

### **OIL ANALYSIS REPORT**

#### Sample Rating Trend



# KAESER 7044341

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. We were unable to perform a particle count due to a high concentration of particles present in this sample.

#### Wear

All component wear rates are normal.

#### Contamination

Moderate 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 suitable for further service.

| SAMPLE INFORM    | IATION   | method      | limit/base | current     | history1    | history2 |
|------------------|----------|-------------|------------|-------------|-------------|----------|
| Sample Number    |          | Client Info |            | KC102003    | KC82735     |          |
| Sample Date      |          | Client Info |            | 31 Jan 2023 | 03 Jan 2022 |          |
| Machine Age      | hrs      | Client Info |            | 767         | 177         |          |
| Oil Age          | hrs      | Client Info |            | 590         | 0           |          |
| Oil Changed      |          | Client Info |            | Changed     | Changed     |          |
| Sample Status    |          |             |            | ABNORMAL    | ABNORMAL    |          |
| WEAR METALS      |          | method      | limit/base | current     | history1    | history2 |
| Iron             | ppm      | ASTM D5185m | >50        | <1          | <1          |          |
| Chromium         | ppm      | ASTM D5185m | >10        | 0           | 0           |          |
| Nickel           | ppm      | ASTM D5185m | >3         | <1          | 0           |          |
| Titanium         | ppm      | ASTM D5185m | >3         | 0           | 0           |          |
| Silver           | ppm      | ASTM D5185m | >2         | 0           | <1          |          |
| Aluminum         | ppm      | ASTM D5185m | >10        | <1          | 0           |          |
| Lead             | ppm      | ASTM D5185m | >10        | 0           | 0           |          |
| Copper           | ppm      | ASTM D5185m | >50        | 4           | 1           |          |
| Tin              | ppm      | ASTM D5185m | >10        | 0           | <1          |          |
| Antimony         | ppm      | ASTM D5185m |            |             | 0           |          |
| Vanadium         | ppm      | ASTM D5185m |            | 0           | 0           |          |
| Cadmium          | ppm      | ASTM D5185m |            | 0           | 0           |          |
| ADDITIVES        |          | method      | limit/base | current     | history1    | history2 |
| Boron            | ppm      | ASTM D5185m |            | 0           | 23          |          |
| Barium           | ppm      | ASTM D5185m | 90         | 0           | 0           |          |
| Molybdenum       | ppm      | ASTM D5185m |            | 0           | 0           |          |
| Manganese        | ppm      | ASTM D5185m |            | <1          | <1          |          |
| Magnesium        | ppm      | ASTM D5185m | 90         | 37          | 22          |          |
| Calcium          | ppm      | ASTM D5185m | 2          | 2           | 0           |          |
| Phosphorus       | ppm      | ASTM D5185m |            | 11          | 3           |          |
| Zinc             | ppm      | ASTM D5185m |            | 7           | 8           |          |
| CONTAMINANTS     |          | method      | limit/base | current     | history1    | history2 |
| Silicon          | ppm      | ASTM D5185m | >25        | <1          | 0           |          |
| Sodium           | ppm      | ASTM D5185m |            | 19          | 4           |          |
| Potassium        | ppm      | ASTM D5185m | >20        | 3           | <1          |          |
| Water            | %        | ASTM D6304  | >0.05      | 0.023       | 0.018       |          |
| ppm Water        | ppm      | ASTM D6304  | >500       | 232.6       | 186.1       |          |
| FLUID DEGRADA    | TION     | method      | limit/base | current     | history1    | history2 |
| Acid Number (AN) | mg KOH/g | ASTM D8045  | 0.4        | 0.29        | 0.232       |          |



