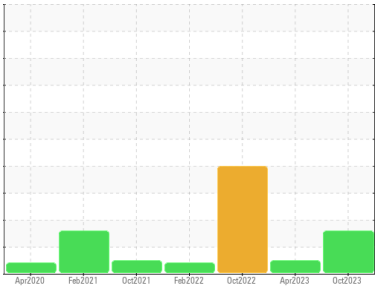
# PROBLEM SUMMARY

Sample Rating Trend

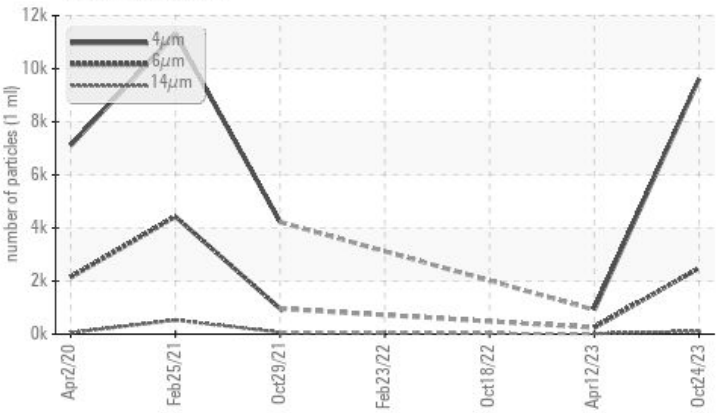



ISO

Machine Id
**6939041 (S/N 1254)**
Component
**Compressor**
Fluid
**KAESER SIGMA (OEM) S-460 (--- QTS)**

## 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 | | | | ATTENTION | NORMAL | ABNORMAL |
|---|---|---|---|---|---|---|
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **2486** | 250 | --- |
| Particles >14µm | | ASTM D7647 | >80 | ▲ **110** | 16 | --- |
| Particles >21µm | | ASTM D7647 | >20 | ▲ **25** | 4 | --- |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | ▲ **20/18/14** | 17/15/11 | --- |

**Customer Id:** CHEKER
**Sample No.:** KC111671
**Lab Number:** 05995633
**Test Package:** IND 2

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
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*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

**12 Apr 2023 Diag: Angela Borella**

NORMAL

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. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

**18 Oct 2022 Diag: Don Baldridge**

WATER

The filter change at the time of sampling has been noted. There is too much water present in this sample to perform a particle count. 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.All component wear rates are normal. There is a moderate concentration of water present in the oil. Free water present. The AN level is acceptable for this fluid.

view report

**23 Feb 2022 Diag: Angela Borella**

VIS DEBRIS

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.All component wear rates are normal. Moderate concentration of visible dirt/debris present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

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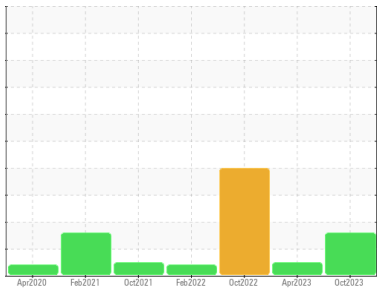
# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Machine Id
**6939041 (S/N 1254)**
Component
**Compressor**
Fluid
**KAESER SIGMA (OEM) S-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 moderate 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 | | **KC111671** | KC104247 | KC103067 |
| Sample Date | | Client Info | | **24 Oct 2023** | 12 Apr 2023 | 18 Oct 2022 |
| Machine Age | hrs | Client Info | | **13001** | 11338 | 11071 |
| Oil Age | hrs | Client Info | | **2600** | 1111 | 800 |
| Oil Changed | | Client Info | | **Not Changd** | Changed | Not Changd |
| Sample Status | | | | **ATTENTION** | NORMAL | 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 | 0 |
| Titanium | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >10 | **<1** | <1 | 1 |
| Lead | ppm | ASTM D5185m | >10 | **0** | 0 | <1 |
| Copper | ppm | ASTM D5185m | >50 | **4** | 4 | 7 |
| Tin | ppm | ASTM D5185m | >10 | **<1** | 0 | <1 |
| Antimony | ppm | ASTM D5185m | | **---** | --- | --- |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | <1 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Barium | ppm | ASTM D5185m | 90 | **17** | 0 | 10 |
| Molybdenum | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 90 | **48** | 45 | 22 |
| Calcium | ppm | ASTM D5185m | 2 | **2** | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | | **<1** | 0 | 5 |
| Zinc | ppm | ASTM D5185m | | **1** | 0 | 6 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **1** | 2 | 3 |
| Sodium | ppm | ASTM D5185m | | **16** | 17 | 5 |
| Potassium | ppm | ASTM D5185m | >20 | **4** | 2 | 3 |
| Water | % | ASTM D6304 | >0.05 | **0.015** | 0.009 | ▲ 0.457 |
| ppm Water | ppm | ASTM D6304 | >500 | **152.2** | 90.2 | ▲ 4570 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | | **9614** | 913 | --- |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ **2486** | 250 | --- |
| Particles >14µm | | ASTM D7647 | >80 | ▲ **110** | 16 | --- |
| Particles >21µm | | ASTM D7647 | >20 | ▲ **25** | 4 | --- |
| Particles >38µm | | ASTM D7647 | >4 | **1** | 1 | --- |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 0 | --- |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | ▲ **20/18/14** | 17/15/11 | --- |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.4 | **0.28** | 0.31 | 0.28 |

