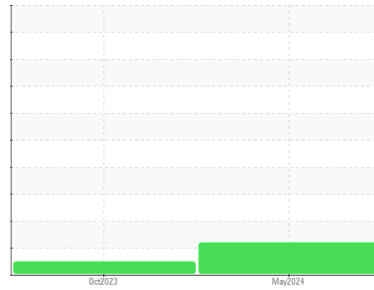




# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id

## KAESER 8484581

Component

Compressor

Fluid

KAESER SIGMA (OEM) S-460 (--- GAL)

### DIAGNOSIS

#### Recommendation

We recommend you service the filters on this component. 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 |             | <b>KC130603</b>    | KC05986498  | ---      |
| Sample Date   | Client Info |             | <b>06 May 2024</b> | 09 Oct 2023 | ---      |
| Machine Age   | hrs         | Client Info | <b>5063</b>        | 2545        | ---      |
| Oil Age       | hrs         | Client Info | <b>2517</b>        | 0           | ---      |
| Oil Changed   | Client Info |             | <b>Not Chngd</b>   | N/A         | ---      |
| Sample Status |             |             | <b>ABNORMAL</b>    | NORMAL      | ---      |

### WEAR METALS

|          | method | limit/base      | current   | history1 | history2 |
|----------|--------|-----------------|-----------|----------|----------|
| Iron     | ppm    | ASTM D5185m >50 | <b>0</b>  | 0        | ---      |
| Chromium | ppm    | ASTM D5185m >10 | <b>0</b>  | 0        | ---      |
| Nickel   | ppm    | ASTM D5185m >3  | <b>0</b>  | 0        | ---      |
| Titanium | ppm    | ASTM D5185m >3  | <b>0</b>  | 0        | ---      |
| Silver   | ppm    | ASTM D5185m >2  | <b>0</b>  | 0        | ---      |
| Aluminum | ppm    | ASTM D5185m >10 | <b>0</b>  | <1       | ---      |
| Lead     | ppm    | ASTM D5185m >10 | <b>0</b>  | 0        | ---      |
| Copper   | ppm    | ASTM D5185m >50 | <b>11</b> | 7        | ---      |
| Tin      | ppm    | ASTM D5185m >10 | <b>0</b>  | <1       | ---      |
| Vanadium | ppm    | ASTM D5185m     | <b>0</b>  | 0        | ---      |
| Cadmium  | ppm    | ASTM D5185m     | <b>0</b>  | 0        | ---      |

### ADDITIVES

|            | method | limit/base     | current  | history1 | history2 |
|------------|--------|----------------|----------|----------|----------|
| Boron      | ppm    | ASTM D5185m    | <b>0</b> | 0        | ---      |
| Barium     | ppm    | ASTM D5185m 90 | <b>0</b> | 0        | ---      |
| Molybdenum | ppm    | ASTM D5185m    | <b>0</b> | 0        | ---      |
| Manganese  | ppm    | ASTM D5185m    | <b>0</b> | 0        | ---      |
| Magnesium  | ppm    | ASTM D5185m 90 | <b>2</b> | 8        | ---      |
| Calcium    | ppm    | ASTM D5185m 2  | <b>0</b> | <1       | ---      |
| Phosphorus | ppm    | ASTM D5185m    | <b>7</b> | <1       | ---      |
| Zinc       | ppm    | ASTM D5185m    | <b>7</b> | 7        | ---      |

### CONTAMINANTS

|           | method | limit/base       | current      | history1 | history2 |
|-----------|--------|------------------|--------------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >25  | <b>&lt;1</b> | 0        | ---      |
| Sodium    | ppm    | ASTM D5185m      | <b>4</b>     | 4        | ---      |
| Potassium | ppm    | ASTM D5185m >20  | <b>2</b>     | 4        | ---      |
| Water     | %      | ASTM D6304 >0.05 | <b>0.005</b> | 0.009    | ---      |
| ppm Water | ppm    | ASTM D6304 >500  | <b>53</b>    | 90.5     | ---      |

### FLUID CLEANLINESS

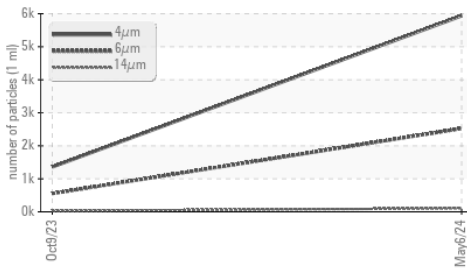
|                 | method       | limit/base | current           | history1 | history2 |
|-----------------|--------------|------------|-------------------|----------|----------|
| Particles >4µm  | ASTM D7647   |            | <b>5938</b>       | 1359     | ---      |
| Particles >6µm  | ASTM D7647   | >1300      | <b>▲ 2523</b>     | 553      | ---      |
| Particles >14µm | ASTM D7647   | >80        | <b>● 105</b>      | 28       | ---      |
| Particles >21µm | ASTM D7647   | >20        | <b>22</b>         | 4        | ---      |
| Particles >38µm | ASTM D7647   | >4         | <b>0</b>          | 0        | ---      |
| Particles >71µm | ASTM D7647   | >3         | <b>0</b>          | 0        | ---      |
| Oil Cleanliness | ISO 4406 (c) | >--/17/13  | <b>▲ 20/19/14</b> | 18/16/12 | ---      |

### FLUID DEGRADATION

|                  | method   | limit/base     | current     | history1 | history2 |
|------------------|----------|----------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 0.4 | <b>0.31</b> | 0.32     | ---      |