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method limit/base

current

historv1

historv2

|             | Bu                   | ilt for a lifetime."  |  |     |
|-------------|----------------------|-----------------------|--|-----|
| 1           | 2000-                | Water (KF)            | VISUAL   |     |
| 1           | 0000.                | Severe                | White Metal<br>Yellow Metal  | SC  |
| Water (ppm) | 8000 •<br>6000 •     |                       | Precipitate  | SC  |
| Na<br>N     | 4000.                |                       | Silt   | SC  |
|             | 2000 •               |                       | Debris   | SC  |
|             | 0                    | Abnormal              | Sand/Dirt  | SC  |
|             |                      | Jan 3/22<br>Jan 31/23 | Appearance   | SC  |
|             |                      | Lan La                | Odor   | SC  |
|             |                      | Water (KF)            | Emulsified Water   | SC  |
| 1           | 2000-                |                       | Free Water   | SC  |
|             | 0000.                | Severe<br>O           | FLUID PROPER   |     |
| Water (ppm) | 8000 •<br>6000 •     |                       | Visc @ 40°C  | cS  |
| Wate        | 4000.                |                       | SAMPLE IMAGE   | ES  |
|             | 2000 •               | Abnormal<br>EZVIEuer  | Color  |     |
|             | 52 -<br>50 -<br>48 - | Viscosity @ 40°C      | Bottom   |     |
|             | (0-046 ·<br>44 ·     | Base                  | GRAPHS   |     |
|             | 42.                  |                       | Ferrous Alloys   |     |
|             | 40.                  | Abnormal              | 10<br>8iron  |     |
|             | 38]                  | Jan3/22 -             | etromum<br>6<br>4<br>2<br>0<br>5<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7<br>7 |     |
|             |                      |                       | Non-ferrous Met  | ale |

|                          | VISUAL   |                            | method    | limit/base                                    | current       | history1   | history2                 |
|--------------------------|--|----------------------------|-----------|---|---------------|------------|--------------------------|
|                          | White Metal  | scalar '                   | *Visual   | NONE  | NONE          | NONE       |                          |
|                          | Yellow Metal   |                            | *Visual   | NONE  | NONE          | NONE       |                          |
|                          | Precipitate  |                            | *Visual   | NONE  | NONE          | NONE       |                          |
|                          | Silt   |                            | *Visual   | NONE  | NONE          | NONE       |                          |
|                          | Debris   |                            | *Visual   | NONE  |               | A MODER    |                          |
|                          | Sand/Dirt  |                            | *Visual   | NONE  | NONE          | NONE       |                          |
| 1/23 -                   | Appearance   |                            | *Visual   | NORML   | NORML         | NORML      |                          |
| Jan 31/23                | Odor   |                            | *Visual   | NORML   | NORML         | NORML      |                          |
|                          | Emulsified Water   |                            | *Visual   | >0.05   | NEG           | NEG        |                          |
|                          | Free Water   |                            | *Visual   |   | NEG           | NEG        |                          |
|                          | FLUID PROPERT  | TIES                       | method    | limit/base                                    | current       | history1   | history2                 |
|                          | Visc @ 40°C  |                            | ASTM D445 | 46  | 43.6          | 43.6       |                          |
|                          | SAMPLE IMAGES  | S                          | method    | limit/base                                    | current       | history1   | history2                 |
|                          |  | 5                          | method    |   | ourient       |            | motoryz                  |
| Jan 31/23                | Color  |                            |           |   |               |            | no image                 |
|                          | Bottom   |                            |           |   |               |            | no image                 |
|                          | GRAPHS   |                            |           |   |               |            |                          |
|                          | Ferrous Alloys   |                            |           |   |               |            |                          |
|                          | Jan 3/22   |                            |           | Jan 31/23                                     |               |            |                          |
|                          | Non-ferrous Metal  | s                          |           |   |               |            |                          |
|                          | udd 2<br>0<br>2ZZ/E/ep                                   |                            |           | cZ/1Cuer                                      |               |            |                          |
|                          | →<br>Viscosity @ 40°C                                    |                            |           | La.   | 0 - 1 - 1 - 1 |            |                          |
|                          | <sup>55</sup>  |                            |           | -0.5  | Acid Number   |            |                          |
|                          | 50 - Abnormal  |                            |           | ( <sup>0.5</sup><br>( <sup>6</sup> /H0)       | Base          |            |                          |
|                          | ()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>()<br>() |                            |           | Ĕ 0.3   | 0 -           |            |                          |
|                          | Abnormal   |                            |           | 0.3<br>4 0.2<br>10.0<br>4 0.2<br>0.0<br>9 0.0 | 0             |            |                          |
|                          | 40 + 0   |                            |           | 2 0.1   | 0             |            |                          |
|                          | 35   |                            |           |   |               |            |                          |
|                          | Jan 3/22   |                            |           | Jan31/23                                      | Jan 3/22      |            |                          |
| Laboratory<br>Sample No. | : WearCheck USA - 50<br>: KC102003                       | 1 Madison<br><b>Receiv</b> |           | , NC 27513<br>Mar 2023                        |               | SUNCOAST D | ISTRIBUTIO<br>33 123RD C |

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Contact/Location: Service Manager - SUNLAR