

OIL ANALYSIS REPORT

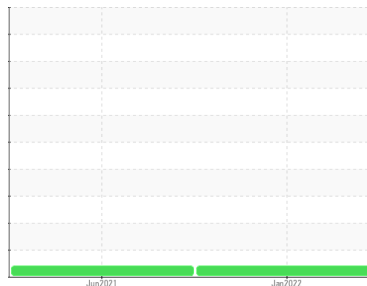
Sample Rating Trend

VIS DEBRIS

Machine Id
KAESER 7005333 (S/N 1195)

Component
Compressor

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



DIAGNOSIS

▲ Recommendation

No corrective action is recommended at this time. The 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 INFORMATION | | method | limit/base | current | history1 | history2 |
|--------------------|-------------|-------------|------------|--------------------|-------------|----------|
| Sample Number | Client Info | | | KC94625 | KC93257 | --- |
| Sample Date | Client Info | | | 25 Jan 2022 | 09 Jun 2021 | --- |
| Machine Age | hrs | Client Info | | 10932 | 7457 | --- |
| Oil Age | hrs | Client Info | | 3400 | 0 | --- |
| Oil Changed | Client Info | | | Not Chngd | Changed | --- |
| Sample Status | | | | ABNORMAL | ATTENTION | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m | >50 | 2 | 2 | --- |
| Chromium | ppm | ASTM D5185m | >10 | 0 | 0 | --- |
| Nickel | ppm | ASTM D5185m | >3 | 0 | 0 | --- |
| Titanium | ppm | ASTM D5185m | >3 | 0 | 0 | --- |
| Silver | ppm | ASTM D5185m | >2 | <1 | <1 | --- |
| Aluminum | ppm | ASTM D5185m | >10 | 1 | <1 | --- |
| Lead | ppm | ASTM D5185m | >10 | 0 | 0 | --- |
| Copper | ppm | ASTM D5185m | >50 | 5 | 5 | --- |
| Tin | ppm | ASTM D5185m | >10 | 0 | 0 | --- |
| Antimony | ppm | ASTM D5185m | | 0 | 0 | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | --- |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | --- |

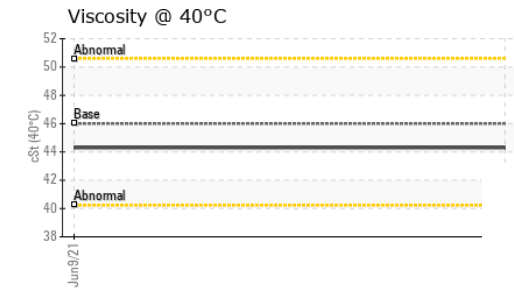
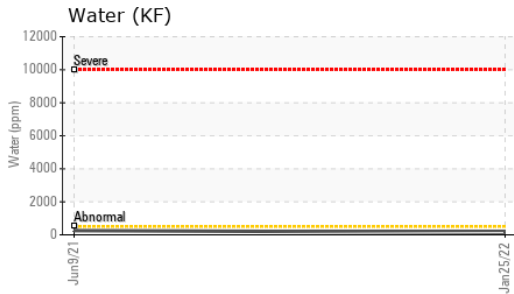
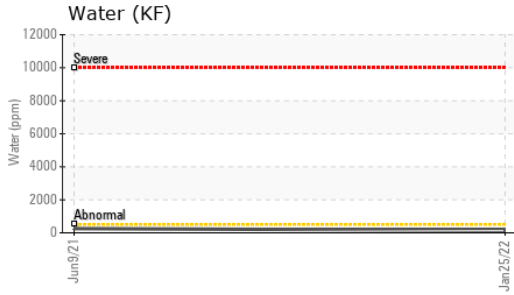
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | | 3 | 11 | --- |
| Barium | ppm | ASTM D5185m | 90 | 3 | 10 | --- |
| Molybdenum | ppm | ASTM D5185m | | 0 | 0 | --- |
| Manganese | ppm | ASTM D5185m | | 0 | <1 | --- |
| Magnesium | ppm | ASTM D5185m | 90 | 65 | 44 | --- |
| Calcium | ppm | ASTM D5185m | 2 | <1 | <1 | --- |
| Phosphorus | ppm | ASTM D5185m | | 3 | 2 | --- |
| Zinc | ppm | ASTM D5185m | | 2 | 3 | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m | >25 | 2 | 0 | --- |
| Sodium | ppm | ASTM D5185m | | 27 | 14 | --- |
| Potassium | ppm | ASTM D5185m | >20 | 5 | 2 | --- |
| Water | % | ASTM D6304 | >0.05 | 0.015 | 0.025 | --- |
| ppm Water | ppm | ASTM D6304 | >500 | 152.6 | 255.4 | --- |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|-------------------|--|--------------|------------|---------|----------|----------|
| Particles >4µm | | ASTM D7647 | | --- | 6044 | --- |
| Particles >6µm | | ASTM D7647 | >1300 | --- | ▲ 1497 | --- |
| Particles >14µm | | ASTM D7647 | >80 | --- | 68 | --- |
| Particles >21µm | | ASTM D7647 | >20 | --- | 15 | --- |
| Particles >38µm | | ASTM D7647 | >4 | --- | 0 | --- |
| Particles >71µm | | ASTM D7647 | >3 | --- | 0 | --- |
| Oil Cleanliness | | ISO 4406 (c) | >--/17/13 | --- | ▲ 18/13 | --- |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.4 | 0.31 | 0.350 | --- |