# OIL ANALYSIS REPORT

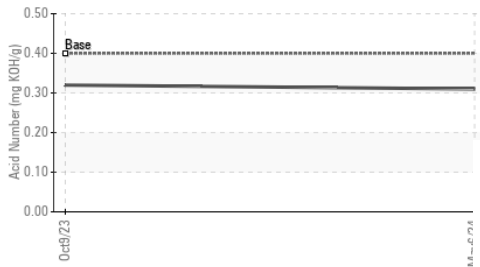
## ▲ Particle Trend



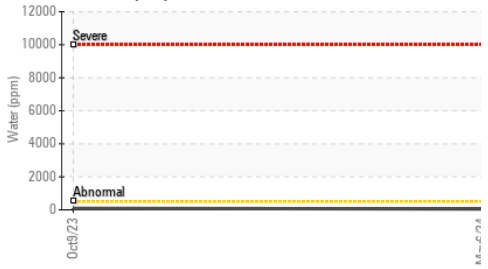
## Water (KF)



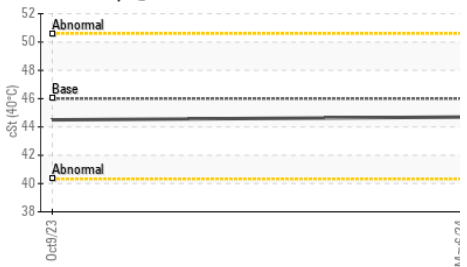
## Acid Number



## Water (KF)



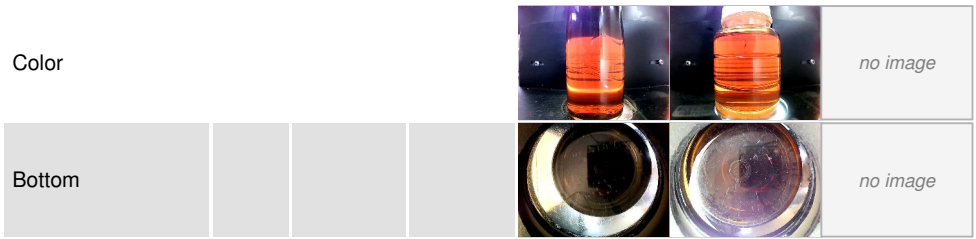
## Viscosity @ 40°C



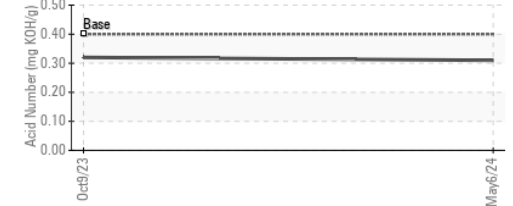
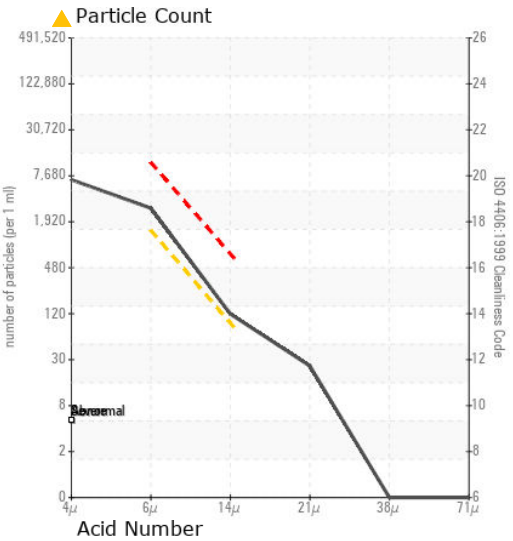
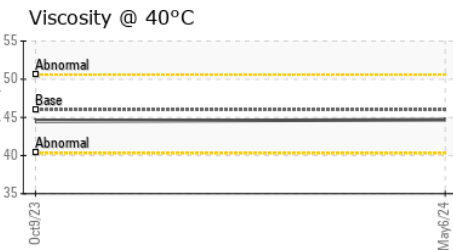
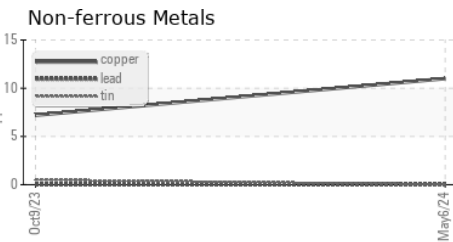
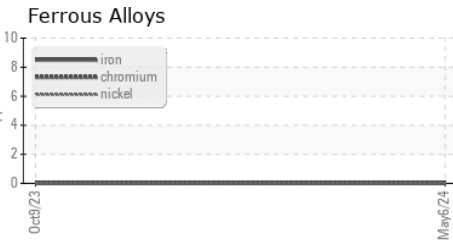
| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | LIGHT    |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | NONE     |
|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

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 40°C      | cSt    | ASTM D445  | 46      | 44.5     | ---      |

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



## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KC130603  
**Lab Number** : 06206503  
**Unique Number** : 11073964  
**Test Package** : IND 2

**Received** : 11 Jun 2024  
**Tested** : 13 Jun 2024  
**Diagnosed** : 13 Jun 2024 - Angela Borella

**PACKAGING CORP OF AMERICA**  
 15600 NW 15TH AVE M  
 MIAMI, FL  
 US 33169

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)

Contact: GLEN RUFFALO  
 glenruffalo@packagingcorp.com

T:  
 F: