

# **OIL ANALYSIS REPORT**

### Sample Rating Trend



**FRICK TYSMON 3 HS (S/N TDSH223351817E)** 

**Refrigeration Compressor** 

USPI ALT-68 SC (--- GAL)

### Recommendation

Resample at the next service interval to monitor.

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.

|               |        | 12011 Jugo        | 13 Sep2014 Jun2016 | Oct2017 Jan2019 Apr2020 | Jun2021     |             |
|---------------|--------|-------------------|--------------------|-------------------------|-------------|-------------|
| SAMPLE INFORM | MATION | method            | limit/base         | current                 | history1    | history2    |
| Sample Number |        | Client Info       |                    | USP0001910              | USP234888   | USP233112   |
| Sample Date   |        | Client Info       |                    | 19 Sep 2023             | 19 Sep 2022 | 11 Jul 2022 |
| Machine Age   | hrs    | Client Info       |                    | 572                     | 12847       | 12435       |
| Oil Age       | hrs    | Client Info       |                    | 5                       | 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    |
| ron           | ppm    | ASTM D5185m       | >8                 | 0                       | <1          | <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                       | 0           | <1          |
| _ead          | ppm    | ASTM D5185m       | >2                 | 0                       | <1          | 0           |
| Copper        | ppm    | ASTM D5185m       | >8                 | <1                      | 0           | <1          |
| Tin           | ppm    | ASTM D5185m       | >4                 | 0                       | 0           | <1          |
| Antimony      | ppm    | ASTM D5185m       |                    |                         |             |             |
| Vanadium      | ppm    | ASTM D5185m       |                    | <1                      | 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       |                    | <1                      | 0           | 0           |
| Magnesium     | ppm    | ASTM D5185m       |                    | 0                       | 0           | 0           |
| Calcium       | ppm    | ASTM D5185m       |                    | 0                       | 0           | 0           |
| Phosphorus    | ppm    | ASTM D5185m       |                    | <1                      | 0           | 0           |
| Zinc          | ppm    | ASTM D5185m       |                    | 0                       | 0           | 0           |
| Sulfur        | ppm    | ASTM D5185m       | 50                 | 193                     | 322         | 270         |
| CONTAMINANTS  | ;      | method            | limit/base         | current                 | history1    | history2    |
| Silicon       | ppm    | ASTM D5185m       | >15                | <1                      | 3           | 2           |
| Sodium        | ppm    | ASTM D5185m       |                    | 0                       | 0           | 0           |
| Potassium     | ppm    | ASTM D5185m       | >20                | 0                       | 0           | 0           |
| Water         | %      | ASTM D6304        | >0.01              | 0.005                   | 0.004       | 0.006       |
| nnm Water     | nnm    | <b>ASTM D6304</b> | <b>\100</b>        | 50.0                    | 42.5        | 65.6        |

| Sodium          | ppm  | ASTM D5185m  |            | 0        | 0        | 0        |
|-----------------|------|--------------|------------|----------|----------|----------|
| Potassium       | ppm  | ASTM D5185m  | >20        | 0        | 0        | 0        |
| Water           | %    | ASTM D6304   | >0.01      | 0.005    | 0.004    | 0.006    |
| ppm Water       | ppm  | ASTM D6304   | >100       | 50.0     | 42.5     | 65.6     |
| FLUID CLEANLIN  | ESS  | method       | limit/base | current  | history1 | history2 |
| Particles >4µm  |      | ASTM D7647   | >10000     | 5631     | 1627     | 1673     |
| Particles >6µm  |      | ASTM D7647   | >2500      | 1232     | 126      | 217      |
| Particles >14μm |      | ASTM D7647   | >320       | 38       | 13       | 10       |
| Particles >21µm |      | ASTM D7647   | >80        | 8        | 5        | 1        |
| Particles >38µm |      | ASTM D7647   | >20        | 2        | 0        | 0        |
| Particles >71µm |      | ASTM D7647   | >4         | 0        | 0        | 0        |
| Oil Cleanliness |      | ISO 4406 (c) | >20/18/15  | 20/17/12 | 18/14/11 | 18/15/10 |
| FLUID DECDADA   | TION |              |            |          |          | 1-1-1    |

Acid Number (AN) mg KOH/g ASTM D974 0.005 0.015



## **OIL ANALYSIS REPORT**





Certificate L2367

Sample No. Lab Number **Unique Number** Test Package

: 05961291

: USP0001910 : 10662504 : IND 2

Diagnosed : 27 Sep 2023 Diagnostician : Doug Bogart

MONETT, MO US 65708

T: (417)235-3104

F: (417)235-9392

Contact: BRUCE CHANDLER

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)