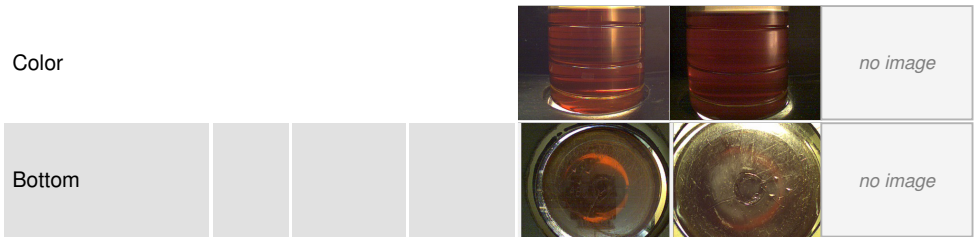
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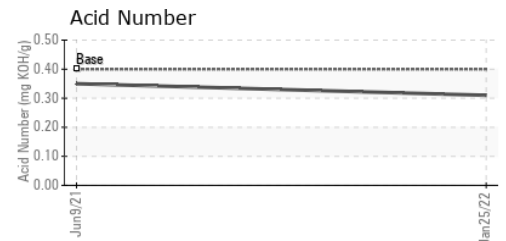
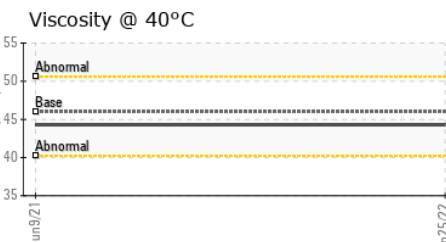
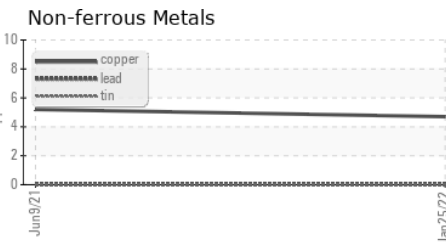
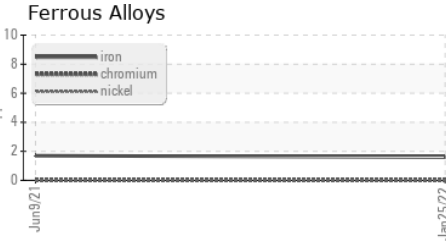
| VISUAL | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|----------------|----------|-----|
| White Metal | scalar | *Visual | NONE | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | --- |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | --- |
| Silt | scalar | *Visual | NONE | NONE | NONE | --- |
| Debris | scalar | *Visual | NONE | ▲ MODER | NONE | --- |
| 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 | 44.3 | 44.3 | --- |

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



GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KC94625 **Recieved** : 24 Feb 2022
Lab Number : 05476914 **Diagnosed** : 25 Feb 2022
Unique Number : 9866128 **Diagnostician** : Don Baldrige
Test Package : IND 2

MCDANEL ADVANCED CERAMICS
 510 NINTH AVE
 BEAVER FALLS, PA
 US 15010
 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)

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F: