## FES C20 (S/N 5112013) <br> Component

## Refrigeration Compressor <br> Fluid <br> USPI ALT-68 SC (205 GAL)

COMPONENT CONDITION SUMMARY


## RECOMMENDATION

Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

| Sample Status |  |  | ATTENTION | ABNORMAL | ABNORMAL |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Particles $>6 \mu \mathrm{~m}$ | ASTM D7647 | >2500 | $\triangle 3223$ | $\triangle 6562$ | $\triangle 8688$ |
| Oil Cleanliness | ISO 4406 (c) | >20/18/15 | $\triangle$ 20/19/14 | - 22/20/14 | - 23/20/14 |

To discuss the diagnosis or test data:
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dougb@wearcheckusa.com
To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

There are no recommended actions for this sample.

## HISTORICAL DIAGNOSIS

## 13 Apr 2023 Diag: Doug Bogart

Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.


06 Feb 2023 Diag: Doug Bogart
Iso


Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.
view report


## view report



OIL ANALYSIS REPORT


## FES C20 (S/N 5112013)

## Refrigeration Compressor <br> USPI ALT-68 SC (205 GAL)

## DIAGNOSIS

## Recommendation

Resample at the next service interval to monitor.

## Wear

All component wear rates are normal.

## Contamination

There is a moderate amount of silt (particulates < 14 microns in size) 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 |  | USP243725 | USP248762 | USP246701 |
| Sample Date |  | Client Info |  | 16 Jul 2023 | 13 Apr 2023 | 06 Feb 2023 |
| Machine Age | hrs | Client Info |  | 0 | 0 | 0 |
| Oil Age | hrs | Client Info |  | 0 | 0 | 0 |
| Oil Changed |  | Client Info |  | N/A | N/A | N/A |
| Sample Status |  |  |  | ATTENTION | ABNORMAL | ABNORMAL |
| WEAR METALS |  | method | limit/base | current | history 1 | history2 |
| Iron | ppm | ASTM D5185m | >8 | 0 | 0 | <1 |
| Chromium | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185m |  | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5185m |  | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >3 | 0 | <1 | 0 |
| Lead | ppm | ASTM D5185m | >2 | 0 | 0 | $<1$ |
| Copper | ppm | ASTM D5185m | >8 | 0 | 0 | <1 |
| Tin | ppm | ASTM D5185m | >4 | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m |  | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m |  | 0 | 0 | 0 |
| ADDITIVES |  | method | limit/base | current | history1 | history2 |
| Boron | ppm | ASTM D5185m |  | 0 | 0 | 0 |
| Barium | ppm | ASTM D5185m |  | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m |  | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185m |  | 0 | <1 | 0 |
| Magnesium | ppm | ASTM D5185m |  | 0 | 0 | 0 |
| Calcium | ppm | ASTM D5185m |  | 1 | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m |  | 0 | 0 | 0 |
| Zinc | ppm | ASTM D5185m |  | 0 | 0 | 0 |
| Sulfur | ppm | ASTM D5185m | 50 | 30 | 0 | 22 |
| CONTAMINANTS |  | method | limit/base | current | history1 | history2 |
| Silicon | ppm | ASTM D5185m | >15 | <1 | <1 | $<1$ |
| Sodium | ppm | ASTM D5185m |  | 0 | 0 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | <1 | 0 | 0 |
| Water | \% | ASTM D6304 | >0.01 | 0.003 | 0.003 | 0.003 |
| ppm Water | ppm | ASTM D6304 | >100 | 28.5 | 38.6 | 28.7 |


| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Particles $>4 \mu \mathrm{~m}$ | ASTM D7647 | >10000 | 9418 | - 33957 | $\triangle 49402$ |
| Particles $>6 \mu \mathrm{~m}$ | ASTM D7647 | >2500 | $\triangle 3223$ | - 6562 | - 8688 |
| Particles $>14 \mu \mathrm{~m}$ | ASTM D7647 | >320 | 143 | 86 | 91 |
| Particles $>21 \mu \mathrm{~m}$ | ASTM D7647 | >80 | 21 | 7 | 15 |
| Particles $>38 \mu \mathrm{~m}$ | ASTM D7647 | >20 | 0 | 0 | 0 |
| Particles $>71 \mu \mathrm{~m}$ | ASTM D7647 | >4 | 0 | 0 | 0 |
| Oil Cleanliness | ISO 4406 (c) | >20/18/15 | $\triangle$ 20/19/14 | $\triangle 22 / 20 / 14$ | $\triangle 23 / 20 / 14$ |
| FLUID DEGRADATION | method | limit/base | current | history1 | history2 |
| Acid Number | ASTM D974 | 0.005 | 015 | 0.013 | 0.015 |

## OIL ANALYSIS REPORT



| 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 | LIGHT | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE | NONE |
| 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 | >0.01 | NEG | NEG | NEG |
| Free Water | scalar | *Visual |  | NEG | NEG | NEG |
| FLUID PROPERTIES |  | method | limit/base | current | history1 | history2 |
| Visc @ $40^{\circ} \mathrm{C}$ | cSt | ASTM D445 | 65.6 | 67.7 | 65.8 | 66.1 |
| SAMPLE IMAGES |  | method | limit/base | current | history1 | history2 |
| Color |  |  |  |  |  |  |
| Bottom |  |  |  |  |  |  |



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[^0]:    ANAB
    Certificate L2367
    Laboratory
    Sample No.
    Lab Numbe er正
    : WearCheck USA - 501 Madison Ave., Cary, NC 27513
    : USP243725 Received : 17 Jul 2023 : $05899922 \quad$ Diagnosed : 18 Jul 2023 : 10561278 Diagnostician : Doug Bogart

    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)