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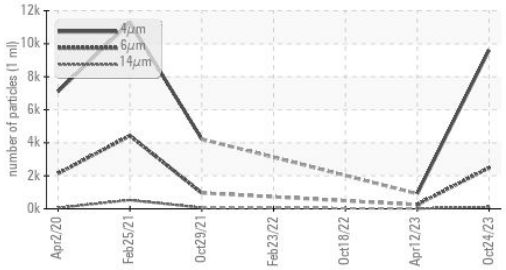
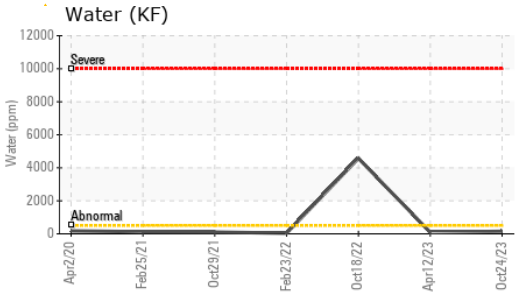
# OIL ANALYSIS REPORT

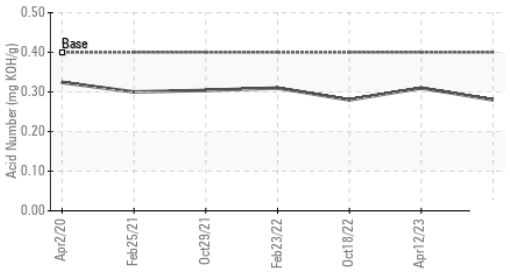
Particle Trend



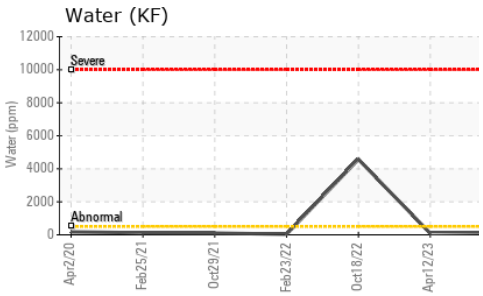

Water (KF)



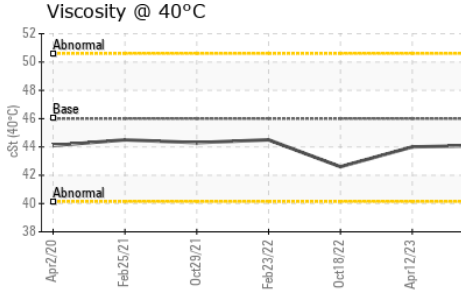

Acid Number




Water (KF)

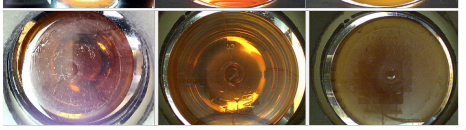



Viscosity @ 40°C



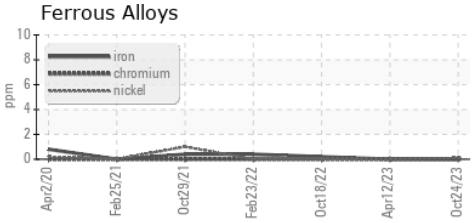

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 46 | **44.1** | 44.0 | 42.6 |

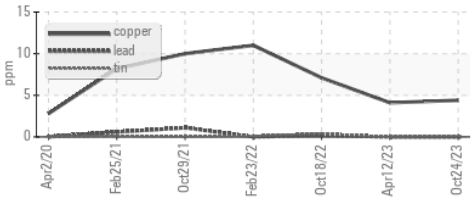
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

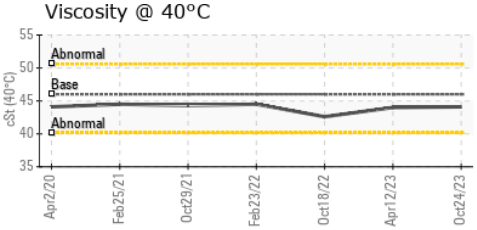
Ferrous Alloys



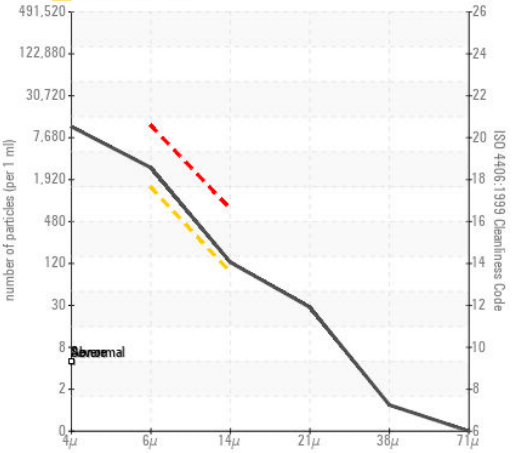

Non-ferrous Metals



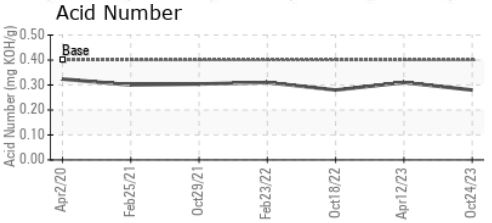

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KC111671
**Lab Number** : 05995633
**Unique Number** : 10723993
**Test Package** : IND 2

**Received** : 01 Nov 2023
**Diagnosed** : 02 Nov 2023
**Diagnostician** : Don Baldridge

*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)*

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