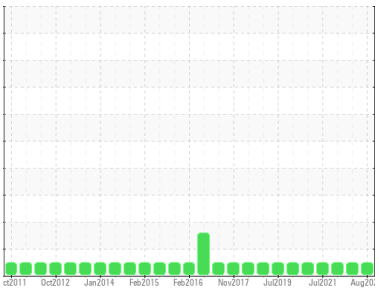
# OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
## AMMC-10 (S/N S0123PFMFTHAA3)
Component
**Refrigeration Compressor**
Fluid
**USPI 1009-68 SC (195 GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

**Wear**
All component wear rates are normal.

**Contamination**
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

**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 | | **USP232925** | USP232924 | USP229041 |
| Sample Date | | Client Info | | **24 Aug 2023** | 14 Mar 2023 | 13 Sep 2022 |
| 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 | | | | **NORMAL** | NORMAL | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >8 | **<1** | 0 | 0 |
| Chromium | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >3 | **0** | 0 | <1 |
| Lead | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >8 | **0** | 0 | 0 |
| Tin | ppm | ASTM D5185m | >4 | **0** | 0 | 0 |
| Antimony | ppm | ASTM D5185m | | **---** | --- | --- |
| 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 | <1 |
| Molybdenum | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Calcium | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Phosphorus | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Zinc | ppm | ASTM D5185m | | **1** | 0 | 0 |
| Sulfur | ppm | ASTM D5185m | 50 | **34** | 20 | 55 |

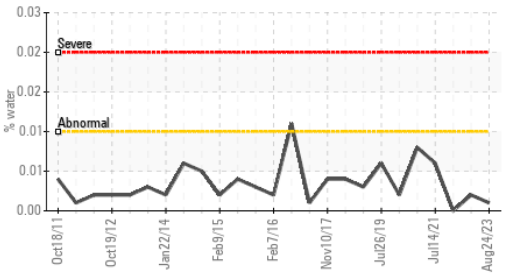
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >15 | **<1** | <1 | <1 |
| Sodium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | **<1** | <1 | 0 |
| Water | % | ASTM D6304 | >0.01 | **0.001** | 0.002 | 0 |
| ppm Water | ppm | ASTM D6304 | >100 | **9.9** | 21.2 | 0.0 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >10000 | **920** | 834 | 5953 |
| Particles >6µm | | ASTM D7647 | >2500 | **262** | 219 | 1157 |
| Particles >14µm | | ASTM D7647 | >320 | **19** | 12 | 43 |
| Particles >21µm | | ASTM D7647 | >80 | **6** | 1 | 6 |
| Particles >38µm | | ASTM D7647 | >20 | **1** | 0 | 1 |
| Particles >71µm | | ASTM D7647 | >4 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >20/18/15 | **17/15/11** | 17/15/11 | 20/17/13 |

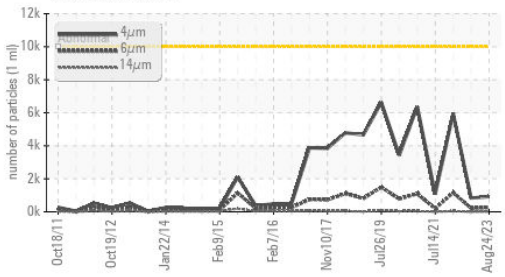
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974 | 0.005 | **0.013** | 0.015 | 0.014 |

# OIL ANALYSIS REPORT

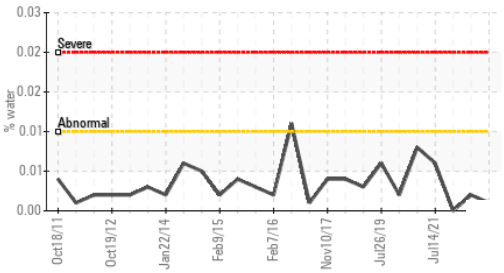
Water



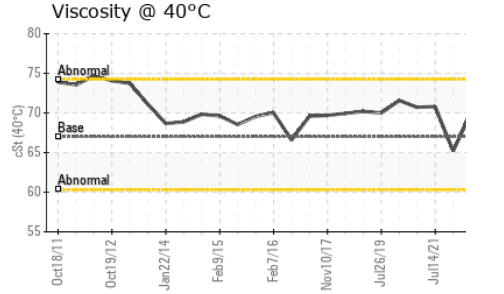

Particle Trend



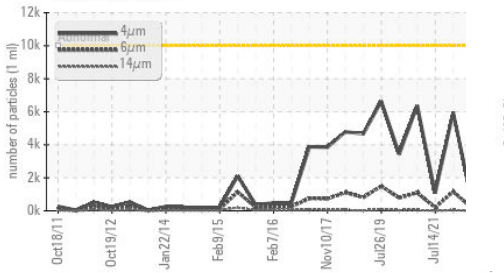

Water




Viscosity @ 40°C

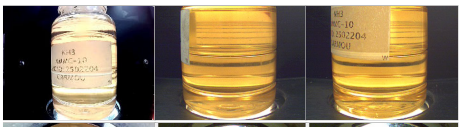
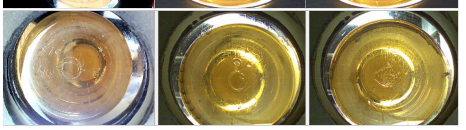



Particle Trend



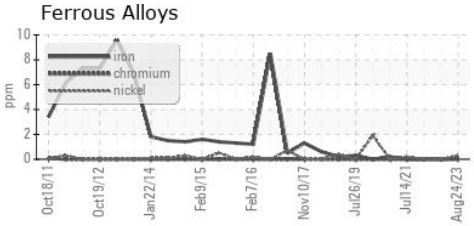

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | 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°C | cSt | ASTM D445 | 67 | **71.0** | 70.0 | 65.2 |

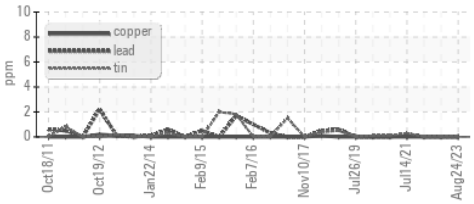
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

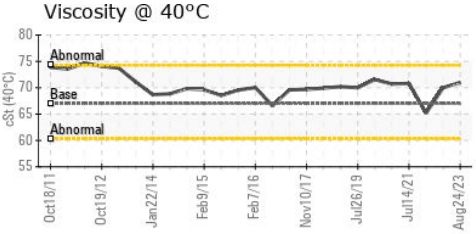
Ferrous Alloys



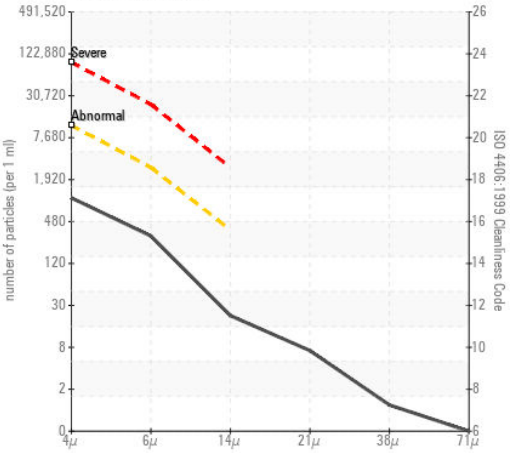

Non-ferrous Metals



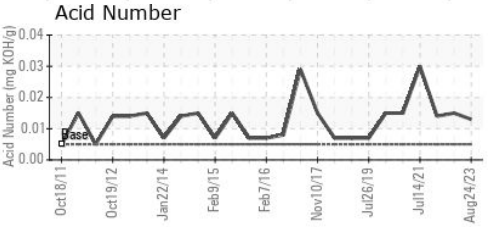

Viscosity @ 40°C




Particle Count




Acid Number





**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : USP232925
**Lab Number** : 05935503
**Unique Number** : 10620774
**Test Package** : IND 2

**Received** : 25 Aug 2023
**Diagnosed** : 28 Aug 2023
**Diagnostician** : Doug Bogart

Certificate L2367


*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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