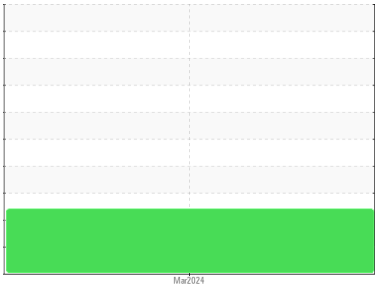
# OIL ANALYSIS REPORT

Sample Rating Trend




**WATER**

Area
## 10050 Ch #LR Circ 1 [GTT224-317]
Machine Id
## CARRIER 2003Q02700(1)
Component
**Chiller**
Fluid
**COMP OIL (POE) ISO 220 (--- GAL)**

## DIAGNOSIS

**Recommendation**

If not recently done change any filter driers to reduce moisture level. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

**Wear**

Copper ppm levels are abnormal. The elevated copper reading suggests the effects of oil migration through the evaporator (oil loss from the compressor) possibly occurring during intervals of operation at low cooling load conditions.

**Contamination**

The elevated moisture content is associated with POE oils which are hygroscopic, and can absorb moisture from sampling and processing.

**Fluid Condition**

The AN level is acceptable for this fluid.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GTT0002015** | --- | --- |
| Sample Date | | Client Info | | **01 Mar 2024** | --- | --- |
| Machine Age | hrs | Client Info | | **0** | --- | --- |
| Oil Age | hrs | Client Info | | **0** | --- | --- |
| Oil Changed | | Client Info | | **N/A** | --- | --- |
| Sample Status | | | | **ABNORMAL** | --- | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >8 | **<1** | --- | --- |
| Chromium | ppm | ASTM D5185(m) | >2 | **0** | --- | --- |
| Nickel | ppm | ASTM D5185(m) | | **<1** | --- | --- |
| Titanium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Silver | ppm | ASTM D5185(m) | >2 | **0** | --- | --- |
| Aluminum | ppm | ASTM D5185(m) | >3 | **<1** | --- | --- |
| Lead | ppm | ASTM D5185(m) | >2 | **2** | --- | --- |
| Copper | ppm | ASTM D5185(m) | >8 | ▲ **9** | --- | --- |
| Tin | ppm | ASTM D5185(m) | >4 | **0** | --- | --- |
| Antimony | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Vanadium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Beryllium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Cadmium | ppm | ASTM D5185(m) | | **0** | --- | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 5 | **0** | --- | --- |
| Barium | ppm | ASTM D5185(m) | 5 | **0** | --- | --- |
| Molybdenum | ppm | ASTM D5185(m) | 5 | **0** | --- | --- |
| Manganese | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Magnesium | ppm | ASTM D5185(m) | 5 | **<1** | --- | --- |
| Calcium | ppm | ASTM D5185(m) | 5 | **0** | --- | --- |
| Phosphorus | ppm | ASTM D5185(m) | 400 | **2** | --- | --- |
| Zinc | ppm | ASTM D5185(m) | 5 | **16** | --- | --- |
| Sulfur | ppm | ASTM D5185(m) | 100 | **0** | --- | --- |
| Lithium | ppm | ASTM D5185(m) | | **<1** | --- | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >15 | **48** | --- | --- |
| Sodium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | --- | --- |
| ppm Water | ppm | ASTM D6304* | >100 | ● **446** | --- | --- |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.40 | **0.06** | --- | --- |

# OIL ANALYSIS REPORT

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | Visual* | NONE | **NONE** | --- | --- |
| Yellow Metal | scalar | Visual* | NONE | **NONE** | --- | --- |
| Precipitate | scalar | Visual* | NONE | **NONE** | --- | --- |
| Silt | scalar | Visual* | NONE | **NONE** | --- | --- |
| Debris | scalar | Visual* | NONE | **NONE** | --- | --- |
| Sand/Dirt | scalar | Visual* | NONE | **NONE** | --- | --- |
| Appearance | scalar | Visual* | NORML | **NORML** | --- | --- |
| Odor | scalar | Visual* | NORML | **NORML** | --- | --- |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D7279(m) | 220 | **209** | --- | --- |

| SAMPLE IMAGES | | | | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Color | | | |  | *no image* | *no image* |
| Bottom | | | |  | *no image* | *no image* |

GRAPHS

**Sample No.** : GTT0002015
**Lab Number** : 02622184
**Unique Number** : 5747303
**Test Package** : IND 2 ( Additional Tests: KV40 )

**Received** : 14 Mar 2024
**Tested** : 20 Mar 2024
**Diagnosed** : 20 Mar 2024 - Bill Quesnel

*To discuss this sample report, contact Customer Service at 1-905-847-9300 Ext 26.*
*Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.*
*Damages: Seller shall in no event be liable for special, incidental, or consequential damages, of a commercial nature, resulting from any cause.*

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