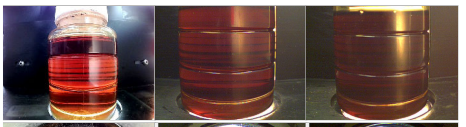



Viscosity @ 40°C



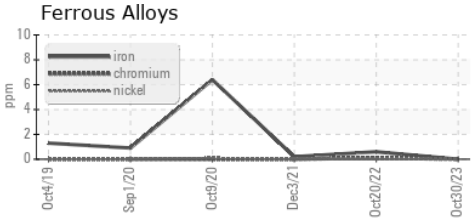

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | VLITE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | LIGHT |
| 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 | 46 | **44.5** | 44.4 | 45.2 |

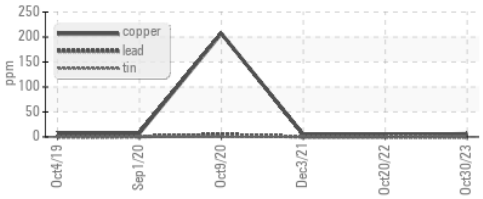
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

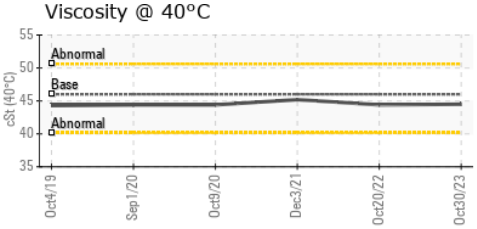
Ferrous Alloys



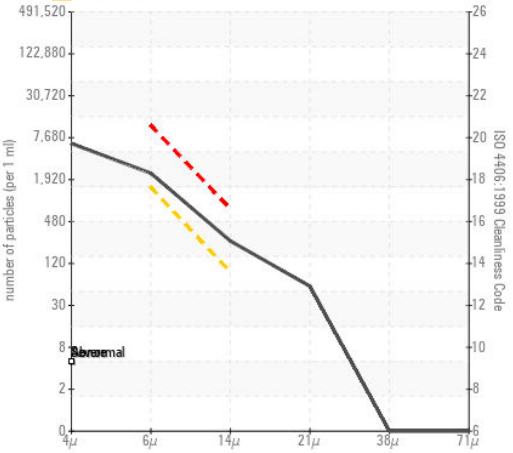

Non-ferrous Metals



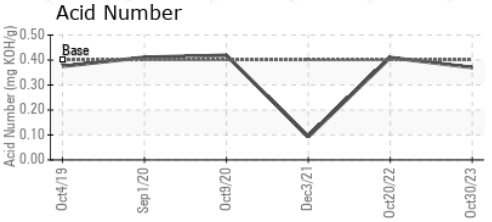

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KC107858
**Lab Number** : 06007729
**Unique Number** : 10741491
**Test Package** : IND 2

**Received** : 14 Nov 2023
**Diagnosed** : 16 Nov 2023
**Diagnostician** : Don Baldridge

**FORMEL INDUSTRIES**
11323 FRANKLIN AVE
FRANKLIN PARK, IL
US 60131
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: